**3GPP TSG-CT WG1 Meeting #130-eC1-21xxxx**

**Electronic meeting, 20-28 May 2021 (was C1-213284 )**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **3270** | **rev** | **1** | **Current version:** | **17.2.1** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | RAT disable when re-attempts are not allowed | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Apple | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc17 | | | | |  | ***Date:*** | | | 2021-05-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 the current specification during congestion and overload conditions there is provision for NW to provide "Re-attempt indicator” in SM messages which will indicate if the UE is allowed to attempt the same procedure after reselecting other RATs or equivalent PLMNs. Currently, this information is not used during the RAT disable procedure.  Scenario:   1. UE is voice centric and registered on 5G PLMN1 with PLMN2 as equivalent PLMN. 2. During PDU establishment for IMS DNN, UE receives PDU SESSION ESTABLISHMENT REJECT with RATC = "UE is \*not\* allowed to re-attempt the procedure in S1 mode". 3. Due to IMS voice not available, UE disabled N1 and reselects to S1. 4. But due to Re-attempt indicator RATC = "UE is \*not\* allowed to re-attempt the procedure in S1 mode, UE will not be allowed to establish a PDN connection for IMS in 4G. I.e. the UE in S1 mode can assume that the condition "UE is not be available for voice calls in the IMS" is fulfilled and immediately proceed as specified in TS 24.301, subclause 4.3.2.4. Dependent on the UE mode of operation, the voice domain preference for E-UTRAN and other UE configuration parameters this can result in an immediate disabling of S1 mode.   S Otherwise, e.g. if the UE waits, until after an implementation dependent time the upper layers determine that IMS voice is not available, this can delay the UE becoming available for voice calls and and give a bad user experience. | | | | | | | | |
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| ***Summary of change:*** | | After checking “IMS voice available” in N1 mode, if UE determines that IMS voice is not available also for S1 mode, UE in S1 mode should take actions related to the change of IMS voice availability as specified in 3GPP TS 24.301 subclause 4.3.2.4. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unnecessary signalling will be done by UE in S1 mode even when network has already indicated that PDN for IMS DNN cannot be established. | | | | | | | | |
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| ***Clauses affected:*** | |  | | | | | | | | |
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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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\*\*\* First change \*\*\*\*\*

### 4.3.4 Change or determination of IMS voice availability

If the UE operates in single-registration mode, whenever the IMS voice availability is determined or changes, the UE shall execute procedures according to table 4.3.4.1:

Table 4.3.4.1: Change of IMS voice availability for a UE in single-registration mode

|  |  |
| --- | --- |
| Change of IMS voice available condition | Procedure to execute |
| "IMS voice not available" over 3GPP access only and the UE's usage setting is "voice centric" | Disable the N1 mode capability for 3GPP access, if the UE is only registered over 3GPP access (see subclause 4.9.2). (NOTE 2) |
| "IMS voice not available" over non-3GPP access only and the UE's usage setting is "voice centric" | Disable the N1 mode capability for non-3GPP access (see subclause 4.9.3), if the UE is only registered over non-3GPP access. (NOTE 2) |
| "IMS voice not available" over both 3GPP access and non-3GPP access, and the UE's usage setting is "voice centric" | Disable the N1 mode capability for 3GPP access (see subclause 4.9.2) and non-3GPP access (see subclause 4.9.3), if the UE is registered over both 3GPP access and non-3GPP access.  Disable the N1 mode capability for 3GPP access (see subclause 4.9.2), if the UE is only registered over 3GPP access  Disable the N1 mode capability for non-3GPP access (see subclause 4.9.3), if the UE is only registered over non-3GPP access.  (NOTE 1, NOTE 2) |
| NOTE 1: If the UE is registered over 3GPP access and has a persistent PDU session, then the UE waits until the radio bearer associated with the persistent PDU session has been released.  NOTE 2: If the UE determines "IMS voice not available" upon receipt of a 5GS session management reject message including a back-off timer value, and the re-attempt indicator indicates that the UE is not allowed to re-attempt the procedure in S1 mode, the UE in S1 mode proceeds as specified in 3GPP TS 24.301 [15], subclause 4.3.2.4, Change or determination of IMS registration status. | |

\*\*\*\*\* End of changes \*\*\*\*\*