**3GPP TSG-CT WG1 Meeting #141eC1-232408**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.301** | **CR** | **3885** | **rev** |  | **Current version:** | **18.2.1** |  |
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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:*** | N1 disable when re-attempts are not allowed | | | | | | | | | |
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| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SAES18 | | | | |  | ***Date:*** | | | 2023-03-30 |
|  |  | | | |  | |  | | |  |
| ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
|  | | As specified, the UE may determine IMS voice not available upon receipt of a 5GS session management reject message, and may also include re-attempts IE which indicates the S1 mode is not allowed. In this case, upon interchange from N1 to S1 mode, the UE shall proceed as specified in TS 24.301.  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 then, upon inter-system change from N1 mode to S1 mode, the UE proceeds as specified in 3GPP TS 24.301 [15], subclause 4.3.2.4, Change or determination of IMS registration status.  For the same reason, when the UE is in S1 mode, may also determine IMS voice not available upon receipt of a ESM session management reject message, and include re-attempts IE which indicates the N1 mode is not allowed. In this case, upon interchange from S1 mode to N1 mode, the UE shall behave the same way as above.  Hence, it is proposed:  If the UE determines UE is not available for voice calls in the IMS indication upon receipt of a EPS 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 N1 mode then, upon inter-system change from S1 mode to N1 mode, the UE proceeds as specified in 3GPP TS 24.501 [15], subclause 4.3.4, Change or determination of IMS voice availability. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | If the UE determines UE is not available for voice calls in the IMS indication upon receipt of a EPS 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 N1 mode then, upon inter-system change from S1 mode to N1 mode, the UE proceeds as specified in 3GPP TS 24.501 [15], subclause 4.3.4, Change or determination of IMS voice availability. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unnecessary signalling will be done by UE in N1 mode even when network has already indicated that PDU session for IMS DNN cannot be established. | | | | | | | | |
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| ***Clauses affected:*** | | 4.3.2.4 | | | | | | | | |
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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 \*\*\*\*\*

#### 4.3.2.4 Change or determination of IMS registration status

Whenever the UE's availability for voice calls in the IMS is determined or changes (e.g. whenever the IMS registration status is determined or changes), the UE dependent on its mode of operation shall execute procedures according to table 4.3.2.4.1, 4.3.2.4.2 or 4.3.2.4.3:

a) The UE is operating in PS mode 1

Table 4.3.2.4.1: Change of IMS registration status for a UE in PS mode 1

|  |  |
| --- | --- |
| Change of IMS registration status | Procedure to execute |
| UE is not available for voice calls in the IMS indication and voice domain preference for E-UTRAN is "IMS PS voice preferred, CS Voice as secondary" | Transit to CS/PS mode 1. Combined tracking area update with IMSI attach |
| UE is not available for voice calls in the IMS indication, SMS configuration is set to prefer to use SMS over IP networks, and voice domain preference for E-UTRAN is "IMS PS voice only" | Disable the E-UTRA capability (see clause 4.5) (NOTE 2) |
| UE is not available for voice calls in the IMS indication, SMS configuration is set to prefer to use SMS over IP networks, and UE is not CS voice capable | May disable the E-UTRA capability (see clause 4.5) (NOTE 2) |

NOTE 1: If the UE in PS mode 1 transits to CS/PS mode 1 according to table 4.3.2.4.1, then the UE can return to PS mode 1 when the upper layer indicates the status of being available for voice over PS.

NOTE 2: If the UE determines UE is not available for voice calls in the IMS indication upon receipt of a EPS 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 N1 mode then, upon inter-system change from S1 mode to N1 mode, the UE proceeds as specified in 3GPP TS 24.501 [15], subclause 4.3.4, Change or determination of IMS voice availability.

b) The UE is operating in PS mode 2

Table 4.3.2.4.2: Change of IMS registration status for a UE in PS mode 2

|  |  |
| --- | --- |
| Change of IMS registration status | Procedure to execute |
| UE is not available for voice calls in the IMS indication and voice domain preference for E-UTRAN is "IMS PS voice preferred, CS Voice as secondary" | Transit to CS/PS mode 2. Combined tracking area update with IMSI attach |
| Unsuccessful IMS registration indication from upper layers, SMS configuration is set to prefer to use SMS over IP networks, and voice domain preference for E-UTRAN is "IMS PS voice only" | Transit to CS/PS mode 2. Combined tracking area update with "SMS only" |
| Unsuccessful IMS registration indication from upper layers, SMS configuration is set to prefer to use SMS over IP networks, and UE is not CS voice capable | Transit to CS/PS mode 2. Combined tracking area update with "SMS only" |

NOTE 3: If the UE in PS mode 2 transits to CS/PS mode 2 according to table 4.3.2.4.2, then the UE can return to PS mode 2 when the upper layer indicates the status of being available for voice over PS.

c) The UE is operating in CS/PS mode 1

Table 4.3.2.4.3: Change of IMS registration status for a UE in CS/PS mode 1

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| --- | --- |
| Change of IMS registration status | Procedure to execute |
| UE is not available for voice calls in the IMS indication, and any of: - "CS fallback is not available" (NOTE 1); or - the UE received a "CS fallback not preferred" or "SMS only" indication during the last successful combined attach or combined tracking area updating procedure | Disable the E-UTRA capability (see clause 4.5) (NOTE 4) |
| UE is not available for voice calls in the IMS indication, UE is in state EMM-REGISTERED.ATTEMPTING-TO-UPDATE-MM and timer T3402 is running | May disable the E-UTRA capability (see clause 4.5) (NOTE 4) |
| NOTE 1: "CS fallback is not available" includes EMM causes #16, #17, and #18 | |

NOTE 4: If the UE determines UE is not available for voice calls over 3GPP access in the IMS indication upon receipt of a EPS 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 N1 mode then, upon inter-system change from S1 mode to N1 mode, the UE proceeds as specified in 3GPP TS 24.501 [15], subclause 4.3.4, Change or determination of IMS voice availability.

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