**3GPP TSG-CT WG1 Meeting #125-eC1-20wxyz**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **29.379** | **CR** | **CR#** | **rev** | **-** | **Current version:** | **16.0.0** |  |
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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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | Affiliation on behalf of the multiple LMR users |
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| ***Source to WG:*** | FirstNet |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | enh1MCCI\_CT |  | ***Date:*** | 20 August 2020 |
|  |  |  |  |  |
| ***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-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 editor's notes in TS 29.379 indicating it is FFS how the LMR can affiliate on behalf of multiple users. An explanation is needed that provides the details of how such affiliation is accomplished and limitations resulting from such affiliation. |
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| ***Summary of change:*** | Explanatory text is added to clause 9.1 explaining that the IWF can affiliate to a group using an MCPTT ID assigned to it on behalf of an entire LMR system. The limtation will be that any function in the MCPTT system that depends on knowing the MCPTT IDs of all affiliated users or the count of affiliated users will not have accurate information. |
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| ***Consequences if not approved:*** | The editor's notes will remain in TS 29.379 and clarification of the limitations will not be available. |
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| ***Clauses affected:*** | 9.1, 10.1.3.1.1, 10.2.2.1.1 |
|  |  |
|  | **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 \* \* \* \* \***

## 9.1 General

Clause 9.2.1.2 contains the procedures for explicit and implicit affiliation of a user homed in the IWF at the IWF homing that user.

Clauses in 9.2.1.2 also cover the case where the IWF manages affiliation to a group on behalf of the users homed in that IWF (i.e. having only one affiliation for a whole set of users homed in the IWF). In that case, the IWF needs to implement the same set of procedures but in those procedures, it shall use the MCPTT ID and the MCPTT client ID that are associated with the IWF itself instead of the ones associated with a user homed in the IWF.

NOTE: How the MCPTT ID and MCPTT client ID associated with the IWF are determined is out of the scope of this specification.

Clause 9.2.1.3 contains the procedures for explicit and implicit affiliation of an MCPTT user at the IWF owning the MCPTT group.

The procedures for implicit affiliation in this clause are triggered at the IWF for a user homed in the IWF in the following circumstances:

- when the IWF performing the participating role attempts to join an MCPTT chat group for a user homed in the IWF that is not already affiliated to the MCPTT group;

- when the IWF performing the participating role attempts to initiate an MCPTT emergency group call or MCPTT imminent peril group call for a user homed in the IWF that is not already affiliated to the MCPTT group;

- when the IWF performing the participating role attempts to initiate an MCPTT emergency alert targeted to an MCPTT group for a user homed in the IWF that is not already affiliated to the MCPTT group.

The procedures for implicit affiliation in this clause are triggered at the IWF owning the MCPTT group in the following circumstances:

- on receipt of a SIP INVITE request from an MCPTT server serving an MCPTT user where the MCPTT user wants to join an MCPTT chat group homed in the IWF and the MCPTT client is not already affiliated to the MCPTT group homed in the IWF;

- on receipt of a SIP INVITE request from an MCPTT server serving an MCPTT user where the MCPTT user initiates an MCPTT emergency group call or MCPTT imminent peril group call to a group homed in the IWF and the MCPTT client is not already affiliated to the MCPTT group homed in the IWF; and

- on receipt of a SIP MESSAGE request from an MCPTT server serving an MCPTT user when the MCPTT user initiates an MCPTT emergency alert targeted to an MCPTT group homed in the IWF and the MCPTT client is not already affiliated to the MCPTT group homed in the IWF.

When the IWF affiliates to an MCPTT group on behalf of multiple users homed in the IWF using the MCPTT ID and the MCPTT client ID that are associated with the IWF itself, the IWF internally determines when such affiliation is to be made to the MCPTT group and when de-affiliation from the MCPTT group is to be done.

It is understood that, since the MCPTT IDs of the actual LMR users participating in the MCPTT group are not provided to the MCPTT system, functions such as listing all affiliated group members and counting affiliated group members can give inaccurate results. It is further understood that the MCPTT ID appearing in call control signalling and floor control messages can be different from the IWF's MCPTT ID and MCPTT client ID.

##### **\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 10.1.3.1.1 On demand prearranged group call

In this clause, the IWF originates a prearranged group session on behalf of an LMR user.

NOTE 1: How the IWF determines the MCPTT ID of the calling user is out of scope of the present document.

The IWF, performing the originating participating function:

1) if the user identified by the MCPTT ID is not affiliated to the group as determined by clause 9.2.1.2.8 and this is an authorised request for originating a priority call as determined by clause 6.6.2.1.4.2, shall perform the actions specified in clause 9.2.1.2.9 for implicit affiliation;

2) shall determine the public service identity of the controlling MCPTT function associated with the group identity of the group on which the call is to be originated;

NOTE 2: How the IWF discovers the public service identity of the controlling MCPTT function associated with the group identity is out of scope of the present document.

3) shall generate a SIP INVITE request as specified in clause 10.1.2.1;

4) shall modify the SIP INVITE request as specified in clause 6.6.2.1.2;

5) may insert the calling user's location information into an application/vnd.3gpp.mcptt-location-info+xml MIME body to be included in the outgoing SIP request;

6) shall set the Request-URI to the public service identity of the controlling MCPTT function associated with the group identity;

7) shall set the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request to the MCPTT ID of the calling user;

8) shall update the SDP as specified in clause 6.6.2.1.1.1; and

9) shall send the SIP INVITE request to the controlling MCPTT function as specified in 3GPP TS 24.229 [3].

Upon receipt of a SIP 302 (Moved Temporarily) response to the above SIP INVITE request, the participating IWF function:

1) shall generate a SIP INVITE request as specified in clause 6.6.2.1.5;

2) shall include an SDP offer based upon the SDP offer in the SIP INVITE request generated by the IWF in the step above; and

3) shall forward the SIP INVITE request according to 3GPP TS 24.229 [3].

Upon receipt of a SIP 2xx response in response to the above SIP INVITE request, the IWF performing the participating role:

NOTE 3: If an <MKFC-GKTPs> element is received, the IWF ignores that element.

1) if the procedures of clause 9.2.1.2.9 for implicit affiliation were performed in the present clause, shall complete the implicit affiliation by performing the procedures of clause 9.2.1.2.10;

2) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [6].

3) shall perform the steps for SIP 2xx as specified in clause 10.1.2.1.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the above SIP INVITE request, the participating IWF function:

1) if the implicit affiliation procedures of clause 9.2.1.2.9 were invoked in this procedure, shall perform the procedures of clause 9.2.1.2.11; and

2) shall perform the steps for the received SIP 4xx, 5xx or 6xx as specified in clause 10.1.2.1.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the IWF shall perform the steps for the received SIP INFO in clause 10.1.2.1.

##### 10.1.3.1.2 Sending of a SIP re-INVITE request towards MCPTT controlling function

Upon a need to send a SIP re-INVITE request for an MCPTT session identifying an on-demand prearranged MCPTT group session, the IWF performing the participating role:

1) if the request is for an upgrade to an in-progress emergency or an imminent peril, shall perform the steps in clause 10.1.2.3;

2) if the request is for a cancellation of an in-progress emergency, shall perform the steps in clause 10.1.2.4;

3) if the request is for a cancellation of an in-progress imminent peril, shall perform the steps in clause 10.1.2.5;

4) shall include the MCPTT ID of the originating user in <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP re-INVITE request;

NOTE 1: How the IWF determines the MCPTT ID of a user homed in the IWF is out of scope of the present document.

5) shall include in the SIP re-INVITE request an SDP offer as specified in clause 6.6.2.1.1;

6) if the SIP re-INVITE requires a Resource-Priority header field, shall include a Resource-Priority header field according to 6.4.1.11; and

7) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [3].

Upon receipt of a SIP 2xx response to the above SIP re-INVITE request, the IWF performing the participating role:

1) shall interact with the media plane as specified in 3GPP TS 29.380 [31];

2) if the request in the present clause above is for an upgrade for emergency or imminent peril, shall follow the procedures for SIP 200 (OK) response as specified in clause 10.1.2.3;

3) if the request in the present clause above is for an in-progress emergency cancel, shall follow the procedures for SIP 200 (OK) response as specified in clause 10.1.2.4; and

4) if the request in the present clause above is for an in-progress imminent peril cancel, shall follow the procedures for SIP 200 (OK) response as specified in clause 10.1.2.5.

Upon receipt of a SIP 403 (Forbidden) response to the above SIP re-INVITE request, the IWF performing the participating role shall interact with the media plane as specified in 3GPP TS 29.380 [31].

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP re-INVITE request, the IWF performing the participating role:

1) if the request in the present clause above is for an upgrade for emergency or imminent peril, shall follow the procedures for SIP 4xx, SIP 5xx and SIP 6xx responses as specified in clause 10.1.2.3;

2) if the request in the present clause above is for an in-progress emergency cancel, shall follow the procedures for SIP 4xx, SIP 5xx and SIP 6xx responses as specified in clause 10.1.2.4; or

3) if the request in the present clause above is for an in-progress imminent peril cancel, shall follow the procedures for SIP 4xx, SIP 5xx and SIP 6xx responses as specified in clause 10.1.2.5.

Upon receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing session, the IWF performing the participating role:

1) if the SIP re-INVITE request in the present clause above is for an upgrade for emergency or imminent peril, shall follow the procedures for SIP INFO as specified in clause 10.1.2.3;

2) if the SIP re-INVITE request in the present clause above is for an in-progress emergency cancel, shall follow the procedures for SIP INFO as specified in clause 10.1.2.4; or

3) if the SIP re-INVITE request in the present clause above is for an in-progress imminent peril cancel, shall follow the procedures for SIP INFO as specified in clause 10.1.2.5.

##### **\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 10.2.2.1.1 MCPTT chat session establishment

In this clause, the IWF originates a chat group session on behalf of a user homed in the IWF.

NOTE 1: How the IWF determines the public user identity and the MCPTT ID of the calling user is out of scope of the present document.

The IWF, performing the originating participating role:

1) shall determine the public service identity of the controlling MCPTT function associated with the group identity of the group on which the call is to be originated;

NOTE 2: How the IWF discovers the public service identity of the controlling MCPTT function associated with the group identity is out of scope of the current document.

2) if the calling user identified by the MCPTT ID is not affiliated to the group on which the call is to be originated, as determined by clause 9.2.1.2.8, shall perform the actions specified in clause 9.2.1.2.9 for implicit affiliation;

3) shall generate a SIP INVITE request as specified in clause 10.2.1.1.1;

4) if step 3 was performed successfully, shall complete the SIP INVITE request as specified in clause 6.6.2.1.2;

5) if steps 3 and 4 were performed successfully:

a) shall set the Request-URI to the public service identity of the controlling MCPTT function;

b) shall set the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body to the MCPTT ID of the calling user;

c) may insert the calling user's location information into an application/vnd.3gpp.mcptt-location-info+xml MIME body;

d) shall send the SIP INVITE request to the controlling MCPTT function as specified in 3GPP TS 24.229 [3].

Upon receipt of a SIP 302 (Moved Temporarily) response to the above SIP INVITE request, the IWF, performing the originating participating role:

1) shall generate a SIP INVITE request as specified in clause 6.6.2.1.5;

2) shall include an SDP offer based upon the SDP offer in the SIP INVITE request generated by the IWF in the step above; and

3) shall send the SIP INVITE request to the controlling MCPTT function according to 3GPP TS 24.229 [3];

Upon receipt of a SIP 2xx response to the above SIP INVITE request in step 3) the IWF performing the participating role:

1) shall perform the procedures for receiving a SIP 2xx response as specified in clause 10.2.1.1.1;

2) if the procedures of clause 9.2.1.2.9 for implicit affiliation were performed in the present clause, shall complete the implicit affiliation by performing the procedures of clause 9.2.1.2.10.

3) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [6].

Upon receipt of a SIP 4xx, 5xx or 6xx response to the above SIP INVITE request in step 14) the IWF performing the participating role:

1) shall perform the procedures for receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response as specified in clause 10.2.1.1.1;

2) if the implicit affiliation procedures of clause 9.2.1.2.9 were invoked in the current procedure, shall perform the procedures of clause 9.2.1.2.10.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the IWF performing the participating role shall follow the actions for SIP INFO as specified in clause 10.2.1.1.1.

##### **\* \* \* \* \* END CHANGES \* \* \* \* \***