**3GPP TSG-CT WG1 Meeting #130-eC1-213086**

**Electronic meeting, 20-28 May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.229** | **CR** | **6523** | **rev** | **-** | **Current version:** | **17.2.0** |  |
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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:***  | Correction on UE SDP handling for EPS Fallback |
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| ***Source to WG:*** | China Mobile |
| ***Source to TSG:*** | C1 |
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| ***Work item code:*** | IMSProtoc17 |  | ***Date:*** | 2021-05-12 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | During the deployment of EPS Fallback or RAT Fallback, an issue of UE SDP handling for EPS Fallback is identified. EPS Fallback procedure involves simultaneously IMS setup procedure and inter-RAT handover procedure, but if the two procedures is not able to synchronize well, the EPS Fallback call may be put in situation that only one direction of voice stream is available, which has serious impact on user experience.The procedure of the issue is as follows:1. When a terminating call is targeting an EPS Fallback UE, after the UE reply 183 with first SDP answer, P-CSCF initiates PCC procedure to establish voice bearer in 5GS, which further triggers fallback preparation of the UE.
2. The IMS procedure continues. The originating UE sends UPDATE message with updated SDP offer, which is received by the terminating UE still in fallback preparation phase and still camping in 5G NR.
3. Since the bearer establishement is rejected due to fallback procedure and the terminating UE has no voice bearer being established, when the terminating UE responds the UPDATE message, the SDP in 200 OK response includes the SDP answer which indicates the media component for voice from is not available, e.g. with line “a=curr: qos local none”.
4. After the UE fallback to e-UTRA, it does not initiate another SDP negotiation to update its media bearer status. The ressources for media component of this voice call is seen as unabailable by the network.
5. The voice call establishes successfully with no media component available.

It is not clear in current specification how the UE handle such case, therefore it is proposed that when the UE sends 180 response after EPS fallback procedure, the network shall take it as the implicit indication that the resources for the voice call is available and sufficient.  |
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| ***Summary of change:*** | When the UE sends 180 response, the P-CSCF shall take it as the implicit indication that the resources for the voice call is available and sufficient. |
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| ***Consequences if not approved:*** | EPS fallback voice call may be set up with no media component available in terminating UE, which has serious impact on voice service user experience. |
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| ***Clauses affected:*** | U.2A.2 |
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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 \*\*\*

U.2A.2 Handling of SDP when originating UE has resources available and IP-CAN performs network-initiated resource reservation for terminating UE

If the UE receives an SDP offer where the SDP offer includes all media streams for which the originating side indicated its local preconditions as met, if the precondition mechanism is supported by the terminating UE and the IP-CAN performs network-initiated resource reservation for the terminating UE and the resources are not available or sufficient for the received offer, the terminating UE shall indicate its local preconditions and provide the SDP answer to the originating side without waiting for resource reservation.

When the 180 (Ringing) response from the terminating UE is further received, the P-CSCFs for originating UE and for terminating UE shall take 180 (Ringing) response as an implicit indication that the resources of terminating side becomes available and sufficient and continue the session establishment procedure. \*\*\* End of changes \*\*\*