**3GPP TSG-CT WG1 Meeting #123-eC1-202488**

**Electronic meeting, 16-24 April 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.183** | **CR** | **0064** | **rev** | **-** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Clean-up | | | | | | | | | |
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| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-04-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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:*** | | There are a number of editorials and some other issues in the current version of 24.183:  -The term "gateway model" is not applicable in the forward direction.  -Missing statements about this model's impact on networks. | | | | | | | | |
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| ***Summary of change:*** | | Change the term "gateway model" to "forward early media model".  Add that this model does not add any additional requirements on the originating and terminating networks.  Various editorial corrections. | | | | | | | | |
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| ***Consequences if not approved:*** | | Hard to read specification, | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.3.1.2, 4.3.1.3, 4.5.5.1, 4.5.5.2.1, 4.5.5.2.2.1, 4.5.5.2.2.2, 4.5.5.2.3.1, 4.5.5.2.3.2, 4.5.5.2.4, 4.5.5.2.4.2, 4.5.5.3.1, 4.5.5.3.6, A.1, D.1.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

#### 4.3.1.2 Requirements on the originating network side

The originating network side may support the "early-session" extension as described in RFC 3959 [7].

For the early session model and the gateway model, if the CRS service is provided by the originating network, the CRS AS shall control an MRF as described in 3GPP TS 24.229 [3] that is acting on behalf of a calling subscriber who has activated CRS.

The CRS service implementing the download and play model adds no additional requirements on the originating network side.

\* \* \* Next Change \* \* \* \*

#### 4.3.1.3 Requirements on the terminating network side

The terminating network side may support the "early-session" extension as described in RFC 3959 [7].

NOTE: the CRS service implementing the early-session model needs the early-session extension to be supported by intermediate entities and the terminating UE, else CRS mediacan not be provided to the called party.

The CRS service implementing the download and play model adds no additional requirements on the terminating network side.

For early session model and the gateway model, if the CRS service is provided by the terminating network, the CRS AS shall control an MRF as described in 3GPP TS 24.229 [3] that is acting on behalf of a called subscriber who has activated CRS.

\* \* \* Next Change \* \* \* \*

#### 4.5.5.1 Actions at the originating UE

The UE shall follow the procedures specified in 3GPP TS 24.229 [3] for session initiation and termination.

If a specific CRS media that the originating UE wants to play to the terminating UE exists, the originating UE shall insert an Alert-Info header field with a URL which indicates the specific CRS media defined by the CRS AS serving the originating UE, and an XML body as specified in annex D needs to be added in the initial SIP INVITE request and delivered to the CRS AS that is serving the originating UE.

\* \* \* Next Change \* \* \* \*

##### 4.5.5.2.1 General

The UE shall follow the procedures specified in 3GPP TS 24.229 [3] for session termination.

If the terminating UE supports the early session mechanism then the UE shall make use of the procedures as specified in RFC 3959 [4].

Upon receiving the CRS media, the terminating UE shall play the CRS media. If media type of the local ringing signal is not in conflict with media type of the received CRS media, the local ringing signal shall be played at the same time to the received CRS media otherwise the local ringing signal shall not be played.

NOTE: How to decide that the media type of the local ringing signal is in conflict with the media type of the CRS media type depends on UE implementation.

\* \* \* Next Change \* \* \* \*

###### 4.5.5.2.2.1 General

If the terminating UE supports the download and play model, and an initial INVITE request contains an Alert-Info header field including a URI followed by a URN "urn:alert:service:crs", then the UE shall fetch and play the CRS media from the URL contained in the Alert-Info header field in the INVITE request.

\* \* \* Next Change \* \* \* \*

###### 4.5.5.2.2.2 UE Actions for CRS copy

In order for the called party to copy the media for the CRS service, the UE shall send a specific DTMF digit for CRS copy.

NOTE: The definition of which DTMFs are used is outside the scope of the present document and is dependent on the implementation of operator.

\* \* \* Next Change \* \* \* \*

###### 4.5.5.2.3.1 General

The UE shall follow the procedures specified in 3GPP TS 24.229 [3] for session termination with the following additions:

a) Upon receiving an initial INVITE request, the UE shall:

- check whether an Alert-Info header field with a URN "urn:alert:service:crs" present; and

b) if present, then the UE shall:

- send a reliable SIP 18x response as specified in 3GPP TS 24.229 [3];

- not play local ringing tone to terminating user when a 180 response is sent;

- if SIP PRACK request containing an SDP early session offer, containing an SDP a=content attribute with a "a.3gpp.crs" value for each media description is received, send back a SIP 200 (OK) response to the request including an SDP early session answer; and

- receive the CRS media from network and play it as ringing tone.

NOTE: The UE plays a local ringing tone if no CRS media is received within a specific time.

\* \* \* Next Change \* \* \* \*

###### 4.5.5.2.3.2 UE Actions for CRS copy

In order for the called party to copy the media for the CRS service, the UE shall send a specific DTMF digit for CRS copy.

NOTE: The definition of which DTMFs are used is outside the scope of the present document and is dependent on the implementation of operator.

\* \* \* Next Change \* \* \* \*

##### 4.5.5.2.4 UE support of DTMF

In addition to indicating support of the telephone-event media subtype in the SDP answer, as defined in 3GPP TS 24.229 [3], the UE shall indicate support of the SIP INFO mechanism for DTMF transport, as defined in 3GPP TS 24.229 [3], by including a Recv-Info header field with a "infoDtmf" value, as defined in IETF RFC 6086 [7]. The AS will indicate to the UE which DTMF transport mechanism to use for CRS control.

\* \* \* Next Change \* \* \* \*

###### 4.5.5.2.4.2 UE Actions for CRS stop

In order for the called party to stop the media for the CRS service, the UE shall send a specific DTMF digit for CRS stop.

In order for the called party to restart the media for the CRS service, the UE shall send a specific DTMF digit for CRS restart.

NOTE: The definition of which DTMFs are used is outside the scope of the present document and is dependent on the implementation of operator.

\* \* \* Next Change \* \* \* \*

##### 4.5.5.3.1 General

The procedures specified in 3GPP TS 24.229 [3] for an AS acting as a routing B2BUA apply with additions described in the subclauses below.

Upon receiving a SIP INVITE request containing an XML body as specified in annex D, the AS shall fetch the URL indication for a specific CRS media in the Alert-Info header field as indicated in annex D, and delete this URL indication in the Alert-Info header field and delete the XML body before forwarding the SIP INVITE request.

If the first reliable SIP 18x response destined to served user includes a Require header field with "early-session" option-tag and the AS supports the "early-session" extension as described in RFC 3959 [4], the AS shall, based on operator policy, follow the procedures in subclause 4.5.5.3.2 to provide CRS service according to the configuration rules, e.g. time, calling party's location, called party's location, the identity of the calling and called party, if privacy is required, any information which should be private cannot be used as the rules to provide the CRS service. The procedures in subclause 4.5.5.3.2 shall not be used if there are intermediates in the network that do not support the early session extension. In addition, intermediates and network policy must allow media towards the terminating UE before the call has been answered.

\* \* \* Next Change \* \* \* \*

##### 4.5.5.3.6 AS Actions for Gateway model

The AS performing the Gateway model shall follow the procedure as specified in RFC 3960 [10] and annex G in 3GPP TS 24.628 [11] with the additional procedures described in this subclause.

Upon receiving an initial INVITE request from the originating UE, the AS shall forward the initial INVITE request to the terminating UE after inserting an Alert-Info header field with an URN "urn:alert:service:crs".

Upon receiving the first reliable SIP 18x response to the initial INVITE request, the AS:

a) may contact the MRF to request CRS resource; and

b) shall forward the reliable SIP 18x response to the originating UE.

Upon receiving the PRACK request of the first reliable 18x response from originating UE, the AS shall forward the PRACK request to the terminating UE and contact the MRF to request CRS resource if it has not been previously requested.

When the video media feature tag is not included in the Contact header field of the previously received 18x response from the terminating UE and there is no video description in the SDP answer included in the 18x response, the AS shall not request video CRS resource from MRF, and shall not apply video CRS media to the terminating UE.

After receiving 180 (Ringing) response or receiving a SIP 200 (OK) response to the PRACK request of the first reliable SIP 18x response from terminating UE, the AS shall update media of CRS service with terminating UE by UPDATE request as specified in RFC 3311 [12] with:

a) P-Early-Media header field with a "sendrecv" value or a "sendonly" value; and

b) an SDP offer, which is based on the CRS information received from the MRF and includes an a=content media-level attribute with a "g.3gpp.crs" value. The media types can include additional media types compared to the SDP answer of the previous 18x response from the terminating UE.

If the terminating UE requires the use of precondition mechanism, the AS shall not instruct the MRF to start applicable media for the CRS service before the terminating UE has indicated that preconditions are fulfilled. The point when the AS instruct the MRF to start applicable media for the CRS service is based on local policy.

Upon receiving a SIP 200 (OK) response to the INVITE request from the terminating UE, the AS shall instruct the MRF to stop media for the CRS service and update media for conversation. If the AS is going to update media with both originating side and terminating side, the AS shall:

a) send a re-INVITE request containing no SDP offer to the terminating side;

b) upon receiving a SIP response to the re-INVITE request containing an SDP offer from the terminating side, generate an UPDATE request as specified in RFC 3311 [12] to send an SDP offer to the originating UE. The SDP offer shall only contain the media components which appeared both in the SDP offer contained in the SIP response to the re-INVITE request and the previously stored SDP offer in the initial INVITE request. The port number of the corresponding m-line shall be set to zero if it has been set to zero during previous SDP negotiation; and

c) upon receiving a 200 (OK) response to the UPDATE request from the originating side, generate an SDP answer to the terminating side, included in the ACK request associated with the re-INVITE request. The SDP answer shall be based on the SDP answer contained in the 200 (OK) response to the UPDATE request, and for the media components which do not appear in the SDP answer in the 200 (OK) response, set the port number of the corresponding m-line to zero.

Upon receiving a SIP 4xx, 5xx or 6xx response to the initial INVITE request from the terminating UE, the AS shall:

a) instruct the MRF to stop the media for the CRS service; and

b) forward the final response to the originating UE.

\* \* \* Next Change \* \* \* \*

# A.1 CRS download and play model signalling flows

\* \* \* Next Change \* \* \* \*

## D.1.2 XML schema

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema

xmlns:xs="http://www.w3.org/2001/XMLSchema"

elementFormDefault="qualified"

attributeFormDefault="unqualified">

<xs:element name="fetchAlertInfo" type="crs"/>

<xs:complexType name="crs"/>

</xs:schema>

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