**3GPP TSG-CT WG1 Meeting #137-eC1-225069**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **4639** | **rev** |  | **Current version:** | **1** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | Setting RRC establishment cause value when relay UE has its own service |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***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 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)* |
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| ***Reason for change:*** | The RRC establishment cause is provided by NAS layer in general to indicate the cause of establishing the RRC connection. In relaying case, when relay UE is triggered by remote UE to establish RRC connection, it was agreed in RAN2#118-e that AS layer can directly set RRC establishment cause when the cause value from remote UE is *emergency, mps-PriorityAccess, or mcs-PriorityAccess,* and for the other cases are up to UE implementation:*NOTE 2: In case the L2 U2N Relay UE initiates RRC connection establishment triggered by reception of message from a L2 U2N Remote UE via SL-RLC0 or SL-RLC1 as specified in 5.3.3.1a, the L2 U2N Relay UE sets the establishmentCause by implementation, but it can only set the emergency, mps-PriorityAccess, or mcs-PriorityAccess as establishmentCause if the same cause value is in the message received from the L2 U2N Remote UE via SL-RLC0.*However, it is not clear what cause value should be provided by the NAS layer when for the case when the access attempt is simultaneously triggered by both the own service of the 5G ProSe layer-2 UE-to-network relay UE in 5GMM-IDLE mode and the 5G ProSe layer-2 remote UE. It is proposed to clarify the principle that in case of the UE is acting as a 5G ProSe layer-2 UE-to-network relay UE, it is possible for the lower layer to decide an applicable RRC establishment cause according to the request from the 5G ProSe layer-2 remote UE as specified in 3GPP TS 38.331 [30]. |
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| ***Summary of change:*** | Clarify the principle that in case of the UE is acting as a 5G ProSe layer-2 UE-to-network relay UE, it is possible for the lower layer to decide an applicable RRC establishment cause according to the request from the 5G ProSe layer-2 remote UE as specified in 3GPP TS 38.331 [30]. |
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| ***Consequences if not approved:*** | Not appropriate RRC cause value for 5G ProSe layer-2 remote UE may be set. |
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| ***Clauses affected:*** | 4.5.6 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* First Change \* \* \* \*

### 4.5.6 Mapping between access categories/access identities and RRC establishment cause

When 5GMM requests the establishment of a NAS-signalling connection, the RRC establishment cause used by the UE shall be selected according to one or more access identities (see subclauses 4.5.2 and 4.5.2A) and the determined access category by checking the rules specified in table 4.5.6.1 and table 4.5.6.2. If the access attempt matches more than one rule, the RRC establishment cause of the lowest rule number shall be used. If the determined access category is an operator-defined access category, then the RRC establishment cause used by the UE shall be selected according to table 4.5.6.1 and table 4.5.6.2 based on one or more access identities (see subclauses 4.5.2 and 4.5.2A) and the standardized access category determined for the operator-defined access category as described in subclause 4.5.3.

NOTE 1: Following an RRC release with redirection, the lower layers can set the RRC establishment cause to "mps‑PriorityAccess" in the case of redirection to an NR cell connected to 5GCN (see 3GPP TS 38.331 [30]) or to "highPriorityAccess" in the case of redirection to an E‑UTRA cell connected to 5GCN (see 3GPP TS 36.331 [25A]), if the network indicates to the UE during RRC connection release with redirection that the UE has an active MPS session.

NOTE 2: In case of the UE is acting as a 5G ProSe layer-2 UE-to-network relay UE, the RRC establishment cause is selected according to table 4.5.6.1 and table 4.5.6.2. It is possible for the lower layer to decide an applicable RRC establishment cause according to the request from the 5G ProSe layer-2 remote UE as specified in 3GPP TS 38.331 [30].

Table 4.5.6.1: Mapping table for access identities/access categories and RRC establishment cause when establishing N1 NAS signalling connection via NR connected to 5GCN

|  |  |  |  |
| --- | --- | --- | --- |
| Rule # | Access identities | Access categories | RRC establishment cause is set to |
| 1 | 1 | Any category | mps-PriorityAccess |
| 2 | 2 | Any category | mcs-PriorityAccess |
| 3 | 11, 15 | Any category | highPriorityAccess |
| 4 | 12,13,14, | Any category | highPriorityAccess |
| 5 | 0 | 0 (= MT\_acc) | mt-Access |
| 1 (= delay tolerant) | Not applicable (NOTE 1) |
| 2 (= emergency) | emergency |
| 3 (= MO\_sig) | mo-Signalling |
| 4 (= MO MMTel voice) | mo-VoiceCall |
| 5 (= MO MMTel video) | mo-VideoCall |
| 6 (= MO SMS and SMSoIP) | mo-SMS |
| 7 (= MO\_data) | mo-Data |
| 9 (= MO IMS registration related signalling) | mo-Data |
| NOTE 1: A UE using access category 1 for the access barring check will determine a second access category in the range 3 to 7 that is to be used for determination of the RRC establishment cause. See subclause 4.5.2, table 4.5.2.2, NOTE 6.NOTE 2: See subclause 4.5.2, table 4.5.2.1 for use of the access identities of 0, 1, 2, and 11-15. |

Table 4.5.6.2: Mapping table for access identities/access categories and RRC establishment cause when establishing N1 NAS signalling connection via E-UTRA connected to 5GCN

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| --- | --- | --- | --- |
| Rule # | Access identities | Access categories | RRC establishment cause is set to |
| 1 | 1 | Any category | highPriorityAccess |
| 2 | 2 | Any category | highPriorityAccess |
| 3 | 11, 15 | Any category | highPriorityAccess |
| 4 | 12,13,14, | Any category | highPriorityAccess |
| 5 | 0 | 0 (= MT\_acc) | mt-Access |
| 1 (= delay tolerant) | Not applicable (NOTE 1) |
| 2 (= emergency) | emergency |
| 3 (= MO\_sig) | mo-Signalling |
| 4 (= MO MMTel voice) | mo-VoiceCall |
| 5 (= MO MMTel video) | mo-VoiceCall |
| 6 (= MO SMS and SMSoIP) | mo-Data |
| 7 (= MO\_data) | mo-Data |
| 9 (= MO IMS registration related signalling) | mo-Data |
| 10 (= MO exception data) | mo-ExceptionData (NOTE 3) |
| NOTE 1: A UE using access category 1 for the access barring check will determine a second access category in the range 3 to 7 that is to be used for determination of the RRC establishment cause. See subclause 4.5.2, table 4.5.2.2, NOTE 6.NOTE 2: See subclause 4.5.2, table 4.5.2.1 for use of the access identities of 0, 1, 2, and 11-15.NOTE 3: This applies to the UE in NB-N1 mode. |

\* \* \* End of Changes \* \* \* \*