**3GPP TSG-RAN2 Meeting #125 *R2-2401677***

 **Athens, Greece, Feb.26 – Mar.1, 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **4617** | **rev** | **1** | **Current version:** | **18.0.0** |  |
|  |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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|  |
| ***Title:***  | Miscellaneous RRC corrections for Network-controlled repeaters |
|  |  |
| ***Source to WG:*** | ZTE Corporation (Rapporteur) |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_netcon\_repeater |  | ***Date:*** | 2024-03-07 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The CR is to address the issues mentioned by RILs: E079, E106, E114, S651 and N082. |
|  |  |
| ***Summary of change:*** | 1. In text procedure, to refer to field name *ncr-FwdConfig*, not IE name *NCR-FwdConfig*;
2. Add extension markers to NCR-AperiodicFwdTimeResource-r18, NCR-PeriodicFwdResource-r18 and NCR-SemiPersistentFwdResource-r18;
3. Change “Need N” to “setupRelease {}, Need M” for aperiodicFwdConfig-r18 in NCR-FwdConfig-r18.
4. Add missing RAN1 spec references;
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|  |  |
| ***Consequences if not approved:*** | Wrong reference and need code are used in RRC spec for NCR. |
|  |  |
| ***Clauses affected:*** | 5.3.5.5.14, 5.3.7.2, 5.3.8.3, 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:*** |  |

*START OF CHANGES*

##### 5.3.5.5.14 NCR-Fwd configuration

The NCR-MT shall:

1> if *ncr-FwdConfig* is set to *setup*:

2> if *ncr-FwdConfig* includes periodic forwarding resource configuration:

3> indicate to NCR-Fwd to forward in accordance with the configured periodic forwarding resource set(s);

1> else (*ncr-FwdConfig* is set to *release)*:

2> release NCR-Fwd configuration;

2> indicate to NCR-Fwd to cease forwarding.

*NEXT CHANGE*

#### 5.3.7.2 Initiation

The UE initiates the procedure when one of the following conditions is met:

1> upon detecting radio link failure of the MCG and *t316* is not configured, in accordance with 5.3.10; or

1> upon detecting radio link failure of the MCG while SCG transmission is suspended, in accordance with 5.3.10; or

1> upon detecting radio link failure of the MCG while PSCell change or PSCell addition is ongoing, in accordance with 5.3.10; or

1> upon detecting radio link failure of the MCG while the SCG is deactivated, in accordance with 5.3.10; or

1> upon re-configuration with sync failure of the MCG, in accordance with clause 5.3.5.8.3; or

1> upon mobility from NR failure, in accordance with clause 5.4.3.5; or

1> upon integrity check failure indication from lower layers concerning SRB1 or SRB2, except if the integrity check failure is detected on the *RRCReestablishment* message; or

1> upon an RRC connection reconfiguration failure, in accordance with clause 5.3.5.8.2; or

1> upon detecting radio link failure for the SCG while MCG transmission is suspended, in accordance with clause 5.3.10.3 in NR-DC or in accordance with TS 36.331 [10] clause 5.3.11.3 in NE-DC; or

1> upon reconfiguration with sync failure of the SCG while MCG transmission is suspended in accordance with clause 5.3.5.8.3; or

1> upon SCG change failure while MCG transmission is suspended in accordance with TS 36.331 [10] clause 5.3.5.7a; or

1> upon SCG configuration failure while MCG transmission is suspended in accordance with clause 5.3.5.8.2 in NR-DC or in accordance with TS 36.331 [10] clause 5.3.5.5 in NE-DC; or

1> upon integrity check failure indication from SCG lower layers concerning SRB3 while MCG is suspended; or

1> upon T316 expiry, in accordance with clause 5.7.3b.5; or

1> upon detecting sidelink radio link failure by L2 U2N Remote UE in RRC\_CONNECTED which is not configured with MP, in accordance with clause 5.8.9.3; or

1> upon reception of *NotificationMessageSidelink* including *indicationType* by L2 U2N Remote UE in RRC\_CONNECTED which is not configured with MP, in accordance with clause 5.8.9.10; or

1> upon PC5 unicast link release for the serving L2 U2N Relay UE indicated by upper layer at L2 U2N Remote UE in RRC\_CONNECTED which is not configured with MP while T301 is not running; or

1> if MP is configured, upon detecting radio link failure of the MCG (i.e. direct path) in accordance with clause 5.3.10 while the transmission of indirect path is suspended as specified in 5.3.5.17; or

1> if MP is configured, upon detecting sidelink radio link failure of SL indirect path by L2 U2N Remote UE, in accordance with clause 5.8.9.3, while MCG transmission (i.e. direct path) is suspended as specified in clause 5.7.3b; or

1> if MP is configured, upon reception of *NotificationMessageSidelink* including *indicationType* in accordance with clause 5.8.9.10, while MCG transmission (i.e. direct path) is suspended as specified in clause 5.7.3b; or

1> if MP is configured, upon PC5 unicast link release indicated by upper layer at L2 U2N Remote UE, while MCG transmission (i.e. direct path) is suspended as specified in clause 5.7.3b; or

1> if MP is configured, upon detecting the failure of N3C indirect path by N3C remote UE in accordance with clause 5.7.3c, while MCG transmission (i.e. direct path) is suspended.

NOTE 0: It is up to UE implementation whether to initiate the procedure while T346g is running.

Upon initiation of the procedure, the UE shall:

1> stop timer T310, if running;

1> stop timer T312, if running;

1> stop timer T304, if running;

1> start timer T311;

1> stop timer T316, if running;

1> if UE is not configured with *attemptCondReconfig*;and

1> if UE is not configured with *attemptLTM-Switch*:

2> reset MAC;

2> release *spCellConfig*, if configured;

2> suspend all RBs, and BH RLC channels for IAB-MT, and Uu Relay RLC channels for L2 U2N Relay UE, except SRB0 and broadcast MRBs;

2> release the MCG SCell(s), if configured;

2> if MR-DC is configured:

3> perform MR-DC release, as specified in clause 5.3.5.10;

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

2> release *delayBudgetReportingConfig*, if configured and stop timer T342, if running;

2> release *overheatingAssistanceConfig*, if configured and stop timer T345, if running;

2> release *idc-AssistanceConfig*, if configured;

2> release *btNameList*, if configured;

2> release *wlanNameList*, if configured;

2> release *sensorNameList*, if configured;

2> release *drx-PreferenceConfig* for the MCG, if configured and stop timer T346a associated with the MCG, if running;

2> release *maxBW-PreferenceConfig* for the MCG, if configured and stop timer T346b associated with the MCG, if running;

2> release *maxCC-PreferenceConfig* for the MCG, if configured and stop timer T346c associated with the MCG, if running;

2> release *maxMIMO-LayerPreferenceConfig* for the MCG, if configured and stop timer T346d associated with the MCG, if running;

2> release *minSchedulingOffsetPreferenceConfig* for the MCG, if configured stop timer T346e associated with the MCG, if running;

2> release *rlm-RelaxationReportingConfig* for the MCG, if configured and stop timer T346j associated with the MCG, if running;

2> release *bfd-RelaxationReportingConfig* for the MCG, if configured and stop timer T346k associated with the MCG, if running;

2> release *releasePreferenceConfig*, if configured stop timer T346f, if running;

2> release *onDemandSIB-Request* if configured, and stop timer T350, if running;

2> release *referenceTimePreferenceReporting*, if configured;

2> release *sl-AssistanceConfigNR*, if configured;

2> release *obtainCommonLocation*, if configured;

2> release *musim-GapAssistanceConfig*, if configured and stop timer T346h, if running;

2> release *musim-GapPriorityAssistanceConfig*, if configured;

2> release *musim-LeaveAssistanceConfig*, if configured;

2> release *musim-CapabilityRestrictionConfig*, if configured and stop timer T346n, if running;

2> release*ul-GapFR2-PreferenceConfig*, if configured;

2> release *scg-DeactivationPreferenceConfig*, if configured, and stop timer T346i, if running;

2> release *propDelayDiffReportConfig*, if configured;

2> release *rrm-MeasRelaxationReportingConfig*, if configured;

2> release *maxBW-PreferenceConfigFR2-2*, if configured;

2> release *maxMIMO-LayerPreferenceConfigFR2-2*, if configured;

2> release *minSchedulingOffsetPreferenceConfigExt*, if configured;

2> release *multiRx-PreferenceReportingConfigFR2*, if configured, and stop timer T440, if running;

2> release *uav-FlightPathAvailabilityConfig*, if configured;

2> release *ul-TrafficInfoReportingConfig*, if configured, and stop all instances of timer T346x, if running;

1> release *successHO-Config*, if configured;

1> release *successPSCell-Config* configured by the PCell, if configured;

1> release *successPSCell-Config* configured by the PSCell, if configured;

1> if any DAPS bearer is configured:

2> reset the source MAC and release the source MAC configuration;

2> for each DAPS bearer:

3> release the RLC entity or entities as specified in TS 38.322 [4], clause 5.1.3, and the associated logical channel for the source SpCell;

3> reconfigure the PDCP entity to release DAPS as specified in TS 38.323 [5];

2> for each SRB:

3> release the PDCP entity for the source SpCell;

3> release the RLC entity as specified in TS 38.322 [4], clause 5.1.3, and the associated logical channel for the source SpCell;

2> release the physical channel configuration for the source SpCell;

2> discard the keys used in the source SpCell (the KgNB key, the KRRCenc key, the KRRCint key, the KUPint key and the KUPenc key), if any;

1> release *sl-L2RelayUE-Config*, if configured;

1> release *sl-L2RemoteUE-Config*, if configured;

1> release the SRAP entity, if configured;

1> release *ncr-FwdConfig*, if configured;

1> if the UE is NCR-MT:

2> indicate to NCR-Fwd to cease forwarding;

1> if SL indirect path is configured:

2> release cell identity and relay UE ID configured in *sl-IndirectPathAddChange*;

2> indicate upper layers to trigger PC5 unicast link release of the SL indirect path;

1> if N3C indirect path is configured:

2> release *n3c-IndirectPathAddChange*;

2> consider the non-3GPP connection is not used;

1> if the UE is acting as a N3C relay UE:

2> release *n3c-IndirectPathConfigRelay*;

2> consider the non-3GPP connection is not used;

1> if the UE is acting as L2 U2N Remote UE and MP via L2 U2N Relay UE is not configured:

2> if the PC5-RRC connection with the U2N Relay UE is determined to be released:

3> indicate upper layers to trigger PC5 unicast link release;

3> perform either cell selection in accordance with the cell selection process as specified in TS 38.304 [20], or relay selection as specified in clause 5.8.15.3, or both;

2> else (i.e., maintain the PC5 RRC connection):

3> consider the connected L2 U2N Relay UE as suitable and perform actions as specified in clause 5.3.7.3a;

NOTE 1: It is up to Remote UE implementation whether to release or keep the current PC5 unicast link.

1> else:

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

3> 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> perform cell selection in accordance with the cell selection process as specified in TS 38.304 [20].

NOTE 2: For L2 U2N Remote UE, if both a suitable cell and a suitable relay are available, the UE can select either one based on its implementation.

*NEXT CHANGE*

#### 5.3.8.3 Reception of the *RRCRelease* by the UE

The UE shall:

1> delay the following actions defined in this clause 60 ms from the moment the *RRCRelease* message was received or optionally when lower layers indicate that the receipt of the *RRCRelease* message has been successfully acknowledged, whichever is earlier;

NOTE 0: When the *RRCRelease* message is received on a HARQ process with disabled HARQ feedback, and when STATUS reporting, as defined in TS 38.322 [4], has not been triggered for a logical channel associated with the SRB1, the lower layers can be considered to have indicated that the receipt of the *RRCRelease* message has been successfully acknowledged.

1> stop timer T380, if running;

1> stop timer T320, if running;

1> if timer T316 is running;

2> stop timer T316;

2> if the UE supports RLF-Report for fast MCG recovery procedure:

3> set the *elapsedTimeT316* in the *VarRLF-Report* to the value of the elapsed time of the timer T316;

3> set the *pSCellId* to the global cell identity of the PSCell, if available, otherwise to the physical cell identity and carrier frequency of the PSCell;

2> else:

3> clear the information included in *VarRLF-Report,* if any;

1> stop timer T350, if running;

1> stop timer T346g, if running;

1> if theAS security is not activated:

2> ignore any field included in *RRCRelease* message except *waitTime*;

2> perform the actions upon going to RRC\_IDLE as specified in 5.3.11 with the release cause 'other' upon which the procedure ends;

1> if the *RRCRelease* message includes *redirectedCarrierInfo* indicating redirection to *eutra*:

2> if *cnType* is included:

3> after the cell selection, indicate the available CN Type(s) and the received *cnType* to upper layers;

NOTE 1: Handling the case if the E-UTRA cell selected after the redirection does not support the core network type specified by the *cnType,* is up to UE implementation.

2> if *voiceFallbackIndication* is included:

3> consider the RRC connection release was for EPS fallback for IMS voice (see TS 23.502 [43]);

1> if the *RRCRelease* message includes the *cellReselectionPriorities*:

2> store the cell reselection priority information provided by the *cellReselectionPriorities*;

2> if the *t320* is included:

3> start timer T320, with the timer value set according to the value of *t320*;

1> else:

2> apply the cell reselection priority information broadcast in the system information;

1> if *deprioritisationReq* is included and the UE supports RRC connection release with deprioritisation:

2> start or restart timer T325 with the timer value set to the *deprioritisationTimer* signalled;

2> store the *deprioritisationReq* until T325 expiry;

NOTE 1a: The UE stores the deprioritisation request irrespective of any cell reselection absolute priority assignments (by dedicated or common signalling) and regardless of RRC connections in NR or other RATs unless specified otherwise.

1> if the *RRCRelease* includes the *measIdleConfig*:

2> if T331 is running:

3> stop timer T331;

3> perform the actions as specified in 5.7.8.3;

2> if the *measIdleConfig* is set to *setup*:

3> store the received *measIdleDuration* in *VarMeasIdleConfig*;

3> start timer T331 with the value set to *measIdleDuration*;

3> if the *measIdleConfig* contains *measIdleCarrierListNR*:

4> store the received *measIdleCarrierListNR* in *VarMeasIdleConfig*;

3> if the *measIdleConfig* contains *measIdleCarrierListEUTRA*:

4> store the received *measIdleCarrierListEUTRA* in *VarMeasIdleConfig*;

3> if the *measIdleConfig* contains *validityAreaList*:

4> store the received *validityAreaList* in *VarMeasIdleConfig*;

1> if the *RRCRelease* includes *suspendConfig*:

2> reset MAC and release the default MAC Cell Group configuration, if any;

2> apply the received *suspendConfig* except the received *nextHopChainingCount*;

2> if the *sdt-Config* is configured:

3> for each of the DRB in the *sdt-DRB-List*:

4> consider the DRB to be configured for SDT;

3> if *sdt-SRB2-Indication* is configured:

4> consider the SRB2 to be configured for SDT;

3> for each RLC bearer (except those associated with broadcast MRBs) that is not suspended:

4> re-establish the RLC entity as specified in TS 38.322 [4];

3> for SRB2 (if it is resumed) and for SRB1:

4> trigger the PDCP entity to perform SDU discard as specified in TS 38.323 [5];

3> if *sdt-MAC-PHY-CG-Config* is configured:

4> configure the PCell with the configured grant resources for SDT and instruct the MAC entity to start the *cg-SDT-TimeAlignmentTimer*;

2> if *srs-PosRRC-Inactive* is configured:

3> apply the configuration and instruct MAC to start the *inactivePosSRS-TimeAlignmentTimer*;

2> if *srs-PosRRC-InactiveValidityAreaConfig* is configured:

3> apply the configuration and instruct MAC to start the *inactivePosSRS-ValidityAreaTAT*;

NOTE 1b: The Network should provide full configuration to UE for SRS for Positioning in RRC\_INACTIVE.

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

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

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

2> for each *measId* of the MCG *measConfig* and for each *measId* of the SCG *measConfig*, if configured, if the associated *reportConfig* has a *reportType* set to *condTriggerConfig*:

3> for the associated *reportConfigId*:

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

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

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

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

2> for NCR-MT, if *ncr-FwdConfig* is configured:

3> if the *ncr-FwdConfig* includes periodic forwarding resource configuration:

4> indicate to NCR-Fwd to continue forwarding only in accordance with the configured periodic forwarding resource set(s);

3> else:

4> indicate to NCR-Fwd to cease forwarding;

2> if the UE is acting as L2 U2N Remote UE and is not configured with MP:

3> if the PC5-RRC connection with the U2N Relay UE is determined to be released:

4> indicate upper layers to trigger PC5 unicast link release;

3> else (i.e., maintain the PC5 RRC connection):

4> establish or re-establish (e.g. via release and add) SL RLC entity for SRB1;

2> else:

3> re-establish RLC entities for SRB1;

2> if the *RRCRelease* message with *suspendConfig* was received in response to an *RRCResumeRequest* or an *RRCResumeRequest1*:

3> stop the timer T319 if running;

3> in the stored UE Inactive AS context:

4> replace the KgNB and KRRCint keys with the current KgNB and KRRCint keys;

4> replace the *nextHopChainingCount* with the value of *nextHopChainingCount* received in the *RRCRelease* message*;*

4> replace the *cellIdentity* with the *cellIdentity* of the cell the UE has received the *RRCRelease* message;

4> if the *suspendConfig* contains the *sl-UEIdentityRemote* (i.e. the UE is a L2 U2N Remote UE):

5> replace the C-RNTI with the value of the *sl-UEIdentityRemote*;

5> replace the physical cell identitywith the value of the *sl-PhysCellId* in *sl-ServingCellInfo* contained in the discovery message received from the connected L2 U2N Relay UE;

4> else:

5> replace the C-RNTI with the C-RNTI used in the cell (see TS 38.321 [3]) the UE has received the *RRCRelease* message;

5> replace the physical cell identitywith the physical cell identity of the cell the UE has received the *RRCRelease* message;

3> replace the *nextHopChainingCount* with the value associated with the current KgNB;

3> stop the timer T319a if running and consider SDT procedure is not ongoing;

2> else:

3> store in the UE Inactive AS Context the *nextHopChainingCount* received in the *RRCRelease* message*,* the current KgNB and KRRCint keys, the ROHC state, the EHC context(s), the UDC state, the stored QoS flow to DRB mapping rules, the application layer measurement configuration, the C-RNTI used in the source PCell, the *cellIdentity* and the physical cell identity of the source PCell, the *ncr-FwdConfig* (if configured), the *spCellConfigCommon* within *ReconfigurationWithSync* of the NR PSCell (if configured) and all other parameters configured except for:

- parameters within *ReconfigurationWithSync* of the PCell;

- parameters within *ReconfigurationWithSync* of the NR PSCell, if configured;

- parameters within *MobilityControlInfoSCG* of the E-UTRA PSCell, if configured;

- *servingCellConfigCommonSIB*;

- *sl-L2RelayUE-Config*, if configured;

- *sl-L2RemoteUE-Config*, if configured;

- *uav-Config*, if configured;

NOTE 1c: *suspendConfig* is not stored as part of UE Inactive AS Context, except for the fields explicitly specified.

3> store any previously or subsequently received application layer measurement report containers for which no segment, or full message, has been submitted to lower layers for transmission;

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

4> initiate the procedure in 5.5b.1.2;

NOTE 2: NR sidelink communication/discovery related configurations and logged measurement configuration are not stored as UE Inactive AS Context, when UE enters RRC\_INACTIVE.

2> suspend all SRB(s) and DRB(s), except SRB0 and broadcast MRBs;

2> suspend all multicast MRB(s) associated with multicast session(s) not configured to receive in RRC\_INACTIVE;

2> indicate PDCP suspend to lower layers of all DRBs and multicast MRBs associated with multicast session(s) not configured to receive in RRC\_INACTIVE;

2> release Uu Relay RLC channel(s), if configured;

2> release PC5 Relay RLC channel(s), if configured;

2> release the SRAP entity, if configured;

NOTE 2a: A L2 U2N Relay UE may re-establish the SL-RLC0, SL-RLC1 and SRAP entity after release.

2> if SL indirect path is configured:

3> release cell identity and relay UE ID configured in *sl-IndirectPathAddChange*;

3> indicate upper layers to trigger PC5 unicast link release of the SL indirect path;

2> if N3C indirect path is configured:

3> release *n3c-IndirectPathAddChange*;

3> consider the non-3GPP connection is not used;

2> if the UE is acting as a N3C relay UE:

3> release *n3c-IndirectPathConfigRelay*;

3> consider the non-3GPP connection is not used;

2> if the *t380* is included:

3> start timer T380, with the timer value set to *t380*;

2> if the *RRCRelease* message is including the *waitTime*:

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

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

2> if T390 is running:

3> stop timer T390 for all access categories;

3> perform the actions as specified in 5.3.14.4;

2> indicate the suspension of the RRC connection to upper layers;

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

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

2> if the *suspendConfig* includes *resumeIndication*:

3> perform the actions as if the UE received *Paging* message with the *ue-Identity* included in the *PagingRecord* matching the UE's stored *fullI-RNTI*, as specified in clause 5.3.2.3;

2> if the *multicastConfigInactive* is configured:

3> if the multicast PTM configuration is provided for a multicast session for which the UE is not indicated to stop monitoring the G-RNTI and the UE selects the same cell as the one on which it received *RRCRelease*:

4> apply the multicast PTM configuration as specified in 5.10.3;

4> monitor the Multicast MCCH-RNTI as specified in 5.10.2;

1> else:

2> perform the actions upon going to RRC\_IDLE as specified in 5.3.11, with the release cause 'other'.

NOTE 3: Whether to release the PC5 unicast link is left to L2 U2N Remote UE's implementation.

NOTE 4: It is left to UE implementation whether to stop T430, if running, when going to RRC\_INACTIVE.

*NEXT CHANGE*

### 6.3.2 Radio resource control information elements

#### – *NCR-AperiodicFwdConfig*

The IE *NCR-AperiodicFwdConfig* is used to configure a list of aperiodic forwarding time resources for NCR-Fwd access link (see TS 38.212 [17], clause 7.3.1.3.9 and TS 38.213 [13], clause 20).

*NCR-AperiodicFwdConfig* information element

-- ASN1START

-- TAG-NCR-APERIODICFWDCONFIG-START

NCR-AperiodicFwdConfig-r18 ::= SEQUENCE {

 aperiodicFwdTimeRsrcToAddModList-r18 SEQUENCE (SIZE (1..maxNrofAperiodicFwdTimeResource-r18)) OF NCR-AperiodicFwdTimeResource-r18

 OPTIONAL, -- Need N

 aperiodicFwdTimeRsrcToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofAperiodicFwdTimeResource-r18)) OF NCR-AperiodicFwdTimeResourceId-r18

 OPTIONAL, -- Need N

 referenceSCS-r18 SubcarrierSpacing OPTIONAL, -- Need M

 aperiodicBeamFieldWidth-r18 INTEGER (1..6) OPTIONAL, -- Need M

 numberOfFields-r18 INTEGER (1..32) OPTIONAL, -- Need M

 ...

}

NCR-AperiodicFwdTimeResource-r18 ::= SEQUENCE {

 aperiodicFwdTimeRsrcId-r18 NCR-AperiodicFwdTimeResourceId-r18,

 slotOffsetAperiodic-r18 INTEGER (0..14),

 symbolOffset-r18 INTEGER (0..maxNrofSymbols-1),

 durationInSymbols-r18 INTEGER (1..28),

 ...

}

NCR-AperiodicFwdTimeResourceId-r18 ::= INTEGER (0..maxNrofAperiodicFwdTimeResource-1-r18)

-- TAG-NCR-APERIODICFWDCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *NCR-AperiodicFwdConfig* field descriptions |
| ***aperiodicBeamFieldWidth***Indicates the bitwidth of each beam index field in DCI carrying aperiodic beam indication. |
| ***aperiodicFwdTimeRsrcToAddModList***List of aperiodic forwarding time resources to be added or modified. |
| ***aperiodicFwdTimeRsrcToReleaseList***List of aperiodic forwarding time resources to be released. |
| ***durationInSymbols***Indicates the time duration in number of symbols. |
| ***numberOfFields***Indicates the number of time resource fields in DCI carrying aperiodic beam indication. |
| ***referenceSCS***Indicates the reference subcarrier spacing for all the time resources in the list. Only values *kHz15*, *kHz30*, *kHz60*, *kHz120* and *kHz240* are applicable. |
| ***slotOffsetAperiodic***Indicates the slot offset used to define the start slot of aperiodic time resource. |
| ***symbolOffset***Indicates the symbol offset in one slot. |

#### – *NCR-FwdConfig*

The IE *NCR-FwdConfig* contains configuration related to periodic, aperiodic and semi-persistent beam indication for NCR-Fwd access link.

*NCR-FwdConfig* information element

-- ASN1START

-- TAG-NCR-FWDCONFIG-START

NCR-FwdConfig-r18 ::= SEQUENCE {

 periodicFwdRsrcSetToAddModList-r18 SEQUENCE (SIZE (1..maxNrofPeriodicFwdResourceSet-r18)) OF NCR-PeriodicFwdResourceSet-r18

 OPTIONAL, -- Need N

 periodicFwdRsrcSetToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofPeriodicFwdResourceSet-r18)) OF NCR-PeriodicFwdResourceSetId-r18

 OPTIONAL, -- Need N

 aperiodicFwdConfig-r18 SetupRelease {NCR-AperiodicFwdConfig-r18} OPTIONAL, -- Need M

 semiPersistentFwdRsrcSetToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSemiPersistentFwdResourceSet-r18)) OF

 NCR-SemiPersistentFwdResourceSet-r18 OPTIONAL, -- Need N

 semiPersistentFwdRsrcSetToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofSemiPersistentFwdResourceSet-r18)) OF

 NCR-SemiPersistentFwdResourceSetId-r18 OPTIONAL, -- Need N

 ...

}

-- TAG-NCR-FWDCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *NCR-FwdConfig* field descriptions |
| ***aperiodicFwdConfig***Aperiodic time resource configuration for beam indication for NCR. The configuration includes a list of time domain resources that can be selected for aperiodic forwarding. |
| ***periodicFwdRsrcSetToAddModList***List of periodic forwarding resource configurations to be added or modified. |
| ***periodicFwdRsrcSetToReleaseList***List of periodic forwarding resource configurations to be released. |
| ***semiPersistentFwdRsrcSetToAddModList***List of semi-persistent forwarding resource configurations to be added or modified. |
| ***semiPersistentFwdRsrcSetToReleaseList***List of semi-persistent forwarding resource configurations to be released. |

#### – *NCR-PeriodicFwdResourceSet*

The IE *NCR-PeriodicFwdResourceSet* is used to configure a list of periodic forwarding resources for NCR-Fwd access link (see TS 38.213 [13], clause 20). Each periodic forwarding configuration includes a list of periodic forwarding resources, a common periodicity and a common reference SCS.

*NCR-PeriodicFwdResourceSet* information element

-- ASN1START

-- TAG-NCR-PERIODICFWDRESOURCESET-START

NCR-PeriodicFwdResourceSet-r18 ::= SEQUENCE {

 periodicFwdRsrcSetId-r18 NCR-PeriodicFwdResourceSetId-r18,

 periodicFwdRsrcToAddModList-r18 SEQUENCE (SIZE (1..maxNrofPeriodicFwdResource-r18)) OF NCR-PeriodicFwdResource-r18

 OPTIONAL, -- Need N

 periodicFwdRsrcToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofPeriodicFwdResource-r18)) OF NCR-PeriodicFwdResourceId-r18

 OPTIONAL, -- Need N

 referenceSCS-r18 SubcarrierSpacing OPTIONAL, -- Need M

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

 ...

}

NCR-PeriodicFwdResource-r18 ::= SEQUENCE {

 periodicFwdRsrcId-r18 NCR-PeriodicFwdResourceId-r18,

 beamIndex-r18 INTEGER (0..63),

 periodicTimeRsrc-r18 SEQUENCE {

 periodicityAndOffset-r18 NCR-PeriodicityAndOffset-r18,

 symbolOffset-r18 INTEGER (0..maxNrofSymbols-1),

 durationInSymbols-r18 INTEGER (1..112)

 },

 ...

}

NCR-PeriodicFwdResourceId-r18 ::= INTEGER (0..maxNrofPeriodicFwdResource-1-r18)

-- TAG-NCR-PERIODICFWDRESOURCESET-STOP

-- ASN1STOP

|  |
| --- |
| *NCR-PeriodicFwdResourceSet* field descriptions |
| ***beamIndex***Indicates the logical beam index for NCR-Fwd access link. NCR-Fwd is assumed to be ON over the indicated time domain resource if there is beam indication. |
| ***durationInSymbols***Indicates the time duration in number of symbols. |
| ***periodicFwdRsrcToAddModList***List of periodic forwarding resources to be added or modified. |
| ***periodicFwdRsrcToReleaseList***List of periodic forwarding resources to be released. |
| ***periodicityAndOffset***Indicates the periodicity and slot offset for the periodic forwarding resource. All the periodic forwarding resources configured within the same resource set should have the same periodicity. If the periodicity is expressed in [ms], the value range of slot offset is from 0 to Periodicity[ms] \* referenceSCS[kHz]/15 -1. |
| ***priorityFlag***Indicates the priority for the list of periodic forwarding resources, as specified in TS 38.213 [13], clause 20. |
| ***referenceSCS***Indicates the reference subcarrier spacing for all the time resources in the list. Only values *kHz15*, *kHz30*, *kHz60*, *kHz120* and *kHz240* are applicable. |
| ***symbolOffset***Indicates the symbol offset in one slot. |

– *NCR-SemiPersistentFwdResourceSet*

The IE *NCR-SemiPersistentFwdResourceSet* is used to configure a list of semi-persistent forwarding resources for NCR-Fwd access link (see TS 38.213 [13], clause 20). Each semi-persistent forwarding resource configuration includes a list of semi-persistent forwarding resources, a common periodicity and a common reference SCS.

*NCR-SemiPersistentFwdResourceSet* information element

-- ASN1START

-- TAG-NCR-SEMIPERSISTENTFWDRESOURCESET-START

NCR-SemiPersistentFwdResourceSet-r18 ::= SEQUENCE {

 semiPersistentFwdRsrcSetId-r18 NCR-SemiPersistentFwdResourceSetId-r18,

 semiPersistentFwdRsrcToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSemiPersistentFwdResource-r18)) OF

 NCR-SemiPersistentFwdResource-r18 OPTIONAL, -- Need N

 semiPersistentFwdRsrcToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofSemiPersistentFwdResource-r18)) OF

 NCR-SemiPersistentFwdResourceId-r18 OPTIONAL, -- Need N

 referenceSCS-r18 SubcarrierSpacing OPTIONAL, -- Need M

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

 ...

}

NCR-SemiPersistentFwdResource-r18 ::= SEQUENCE {

 semiPersistentFwdRsrcId-r18 NCR-SemiPersistentFwdResourceId-r18,

 beamIndex-r18 INTEGER (0..63),

 semiPersistentTimeRsrc-r18 SEQUENCE {

 periodicityAndOffset-r18 NCR-PeriodicityAndOffset-r18,

 symbolOffset-r18 INTEGER (0..maxNrofSymbols-1),

 durationInSymbols-r18 INTEGER (1..112)

 },

 ...

}

NCR-SemiPersistentFwdResourceId-r18 ::= INTEGER (0..maxNrofSemiPersistentFwdResource-1-r18)

-- TAG-NCR-SEMIPERSISTENTFWDRESOURCESET-STOP

-- ASN1STOP

|  |
| --- |
| *NCR-SemiPersistentFwdResourceSet* field descriptions |
| ***beamIndex***Indicates logical beam index for NCR-Fwd access link. NCR-Fwd is assumed to be ON over the indicated time domain resource if there is beam indication. |
| ***durationInSymbols***Indicates the time duration in number of symbols. |
| ***periodicityAndOffset***Indicates the periodicity and slot offset for the semi-persistent forwarding resource. All the semi-persistent forwarding resources configured within the same resource set should have the same periodicity. If the periodicity is expressed in [ms], the value range of slot offset is from 0 to Periodicity[ms] \* referenceSCS[kHz]/15 -1. |
| ***priorityFlag***Indicates the priority for the list of semi-persistent forwarding resources, as specified in TS 38.213 [13], clause 20. |
| ***referenceSCS***Indicates the reference subcarrier spacing for all the time resources in the list. Only values *kHz15*, *kHz30*, *kHz60*, *kHz120* and *kHz240* are applicable. |
| ***semiPersistentFwdRsrcToAddModList***List of semi-persistent forwarding resources to be added or modified. |
| ***semiPersistentFwdRsrcToReleaseList***List of semi-persistent forwarding resources to be released. |
| ***symbolOffset***Indicates the symbol offset in one slot. |