**3GPP TSG-CT WG1 Meeting #146C1-240124**

**Online, 22– 26 January 2024**

**Source: Huawei, Hisilicon**

**Title: Pseudo-CR on Update the procedure of IMS AS of originating side**

**Spec: 3GPP TS 24.186**

**Agenda item: 18.3.8**

**Document for: Decision**

**1. Introduction**

<Introduction part (optional)>

**2. Reason for Change**

a. SA2 has agreed, when the IMS AS receives the SDP answer, the IMS AS needs to update the media information of MF and MRF, while, the procedure is not included in the procedure of IMS AS.

b. How the IMS AS handle the SDP based on the instruction from DCSF needs to be specified.

The figure below shows the media model of MF/MRF of the originating side and the terminating side. Tx means the termination, the Mx means the data channel media description.



**When the originating IMS AS receives the SDP offer:**

The bootstrap data channels:

* M1 is negotiated between orig UE and orig NW, which does not need to negotiate with the terminating network. So, the IMS AS shall delete M1 in the SDP offer.
* M2 is negotiated between orig UE and term NW, when the media is anchored on the orig MF, the M2 shall be modified. The DC endpoint information of the UE shall be changed to the DC endpoint information on T2.
* M3 is negotiated between orig NW and term UE, so the IMS AS shall generate M3 and add M3 in the SDP offer.

The application data channels:

* M4 is negotiated between orig UE and orig NW. The IMS AS needs to delete M4 in SDP offer.
* M5 is negotiated between orig UE and term NW. If the media is anchored on the orig MF, the M5 in the SDP offer shall be modified. The DC endpoint information of the UE shall be changed to the DC endpoint information on T2.
* M6 is negotiated between orig UE and term UE. If the media is anchored on the orig MF, the M6 shall be modified.

**When the originating IMS AS receiving the SDP answer:**

The bootstrap data channels:

* Generate M1 and add M1 in the SDP answer
* M2 in SDP answer shall be modified. The DC endpoint information of the remote network shall be changed to the DC endpoint information on T1.
* Delete M3 in the SDP answer.

The application data channels:

* Generate the SDP answer of M5 and add M5 in the SDP answer.
* M6 in SDP answer shall be modified. The DC endpoint information of the remote network shall be changed to the DC endpoint information on T1.
* M7 in SDP answer shall be modified. The DC endpoint information of the remote network shall be changed to the DC endpoint information on T1.

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.186.

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

#### 9.3.2.2 Procedure at the IMS AS

Based on served user service specific data which is enhanced with IMS data channel specific service details, if the served user is not authorized to use IMS data channel, the IMS AS may delete the received data channel media information from INVITE or re-INVITE message, e.g. m=application line with "webrtc-datachannel", and send the INVITE or re-INVITE message to the S-CSCF.

Upon the reception of INVITE or re-INVITE message, based on served user service specific data which is enhanced with IMS data channel specific service details, if the served user is authorized to use IMS data channel, the IMS AS will notify the DCSF about a session establishment request event. Based on the received Media instruction set from the DCSF, the IMS AS shall select the MRF (or MF) and request the MRF (or MF) to allocate required data channel media resources.

1. If the MF is selected, based on the response of the reserved media resource from MF, the IMS AS shall
2. delete the bootstrap data channel media description terminated locally, i.e. local bootstrap data channel for the originating UE (the media line with the "dcmap" attribute containing a subprotocol parameter set to "http" and "stream-id" parameter set to values 0 and 10);
3. modify the remote bootstrap data channel media description (the media line with the "dcmap" attribute containing a subprotocol parameter set to "http" and "stream-id" parameter set to values 100 and110) for the originating UE towards to the terminating network, i.e. the remote bootstrap data channel between the originating UE and terminating network if the media is anchored in the originating MF,
* replace the DC endpoint information (which includes the SCTP endpoint and DTLS endpoint) received in the SDP offer with the media resource information on the termination offered to the remote network allocated on MF, and
* add "a=3gpp-bdc-used-by:" attribute line containing "bdc-used-by" parameter set to value "sender" if not present.
1. generate and add the remote bootstrap data channel media description for the terminating UE (the media line with the "dcmap" attribute containing a subprotocol parameter set to "http" and "stream-id" parameter set to values 100 and110 and "a=3gpp-bdc-used-by" attribute with "bdc-used-by" parameter set to value "receiver"), i.e. remote bootstrap data channel between the originating network and the terminating UE.

Editor’s note: How the IMS AS handle the SDP when the MRF is selected is FFS.

The IMS AS shall send the INVITE or re-INVITE request with audio, video and modified data channel SDP offer to the S-CSCF towards the terminating network.

Upon receipt the 18x or 2xx response on the INVITE or re-INVITE message including the SDP answer which includes the data channel media description, the IMS AS will notify to DCSF about corresponding session event (session establishment progress (183), session establishment alerting (180) or session establishment success (200) event) and shall request the MRF (or MF) to update the media resource.

1. If MF is used, based on the media resource update response from MF, the IMS AS shall
2. delete the remote bootstrap data channel media description for the terminating UE (the media line with the "dcmap" attribute containing a subprotocol parameter set to "http" and "stream-id" parameter set to values 100 and110 and "a=3gpp-bdc-used-by" attribute with "bdc-used-by" parameter set to value "receiver"), i.e. the remote bootstrap data channel between terminating UE and originating network from the SDP answer;
3. modify the remote bootstrap data channel media description in the SDP answer for originating UE (the media line with the "dcmap" attribute containing a subprotocol parameter set to "http" and "stream-id" parameter set to values 100 and110 and "a=3gpp-bdc-used-by" attribute with "bdc-used-by" parameter set to value "sender"), i.e. the remote data channel for the originating UE between originating UE and terminating network,
* replace the DC endpoint information in the SDP answer with the media resource information on the termination terminated locally allocated on the MF
1. generate and add the local bootstrap data channel media description for the originating UE (the media line with the "dcmap" attribute containing a subprotocol parameter set to "http" and "stream-id" parameter set to values 0 and10), i.e the local bootstrap data channel between originating UE and originating network in the SDP answer.

The IMS AS shall include the modified SDP answer for data channel in the 18x or 2xx OK response and send 18x or 2xx OK response to S-CSCF towards the originating UE.

Upon receipt of a 2xx response for a BYE request matching an existing IMS session of application data channel, the IMS AS shall follow the call release procedure as per 3GPP TS 24.229 [9].

Additionally, IMS AS will notify session release event to DCSF and as per media instruction request from DCSF, IMS AS will send media resource management request to MRF to release the allocated data channel media resources for this IMS Session. IMS AS will notifies DCSF about the DC media release as part of media instruction response.

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