**3GPP TSG-RAN WG3 Meeting #125bisR3-245687**

**Hefei, China, 14th – 18th Oct, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **36.423** | **CR** | **1792** | **rev** | **1** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Clarification on indication of dormant cell re-activation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT,Nokia,Huawei,CMCC,ZTE,NEC,Samsung | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI18 | | | | |  | ***Date:*** | | | 2024-09-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In 36.423, there is no clear description on how eNB indicates the re-activation of dormant cell during eNB Configuration Update procedure.  Meanwhile,for EN-DC case,it is described that absence of *NR Deactivation Indication* IE indicates that the concerned cell is activated. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the similar descirption for *Deactivation Indication* IE to make it clear that  absence of this IE indicates that the concerned cell is activated.  Impact assessment towards the previous version of the specification (same release):  This CR has an isolated impact towards the previous version of the specification (same release).  This CR only has an impact on the Energy Saving.  This CR is backwards compatible. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | It remains unclear how a eNB indicates the reactivation of dormant cell. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.1.2.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<<<<<<<<<<<<<<<<<<<< Start of Change >>>>>>>>>>>>>>>>>>>>

### 8.3.5 eNB Configuration Update

#### 8.3.5.1 General

The purpose of the eNB Configuration Update procedure is to update application level configuration data needed for two eNBs to interoperate correctly over the X2 interface.

NOTE: Update of application level configuration data also applies between two eNBs in case the SN (i.e. the en-gNB) does not broadcast system information other than for radio frame timing and SFN, as specified in the TS 37.340 [32]. How to use this information when this option is used is not explicitly specified.

The procedure uses non UE-associated signalling.

#### 8.3.5.2 Successful Operation



Figure 8.3.5.2-1: eNB Configuration Update, successful operation

An eNB1 initiates the procedure by sending an ENB CONFIGURATION UPDATE message to a peer eNB2 . Such message shall include an appropriate set of up-to-date configuration data, including, but not limited to, the complete lists of added, modified and deleted served cells, that eNB1 has just taken into operational use.

Upon reception of an ENB CONFIGURATION UPDATE message, eNB2 shall update the information for eNB1 as follows:

**Update of Served Cell Information:**

- If *Served Cells To Add* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 shall add cell information according to the information in the *Served Cell Information* IE.

- If *Number of Antenna Ports* IE is contained in the *Served Cell Information* IE in the ENB CONFIGURATION UPDATE message, eNB2 may use this information according to TS 36.331 [9].

- If the *PRACH Configuration* IE is contained in the *Served Cell Information* IE in the ENB CONFIGURATION UPDATE message, the eNB receiving the IE may use this information for RACH optimisation.

- If *Served Cells To Modify* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 shall modify information of cell indicated by *Old ECGI* IE according to the information in the *Served Cell Information* IE.

- If *MBSFN Subframe Info* IE is contained in the *Served Cell Information* IE in the ENB CONFIGURATION UPDATE message, eNB2 may use this information according to TS 36.331 [9]. If a MBSFN subframe indicated in the *MBSFN Subframe Info* IE coincides with an ABS, the eNB2 shall consider that the subframe is designated as ABS by the sending eNB.

- If *BandwidthReducedSI* IE is contained in the *Served Cell Information* IE in the ENB CONFIGURATION UPDATE message, eNB2 may use this information to determine a suitable target in case of subsequent outgoing mobility involving BL UEs or UEs requiring CE.

When either served cell information or neighbour information of an existing served cell in eNB1 need to be updated, the whole list of neighbouring cells, if any, shall be contained in the *Neighbour Information* IE.

If the *Deactivation Indication* IE set to "deactivated" is contained in *Served Cells To Modify* IE, it indicates that the concerned cell is switched off to lower energy consumption.

The eNB2 shall overwrite the served cell information and the whole list of neighbour cell information for the affected served cell.

- If *Served Cells To Delete* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 shall delete information of cell indicated by *Old ECGI* IE.

- If *MBMS Service Area Identity List* IE is contained in the *Served Cell Information* IE in the ENB CONFIGURATION UPDATE message, the eNB receiving the IE may use it according to TS 36.300 [15].

When the MBMS Service Area Identities of a cell in eNB1 need to be updated, the whole list of MBMS Service Area Identities of the affected cell shall be contained in the *Served Cell Information* IE.

- If the *NPRACH Configuration* IE is contained in the *Served Cell Information* IE in the ENB CONFIGURATION UPDATE message, the eNB receiving the IE may use this information for RACH optimization.

**Update of GU Group Id List:**

- If *GU Group Id To Add List* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 shall add the GU Group Id to its GU Group Id List.

- If *GU Group Id To Delete List* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 shall remove the GU Group Id from its GU Group Id List.

If *Neighbour Information* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 may use this information to update its neighbour cell relations, or use it for other functions, like PCI selection. The *Neighbour Information* IE shall only include E-UTRAN cells that are direct neighbours of cells in the reporting eNB. A direct neighbour of one cell of a given eNB may be any cell belonging to an eNB that is a neighbour of that given eNB cell e.g. even if that cell has not been reported by a UE. The *Neighbour Information* IE may contain the *TAC* IE of the included cells. The receiving eNB may use *TAC* IE, as described in TS 36.300 [15].

If the *NR Neighbour Information* IE is contained in the ENB CONFIGURATION UPDATE message, eNB2 may use this information to update its neighbour cell relations or use it for other functions. The *NR Neighbour Information* IE shall only include NR cells capable of performing EN-DC with the corresponding served E-UTRA cell. The eNB receiving the *NR Neighbour Information* IE may use it according to TS 36.300 [15].

After successful update of requested information, eNB2 shall reply with the ENB CONFIGURATION UPDATE ACKNOWLEDGE message to inform the initiating eNB1 that the requested update of application data was performed successfully. In case the peer eNB2 receives an ENB CONFIGURATION UPDATE without any IE except for *Message Typ*eIE it shall reply with ENB CONFIGURATION UPDATE ACKNOWLEDGE message without performing any updates to the existing configuration.

The eNB1 may initiate a further eNB Configuration Update procedure only after a previous eNB Configuration Update procedure has been completed.

For each cell served by the initiating eNB1 the ENB CONFIGURATION UPDATE message may contain the *MultibandInfoList* IE and may also contain the *FreqBandIndicatorPriority* IE. The eNB receiving the *MultibandInfoList* IE shall, if supported, take this information into account when further deciding whether subsequent mobility actions between the source cell and the target cell may be performed, and use this IE and the *FreqBandIndicatorPriority* IE, if received, as specified in TS 36.331 [9].

If the *Coverage Modification List* IE is present, eNB2 may use the information in the *Cell Coverage State* IE to identify the cell deployment configuration enabled by eNB1 and for configuring the mobility towards the cell(s) indicated by the *ECGI* IE, as described in TS 36.300 [15]. If the *Cell Deployment Status Indicator* IE is present in the *Coverage Modification List* IE, the eNB2 shall consider the cell deployment configuration of the cell to be modified as the next planned configuration and shall remove any planned configuration stored for this cell. If the *Cell Deployment Status Indicator* IE is present and the *Cell Replacing Info* IE contains non-empty cell list, the eNB2 may use this list to avoid connection or re-establishment failures during the reconfiguration, e.g. consider the cells in the list as possible alternative handover targets. If the *Cell Deployment Status Indicator* IE is not present, the eNB2 shall consider the cell deployment configuration of cell to be modified as activated and replace any previous configuration for the cells indicated in the *Coverage Modification List* IE.

**Interaction with the eNB Configuration Update procedure:**

If an eNB2 which has not stored a *FreqBandIndicatorPriority* IE received from eNB1, but has signaled a *FreqBandIndicatorPriority* IE to eNB1 after the TNL association has become available, receives an ENB CONFIGURATION UPDATE message from eNB1 containing the *FreqBandIndicatorPriority* IE, the eNB2 shall initiate the eNB Configuration Update procedure towards eNB1 including the *FreqBandIndicatorPriority* IE.

The receiving eNB may forward the *Intended TDD DL-UL Configuration NR* IE received in the *NR Neighbour Information* IE in the ENB CONFIGURATION UPDATE message to neighbouring eNBs by triggering the eNB Configuration Update procedure.

**Interaction with the EN-DC Configuration Update procedure:**

The receiving eNB may forward the *Intended TDD DL-UL Configuration NR* IE received in the *NR Neighbour Information* IE in the ENB CONFIGURATION UPDATE message to neighbouring en-gNBs by triggering the EN-DC Configuration Update procedure.

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.1.2.8 ENB CONFIGURATION UPDATE

This message is sent by an eNB to a peer eNB to transfer updated information for a TNL association.

Direction: eNB1 → eNB2.

This message is sent by an eNB to a peer eNB to transfer updated information for a TNL association.

Direction: eNB1 → eNB2.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| **Served Cells To Add** |  | *0 .. <maxCellineNB>* |  | Complete list of added cells served by the eNB | GLOBAL | reject |
| >Served Cell Information | M |  | 9.2.8 |  | – |  |
| **>Neighbour Information** |  | *0 .. <maxnoofNeighbours>* |  |  | – |  |
| >>ECGI | M |  | ECGI  9.2.14 | E-UTRAN Cell Global Identifier of the neighbour cell | – |  |
| >>PCI | M |  | INTEGER (0..503, …) | Physical Cell Identifier of the neighbour cell | – |  |
| >>EARFCN | M |  | 9.2.26 | DL EARFCN for FDD or EARFCN for TDD | – |  |
| >>TAC | O |  | OCTET STRING (2) | Tracking Area Code | YES | ignore |
| >>EARFCN Extension | O |  | 9.2.65 | DL EARFCN for FDD or EARFCN for TDD. If this IE is present, the value signalled in the *EARFCN* IE is ignored. | YES | reject |
| >NR Neighbour Information | O |  | 9.2.98 | NR neighbour, capable of performing EN-DC with the served E-UTRA cell | YES | ignore |
| **Served Cells To Modify** |  | *0 .. <maxCellineNB>* |  | Complete list of modified cells served by the eNB | GLOBAL | reject |
| >Old ECGI | M |  | ECGI  9.2.14 | Old E-UTRAN Cell Global Identifier | - |  |
| >Served Cell Information | M |  | 9.2.8 |  | – |  |
| **>Neighbour Information** |  | *0 .. <maxnoofNeighbours>* |  |  | – |  |
| >>ECGI | M |  | ECGI  9.2.14 | E-UTRAN Cell Global Identifier of the neighbour cell | – |  |
| >>PCI | M |  | INTEGER (0..503, …) | Physical Cell Identifier of the neighbour cell | – |  |
| >>EARFCN | M |  | 9.2.26 | DL EARFCN for FDD or EARFCN for TDD | – |  |
| >>TAC | O |  | OCTET STRING (2) | Tracking Area Code | YES | ignore |
| >>EARFCN Extension | O |  | 9.2.65 | DL EARFCN for FDD or EARFCN for TDD. If this IE is present, the value signalled in the *EARFCN* IE is ignored. | YES | reject |
| >NR Neighbour Information | O |  | 9.2.98 | NR neighbour, capable of performing EN-DC with the served E-UTRA cell | YES | ignore |
| >Deactivation Indication | O |  | ENUMERATED(deactivated,  …) | Indicates that the concerned cell is switched off for energy saving reasons.  If this IE is not included, indicates that the concerned cell is activated. | YES | ignore |
| **Served Cells To Delete** |  | *0 .. <maxCellineNB>* |  | Complete list of deleted cells served by the eNB | GLOBAL | reject |
| >Old ECGI | M |  | ECGI  9.2.14 | Old E-UTRAN Cell Global Identifier of the cell to be deleted | – |  |
| **GU Group Id To Add List** |  | *0 .. <maxPools>* |  |  | GLOBAL | reject |
| >GU Group Id | M |  | 9.2.20 |  | – |  |
| **GU Group Id To Delete List** |  | *0 .. <maxPools>* |  |  | GLOBAL | reject |
| >GU Group Id | M |  | 9.2.20 |  | – |  |
| **Coverage Modification List** |  | *0 .. <maxCellineNB>* |  | List of cells with modified coverage | GLOBAL | reject |
| >ECGI | M |  | ECGI  9.2.14 | E-UTRAN Cell Global Identifier of the cell to be modified | – |  |
| >Cell Coverage State | M |  | INTEGER (0..15, …) | Value '0' indicates that the cell is inactive. Other values Indicates that the cell is active and also indicates the coverage configuration of the concerned cell | – |  |
| >Cell Deployment Status Indicator | O |  | ENUMERATED(pre-change-notification, ...) | Indicates the Cell Coverage State is planned to be used at the next reconfiguration | – |  |
| **>Cell Replacing Info** | C-ifCellDeploymentStatusIndicatorPresent |  |  |  | – |  |
| **>>Replacing Cells** |  | *0 .. <maxCellineNB>* |  |  | – |  |
| >>>ECGI |  |  | ECGI  9.2.14 | E-UTRAN Cell Global Identifier of a cell that may replace all or part of the coverage of the cell to be modified | – |  |

<<<<<<<<<<<<<<<<<<<< Last Change >>>>>>>>>>>>>>>>>>>