**3GPP TSG-RAN WG2 Meeting #113e *R2-2101996***

**Electronic Meeting, Jan 25 - Feb 5, 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.331** | **CR** | **2392** | **rev** | **1** | **Current version:** | **16.3.1** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Inability to comply with conditional reconfiguration | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_Mob\_enh-Core | | | | |  | ***Date:*** | | | 2021-02-04 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In case of conditional reconfiguration in NR, the UE may perform the compliance check either at reception of the configuration or when the conditions are fulfilled (at execution). This is also captured in a note in 5.3.5.8.2:  NOTE 3: It is up to UE implementation whether the compliance check for an *RRCReconfiguration* received as part of *ConditionalReconfiguration* is performed upon the reception of the message or upon CHO and CPC execution (when the message is required to be applied).  In case the compliance check fails it is however specified that the UE shall continue using the configuration it had before the reception of the message. This is correct behaviour in case the UE performs the compliance check of the *RRCReconfiguration* message directly upon reception, but not if the compliance check is only done upon CHO or CPC execution.  In case the compliance check is done at CHO or CPC execution, the UE would then need to return to a configuration that it might have had a long time ago and there may have been some changes to the (source) PCell configuration between the reception of the conditional reconfiguration and the corresponding execution. In case of multiple conditional reconfiguration the UE may then also need to store multiple different old configurations (possibly one per conditional reconfiguration).  In case of a failed compliance check at CHO or CPC execution, the network would not know that the conditions have been fulfilled. It would then not know that the UE switches to the configuration it had prior to the configuration. If there then have been any changes to the configurations while the UE had the conditional configuration, the UE and the network would then end up with different configurations. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | It is specified in 5.3.5.8.2 that in case the UE is unable to comply with the the configuration in an *RRCReconfiguration* message that is received as part of a conditional reconfiguration, then it continues using the configuration it had before the attempt to apply the message.  **Impact Analysis**  Impacted 5G architecture options: NR SA, NR-DC  Impacted functionality:  Conditional reconfiguration (CHO and CPC).  Inter-operability:  1. If the network is implemented according to the CR and the UE is not, the existing problems still remain and there may be a misalignment between the configurations in the UE and in the network.  2. If the UE is implemented according to the CR and the network is not, no interoperability issues are foreseen. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The UE may return to an old configuration at failed compliance check of a *RRCReconfiguration* message included in a conditional reconfiguration, leading to a UE/network misalignment regarding used configuration. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.5.8.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

Beginning of changes

##### 5.3.5.8.2 Inability to comply with *RRCReconfiguration*

The UE shall:

1> if the UE is in (NG)EN-DC:

2> if the UE is unable to comply with (part of) the configuration included in the *RRCReconfiguration* message received over SRB3;

3> continue using the configuration used prior to the reception of *RRCReconfiguration* message;

3> if MCG transmission is not suspended:

4> initiate the SCG failure information procedure as specified in subclause 5.7.3 to report SCG reconfiguration error, upon which the connection reconfiguration procedure ends;

3> else:

4> initiate the connection re-establishment procedure as specified in TS 36.331 [10], clause 5.3.7, upon which the connection reconfiguration procedure ends;

2> else, if the UE is unable to comply with (part of) the configuration included in the *RRCReconfiguration* message received over SRB1;

3> continue using the configuration used prior to the reception of *RRCReconfiguration* message;

3> initiate the connection re-establishment procedure as specified in TS 36.331 [10], clause 5.3.7, upon which the connection reconfiguration procedure ends.

1> else if *RRCReconfiguration* is received via NR (i.e., NR standalone, NE-DC, or NR-DC):

2> if the UE is unable to comply with (part of) the configuration included in the *RRCReconfiguration* message received over SRB3;

NOTE 0: This case does not apply in NE-DC.

3> if the *RRCReconfiguration* message was received as part of *ConditionalReconfiguration* and if the compliance check was performed upon conditional reconfiguration execution:

4> continue using the configuration used prior to the attempt to apply the message;

3> else:

4> continue using the configuration used prior to the reception of *RRCReconfiguration* message;

3> if MCG transmission is not suspended:

4> initiate the SCG failure information procedure as specified in subclause 5.7.3 to report SCG reconfiguration error, upon which the connection reconfiguration procedure ends;

3> else:

4> initiate the connection re-establishment procedure as specified in clause 5.3.7, upon which the connection reconfiguration procedure ends;

2> else if the UE is unable to comply with (part of) the configuration included in the *RRCReconfiguration* message received over the SRB1 or if the upper layers indicate that the *nas-Container* is invalid:

NOTE 0a: The compliance also covers the SCG configuration carried within octet strings e.g. field *mrdc-SecondaryCellGroupConfig*. I.e. the failure behaviour defined also applies in case the UE cannot comply with the embedded SCG configuration or with the combination of (parts of) the MCG and SCG configurations.

NOTE 0b: The compliance also covers the E-UTRA sidelink configuration carried within an octet string, e.g. field *sl-ConfigDedicatedEUTRA*. I.e. the failure behaviour defined also applies in case the UE cannot comply with the embedded E-UTRA sidelink configuration.

3> if the *RRCReconfiguration* message was received as part of *ConditionalReconfiguration*:

4> continue using the configuration used prior to the attempt to apply the message;

3> else:

4> continue using the configuration used prior to the reception of *RRCReconfiguration* message;

3> if AS security has not been activated:

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

3> else if AS security has been activated but SRB2 and at least one DRB or, for IAB, SRB2,have not been setup:

4> perform the actions upon going to RRC\_IDLE as specified in 5.3.11, with release cause 'RRC connection failure';

3> else:

4> initiate the connection re-establishment procedure as specified in 5.3.7, upon which the reconfiguration procedure ends;

1> else if *RRCReconfiguration* is received via other RAT (Handover to NR failure):

2> if the UE is unable to comply with any part of the configuration included in the *RRCReconfiguration* message or if the upper layers indicate that the *nas-Container* is invalid:

3> perform the actions defined for this failure case as defined in the specifications applicable for the other RAT.

NOTE 1: The UE may apply above failure handling also in case the *RRCReconfiguration* message causes a protocol error for which the generic error handling as defined in clause 10 specifies that the UE shall ignore the message.

NOTE 2: If the UE is unable to comply with part of the configuration, it does not apply any part of the configuration, i.e. there is no partial success/failure.

NOTE 3: It is up to UE implementation whether the compliance check for an *RRCReconfiguration* received as part of *ConditionalReconfiguration* is performed upon the reception of the message or upon CHO and CPC execution (when the message is required to be applied).

End of changes