**3GPP TSG-CT WG6 Meeting #89-Bis *C6-180412***

**Sophia Antipolis, France, 10th July – 13th July 2018**

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| *CR-Form-v11.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **31.111** | **CR** | **0695** | **rev** | **1** | **Current version:** | **15.3.1** |  |
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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 | **X** | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Fix implementation error for USIM Call Control procedure and allow updating only the operator specific ePCOs. | | | | | | | | | |
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| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | C6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GS\_CT-Ph1 | | | | |  | | ***Date:*** | | 2018-07-13 |
|  |  | | | |  | | |  | |  |
| ***Category:*** | **B** |  | | | | | | ***Release:*** | | Rel-15 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | Allowing USIM to update all ePCO fields in PDU session establishment procedure may lead to unspecified UE behavior.  Also, C6-180274 was not implemented completely as agreed. So, brought those non-implemented changes back as part of this CR. | | | | | | | | |
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| ***Summary of change:*** | | * C6-180274 was not implemented completely as agreed. So, brought those non-implemented changes back as part of this CR. * Allow USIM to update only the operator specific fields in the ePCO for PDU session establishment. | | | | | | | | |
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| ***Consequences if not approved:*** | | Call Control for USIM is not specified completely.  Allowing USIM to update ePCO fields in PDU session establishment procedure may lead to unspecified UE behavior. | | | | | | | | |
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| ***Clauses affected:*** | | 7.3.1.6, 7.3.1.x (new) | | | | | | | | |
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|  | | **Y** | **N** |  | | |  | | | |
| ***Other specs*** | |  | **X** | Other core specifications | | |  | | | |
| ***affected:*** | |  | **x** | Test specifications | | |  | | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | |  | | | |
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| ***Other comments:*** | |  | | | | | | | | |

#### 7.3.1.6 Structure of ENVELOPE (CALL CONTROL)

Direction: ME to UICC.

The command header is specified in TS 31.101 [13].

Command parameters/data.

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- Device identities: the ME shall set the device identities to:

source: ME;

destination: UICC.

- Address or SS string or USSD string or PDP context activation parameters or EPS PDN connection activation parameters or IMS URI: only one data object shall be sent to the UICC:

for a call set-up, the address data object is used and holds the Called Party Number, as defined in TS 24.008 [9], to which the ME is proposing setting up the call;

for a supplementary service, the SS string data object is used and holds the corresponding supplementary service;

for a USSD operation, the USSD string data object is used and holds the corresponding USSD control string;

USIM Applications and Mes should take into account that early implementations of USAT use the SS string data object for coding of USSD control strings (instead of the USSD string data object). This behaviour is only possible for USSD control strings consisting of digits (0-9,\*,#). The UICC can identify Mes having this early implementation by evaluating the indication "USSD string data object supported in Call Control" in the TERMINAL PROFILE. The ME can identify USIMs having this early implementation by evaluating the indication "USSD string data object supported in Call Control" in the USIM Service Table.

For a PDP context activation, the Activate PDP context request parameters are used, as defined in TS 24.008 [9]. Except for the following parameters:

- Requested QoS;

- Access Point Name; and

- Protocol configuration options,

the UICC should not modify any other parameters included in the ACTIVATE PDP CONTEXT REQUEST message as defined in TS 24.008 [9] to avoid that the UE sends a value of any of these parameters that is not compliant to TS 24.008 [9];

for an EPS PDN connection activation, the PDN Connectivity Request parameters are used, as defined in TS 24.301 [46]. Except for the following parameters:

- Access Point Name; and

- Protocol configuration options,

the UICC should not modify any other parameters included in the PDN CONNECTIVITY REQUEST message as defined in TS 24.301 [46] to avoid that the UE sends a value of any of these parameters that is not compliant to TS 24.301 [46];

for an IMS communication establishment, the IMS Request-URI field is used and the IMS URI data object holds the SIP URI or tel URI, as defined in TS 24.229[52], to which the ME is proposing setting up the communication. If the URI is longer than the maximum length that can be transmitted to the UICC, then the URI shall be truncated to the maximum length that can be transmitted to the UICC and the request shall contain a URI truncated tag;

for a PDU session establishment, the PDU Session Establishment Request parameters are used, as defined in TS 24.501 [70]. Except for the following parameters:

- SM PDU DN request container; and

- operator specific parameters in Extended Protocol configuration options,

the UICC should not modify any other parameters included in the PDU SESSION ESTABLISHMENT REQUEST message as defined in TS 24.501 [70] to avoid that the UE sends a value of any of these parameters that is not compliant to TS 24.501 [70].

- Capability configuration parameters: Only used for a call set-up, this contains the Bearer capabilities that the ME is proposing to send to the network. The first capability configuration parameters corresponds to the bearer capability 1 information element of a mobile originating SETUP message, as defined in TS 24.008 [9]. The second capability configuration parameters correspond to the bearer capability 2 information element of a mobile originating SETUP message, as defined in TS 24.008 [9]. If no capability configuration parameters are present, this shall indicate a speech call.

- Subaddress: Only used for a call set-up, this contains the called party subaddress that the ME is proposing to send to the network. If one is not present, this shall indicate that the ME is proposing not to send this information element to the network.

- Location information: This data object contains the identification (MCC, MNC, LAC/TAC, Cell Identity) of the current serving cell of the UE. The comprehension required flag of this data object in this command shall be set to '0'. This data object shall be present if the call is performed over GERAN, UTRAN or E-UTRAN.

- Media Type: This data object indicates the type of media the ME is proposing using to set up the communication. If the type of media to be used by the ME is one of those listed in the Terminal Profile and if the "Media Type support" service is allocated and activated in the USIM or ISIM Service Table, the Media Type data object shall be present.

- URI truncated: This data object indicates that the URI in the request was truncated because too long to be transmitted to the UICC.

Response parameters/data.

It is permissible for the UICC to provide no response data, by responding with SW1/SW2 = '90 00'. If the UICC does not provide any response data, then this shall have the same meaning as "allowed, no modification".

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| Description | Clause | M/O/C | Min | Length |
| Call control result | - | M | Y | 1 |
| Length (A+B+C+D+E+F+G) | - | M | Y | 1 or 2 |
| Address or SS string or USSD string or PDP context activation parameters or EPS PDN connection activation parameters or IMS URI or PDU session establishment parameters | 8.1, 8.14 or 8.17 or 8.72 or 8.98 or 8.108 or 8.143 | O | N | A |
| Capability configuration parameters 1 | 8.4 | O | N | B |
| Subaddress | 8.3 | O | N | C |
| Alpha identifier | 8.2 | O | N | D |
| BC repeat indicator | 8.42 | C | N | E |
| Capability configuration parameters 2 | 8.4 | O | N | F |
| Media Type | 8.132 | O | N | G |

- Call control result:

Contents:

- The command that the UICC gives to the ME concerning whether to allow, bar or modify the proposed call (or supplementary service operation);

Coding:

- '00' = Allowed, no modification;

- '01' = Not allowed;

- '02' = Allowed with modifications.

- Address or SS string or USSD string or PDP context/EPS PDN connection activation parameters or IMS URI or PDU session establishment parameters: Only one data object may be included if the UICC requests the call (or supplementary service or USSD operation or PDP context/EPS PDN connection activation or IMS communication establishment or PDU session establishment parameters) details to be modified:

for a call set-up, if the address data object is not present, then the ME shall assume the Dialling number is not to be modified;

if the SS string data object or address data object is present and the ME receives wild values according to TS 31.102 [14], then the ME shall not process the command.

For a supplementary service, if the SS string data object is not present, then the ME shall assume that SS is not to be modified;

for a USSD operation, if the USSD string data object is not present, then the ME shall assume that the USSD operation is not to be modified;

for a PDP context activation, if the PDP context activation parameters object is not present, then the ME shall assume that the PDP context activation is not to be modified;

for an EPS PDN connection activation, if the EPS PDN connection activation parameters object is not present, then the ME shall assume that the EPS PDN connection activation is not to be modified;

for an IMS communication establishment, if the IMS URI data object is not present, then the ME shall assume that neither the SIP URI nor the tel URI are to be modified;

for a PDU session establishment, if the PDU session establishment parameters object is not present, then the ME shall assume that the PDU session establishment is not to be modified.

- Capability configuration parameters: Only used for a call set-up, this data object is only required if the USIM application requests the call details to be modified. The first capability configuration parameters corresponds to the bearer capability 1 information element of a mobile originating SETUP message, as defined in TS 24.008 [9]. The second capability configuration parameters corresponds to the bearer capability 2 information element of a mobile originating SETUP message, as defined in TS 24.008 [9]. If the capability configuration parameters are not present, then the ME shall assume the parameters are not to be modified.

- Subaddress: Only used for a call set-up, this data object is only required if the USIM application requests the call details to be modified. If the subaddress is not present, then the ME shall assume the called party subaddress is not to be modified. If the subaddress supplied by the USIM application is a null data object, then the ME shall not provide a called party subaddress to the network. A null data object shall have length = '00' and no value part.

- Alpha identifier: this data object is only required if the UICC requests a particular indication to be given to the user. The handling of this data object by the ME is described in clause 7.3.1.3. The comprehension required flag of this data object shall be set to '0'.

- BC repeat indicator: indicates how the associated bearers shall be interpreted. The change of bearer occurs on a network event. This BC repeat indicator is conditioned to the presence of the second capability configuration parameters and is coded as defined in TS 24.008 [9].

- Media Type: this data object is only required if the UICC requests the media type of the call to be modified. If the Media Type is not present then the ME shall assume the media type of the call is not to be modified.

It is mandatory for the UICC to provide at least one of the optional data objects if it has set the Call control result to "allowed with modifications".

\*\*\*\*\* Next change \*\*\*\*\*

#### 7.3.1.x Procedure for PDU session establishment

If the service "call control on PDU session by USIM" is available in the USIM Service Table (see TS 31.102 [14]), then for all PDU session establishment (including those resulting from a OPEN CHANNEL proactive UICC command where NG-RAN is selected), the ME shall first pass the corresponding PDU Session Establishment Request message (see TS 24.501 [70]) to the UICC, using the ENVELOPE (CALL CONTROL) command defined above. The ME shall also pass to the UICC in the ENVELOPE (CALL CONTROL) command the current serving cell.

When the ME performs an emergency PDU session establishment, the ME shall not send the ENVELOPE (CALL CONTROL) command to the UICC.

The UICC shall respond in the same way as for mobile originated calls. The ME shall interpret the response as follows:

- if the UICC responds with '90 00', the ME shall send the PDU Session Establishment Request message with the information as sent to the UICC;

- if the UICC responds with '93 00', the ME shall not send the PDU Session Establishment Request message and may retry the command;

- if the UICC provides response data, then the response data from the UICC shall indicate to the ME whether to send the PDU Session Establishment Request message as proposed, not send the PDU Session Establishment Request message or send the PDU Session Establishment Request message using the data supplied by the UICC. It is mandatory for the ME to perform the PDU session establishment in accordance with the data from the UICC, if it is within the ME's capabilities to do so. If the UICC requires PDU session establishment that is beyond the ME's capabilities, then the ME shall not perform PDU session establishment at all.

In the case where the initial PDU Session Establishment Request results from a proactive command OPEN CHANNEL where NG-RAN is selected:

- if the call control result is "not allowed", the ME shall inform the UICC using TERMINAL RESPONSE ("interaction with call control by USIM or MO short message control by USIM, permanent problem; action not allowed");

- if the PDU session establishment data is changed by call control, then the ME shall establish the PDU session using the data given by the UICC, if it is within the ME's capabilities to do so. If the UICC requires a PDU session establishment that is beyond the ME's capabilities, then the ME shall not establish the PDU session at all.