**3GPP TSG-CT WG1 Meeting #133-eC1-21abcd**

**E-meeting, 11-19 November 2021 *was* C1-217040**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.379** | **CR** | **0765** | **rev** | **1** | **Current version:** | **13.17.0** |  |
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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 | **X** |

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|  |
| ***Title:***  | Corrections to private call without floor control using pre-established session |
|  |  |
| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | MCPTT-CT |  | ***Date:*** | 04-11-2021 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | *Rel-13* |
|  | *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)* |
|  |  |
| ***Reason for change:*** | The procedure in the current spec supports the private call without floor control using pre-established session and is achieved by not indicating the media plane control channel which is used for both floor control and pre-established session call control during the session. As the media plane control channel is not indicated as a part of call setup request, server will not be able to send any call control messages to the originating client which leads a call failure. The pre-established session based call setup always requires a media plane control channel for transporting the call control messages.  |
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| ***Summary of change:*** | The media plane control channel is always established/used for the pre-estblished session based call setup request. If the user wants to setup a call session without floor control, then user can include the media plane control channel with new fmtp attribute “mc\_no\_floor\_ctrl” to indicate that the media plane control channel is used for only transporting the call control messages and it can also indicate to the server that call should be established without floor control support.  |
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| ***Consequences if not approved:*** | No channels will be available to transport the pre-established session call control messages when user originates the private call without floor control using pre-established session and always it will result into a call failure. |
|  |  |
| ***Clauses affected:*** | 6.2.1, 6.3.2.1.1.1, 6.3.2.1.1.2, 6.3.2.1.2.1, 6.3.2.1.2.2, 6.3.3.1.1, 6.3.3.2.1, 6.3.4.1.1, 6.3.4.2.1 and 11.1.2.3.1 |
|  |  |
|  | **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 ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* \* \* FIRST CHANGE \* \* \* \* \* \*

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**An MCPTT user is affiliated to an MCPTT group**: The MCPTT user has expressed interest in an MCPTT group it is a member of, and both the MCPTT server serving the MCPTT user and the MCPTT server owning the MCPTT group have authorized the MCPTT user's interest in the MCPTT group communication.

**An MCPTT user is affiliated to an MCPTT group at an MCPTT client**: The MCPTT user is affiliated to the MCPTT group, the MCPTT client has a registered IP address for an IMPU related to the MCPTT ID, and the MCPTT server serving the MCPTT user has authorised the MCPTT user's interest in the MCPTT group at the MCPTT client.

**Affiliation status**: Applies for an MCPTT user to an MCPTT group and has one of the following states:

a) the "not-affiliated" state indicating that the MCPTT user is not interested in the MCPTT group and the MCPTT user is not affiliated to the MCPTT group;

b) the "affiliating" state indicating that the MCPTT user is interested in the MCPTT group but the MCPTT user is not affiliated to the MCPTT group yet;

c) the "affiliated" state indicating that the MCPTT user is affiliated to the MCPTT group and there was no indication that MCPTT user is no longer interested in the MCPTT group; and

d) the "deaffiliating" state indicating that the MCPTT user is no longer interested in the MCPTT group but the MCPTT user is still affiliated to the MCPTT group.

**Ambient listening call:** a call typeallowing an authorized MCPTT user to cause an MCPTT client to initiate a communication which results in no indication on the MCPTT UE that it is transmitting. Ambient listening can be initiated by an authorized MCPTT user who wants to be listened to by another authorized MCPTT user or can be initiated by an authorized MCPTT user who wants to listen to another MCPTT user.

**Ambient listening client role:** the role of an MCPTT client in an ambient listening call, which can be that of:

a) the "listening MCPTT user"; or

b) the "listened-to MCPTT user".

**Ambient listening type:** the type of an ambient listening call from the perspective of the relationship of the initiator of the call to the user being listened to. The two types of ambient listening call are:

a) "remote-init", indicating that the listening MCPTT user initiated the call; and

b) "local-init", indicating that the listened-to MCPTT user initiated the call.

**First-to-answer call:** A call initiated by one user towards a list of other users with the intention to establish an MCPTT private call or MCPTT emergency private call, with one of the users in the list of users.

**Group document:** when the group is not a regroup based on a preconfigured regroup, the term "group document" used within the present document refers to the group document for that group within the GMS as specified in 3GPP TS 24.481 [31]; when the group is a regroup based on a preconfigured group, the term "group document" used within the present document refers to the group document for the preconfigured group as specified in 3GPP TS 24.481 [31] restricted to the users or groups included in the regroup stored by the MCPTT server at the time of the regroup creation, see clause 16.

**Group identity**: An MCPTT group identity or a temporary MCPTT group identity.

**In-progress emergency private call state:** the state of two participants when an MCPTT emergency private call is in progress.

**In-progress imminent peril group state:** the state of a group when an MCPTT imminent peril group call is in progress.

**Listening MCPTT user:** the MCPTT user in an ambient listening call receiving the media transmission from the listened-to MCPTT user;

**Listened-to MCPTT user:** the MCPTT user in an ambient listening call who is being listened to, may or may not be aware of being listened to depending on ambient listening type of the call.

**MCPTT client ID:** is a globally unique identification of a specific MCPTT client instance. MCPTT client ID is a UUID URN as specified in IETF RFC 4122 [67].

**MCPTT emergency alert state:** MCPTT client internal perspective of the state of an MCPTT emergency alert.

**MCPTT emergency group state:** MCPTT client internal perspective of the in-progress emergency state of an MCPTT group maintained by the controlling MCPTT function.

**MCPTT emergency group call state:** MCPTT client internal perspective of the state of an MCPTT emergency group call.

**MCPTT emergency private call:** MCPTT emergency call between two MCPTT users that is initiated as a private call or a first-to-answer call with emergency indication, or without emergency indication when the MCPTT emergency state is already set,

**MCPTT emergency private call state:** MCPTT client internal perspective of the state of an MCPTT emergency private call.

**MCPTT emergency private priority state:** MCPTT client internal perspective of the in-progress emergency private call state of the two participants of an MCPTT emergency private call maintained by the controlling MCPTT function.

**MCPTT imminent peril group call state:** MCPTT client internal perspective of the state of an MCPTT imminent peril group call.

**MCPTT imminent peril group state:** MCPTT client internal perspective of the state of an MCPTT imminent peril group.

**MCPTT private call:** MCPTT call between two MCPTT users that is initiated as a private call or a first-to-answer call.

**MCPTT private emergency alert state:** MCPTT client internal perspective of the state of an MCPTT private emergency alert targeted to an MCPTT user.

**MCPTT speech:** Conversational audio media used in mission critical push to talk systems as defined by 3GPP TS 22.179 [2] and 3GPP TS 23.379 [3].

**Media-floor control entity**: A media control resource shared by participants in an MCPTT session, controlled by a state machine to ensure that only one participant can access the media resource at the same time.

**Pre-established session call control entity**: A pre-established session call control resource shared by participants in an MCPTT session, controlled by a state machine to send and receive pre-established session call control messages to participate and leave the MCPTT session.

**N2:** The maximum number of simultaneous affiliations to MCPTT groups that the MCPTT user may have. The value of N2 is specified in the <MaxAffiliationsN2> element of the <Common> element of the MCPTT user profile and corresponds to the parameter Nc2 specified in 3GPP TS 22.280 [76].

**Private call:** A call initiated by one user towards one other user with the intention to establish an MCPTT private call or MCPTT emergency private call.

**Private Call Call-Back:** A mechanism for a requesting MCPTT client to request a targeted MCPTT client to initiate an MCPTT private call with the requesting MCPTT client (at earliest convenience).

**Remote change of an MCPTT user's selected group:** A mechanism allowing an authorised user to remotely change the selected group of another MCPTT user.

**Temporary MCPTT group identity**: A group identity representing a temporary grouping of MCPTT group identities formed by the group regrouping operation as specified in 3GPP TS 24.481 [31].

**Trusted mutual aid**: A business relationship whereby the Partner MCPTT system is willing to share the details of the members of an MCPTT group that it owns with the Primary MCPTT system.

**Untrusted mutual aid**: A business relationship whereby the Partner MCPTT system is not willing to share the details of the members of an MCPTT group that it owns with the Primary MCPTT system.

**Functional alias status**: Applies for the status of a functional alias for an MCTT user and has one of the following states:

a) the "not-activated" state indicating that the MCPTT user has not activated the functional alias;

b) the "activating" state indicating that the MCPTT user is interested in using the functional alias but the functional alias is not yet activated for the MCPTT user;

c) the "activated" state indicating that the MCPTT user has activated the functional alias;

d) the "deactivating" state indicating that the MCPTT user is no longer interested in using the functional alias but the functional alias is still activated for the MCPTT user; and

e) the "take-over-possible" state indicating that the MCPTT user is interested in using the functional alias but the functional alias is already activated and used by another MCPTT user.

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.179 [2] apply:

**In-progress emergency**

**MCPTT emergency alert**

**MCPTT emergency group call**

**MCPTT emergency state**

**Partner MCPTT system**

**Primary MCPTT system**

For the purpose of the present document, the following terms and definitions given in 3GPP TS 24.380 [5] apply:

**MBMS subchannel**

For the purpose of the present document, the following terms and definitions given in 3GPP TS 23.379 [3] apply:

**Pre-selected MCPTT user profile**

**Selected MCPTT user profile**

For the purpose of the present document, the following terms and definitions given in 3GPP TS 33.180 [78] apply:

**Client Server Key (CSK)**

**Multicast Floor Control Key (MKFC)**

**Multicast Signalling Key (MuSiK)**

**Multicast Signalling Key Identifier (MuSiK-ID)**

**MBMS subchannel control key (MSCCK)**

**MBMS subchannel control key identifier (MSCCK-ID)**

**Private Call Key (PCK)**

**Signalling Protection Key (SPK)**

**XML Protection Key (XPK**)

For the purpose of the present document, the following terms and definitions given in 3GPP TS 22.280 [76] apply:

**Functional alias**

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

### 6.2.1 SDP offer generation

The SDP offer shall contain one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control or the pre-established session call control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity and a pre-established session call control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control or the pre-established session call control shall be used, for the offered media plane control channel;

NOTE 1: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

a) the port number for the media stream selected; and

b) the codec(s) and media parameters and attributes with the following clarification:

i) if the MCPTT client is initiating a call to a group identity;

ii) if the <preferred-voice-encodings> element is present in the group document retrieved by the group management client as specified in 3GPP TS 24.381 [31] containing an <encoding> element with a "name" attribute; and

iii) if the MCPTT client supports the encoding name indicated in the value of the "name" attribute;

then the MCPTT client:

i) shall insert the value of the "name" attribute in the <encoding name> field of the "a=rtpmap" attribute as defined in IETF RFC 4566 [12];

c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and

d) if the MCPTT client is initiating a call with implicit floor request:

i) may include an "a=ssrc" attribute as specified in IETF RFC 5576 [77];

3) if floor control shall be used during the session, shall include an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12 for a media-floor control entity and a pre-established session call control entity, consisting of:

a) the port number for the media plane control channel selected as specified in 3GPP TS 24.380 [5]; and

b) the 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14;

NOTE 2: The same media plane control channel is used for transport of messages associated with the floor control, the pre-established session call control and the MBMS bearer management.

3A) if pre-established session call control shall be used during the session without floor control, shall include an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12 for a pre-established session call control entity, consisting of:

a) the port number for the media plane control channel selected as specified in 3GPP TS 24.380 [5]; and

b) the 'fmtp' attribute set to value "mc\_no\_floor\_ctrl" as specified in 3GPP TS 24.380 [5] clause 14; and

4) if end-to-end security is required for a private call and the SDP offer is not for establishing a pre-established session, shall include the MIKEY-SAKKE I\_MESSAGE in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

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

###### 6.3.2.1.1.1 On-demand session

This subclause is referenced from other subclauses.

The SDP offer is generated based on the received SDP offer. The SDP offer generated by the participating MCPTT function:

1) shall contain only one SDP media-level section for MCPTT speech as contained in the received SDP offer; and

2) shall contain an SDP media-level section for one media-floor control entity, if present in the received SDP offer.

When composing the SDP offer according to 3GPP TS 24.229 [4], the participating MCPTT function:

1) shall replace the IP address and port number for the offered media stream in the received SDP offer with the IP address and port number of the participating MCPTT function, if required;

NOTE 1: Requirements can exist for the participating MCPTT function to be always included in the path of the offered media stream, for example: for the support of features such as MBMS, lawful interception and recording. Other examples can exist.

2) shall replace the IP address and port number for the offered media plane control channel, if any, in the received SDP offer with the IP address and port number of the participating MCPTT function; and

NOTE 2: If the participating MCPTT function and the controlling MCPTT function or the participating MCPTT function and the non-controlling MCPTT function are in the same MCPTT server, and the participating MCPTT function does not have a dedicated IP address or a dedicated port number for media floor control or media stream, the replacement of the IP address or the port number is omitted.

3) shall contain an "a=key-mgmt" attribute field with a "mikey" attribute value, if present in the received SDP offer.

###### 6.3.2.1.1.2 Pre-established session

This subclause is referenced from other subclauses.

When composing an SDP offer according to 3GPP TS 24.229 [4], the participating MCPTT function:

1) shall use the IP address of the participating MCPTT function for MCPTT speech from the SDP negotiated during the pre-established session establishment;

2) shall use the IP address of the participating MCPTT function for the offered media plane control channel from the SDP negotiated during the pre-established session establishment, if present in the received SDP offer and if it is offered for a media-floor control entity;

3) shall contain only one SDP media-level section for MCPTT speech obtained from the SDP negotiated during the pre-established session establishment consisting of:

a) the port number for the MCPTT speech; and

b) the codec(s), media parameters and attributes as in the SDP negotiated during the pre-established session establishment;

4) shall include the media-level section of the offered media plane control channel from the SDP negotiated during the pre-established session establishment, if any media-floor control entity is offered consisting of:

a) the media plane control channel parameters as in the SDP negotiated during the pre-established session establishment; and

b) the port number for the selected media plane control channel selected as specified in 3GPP TS 24.229 [4]; and

5) shall contain an "a=key-mgmt" attribute field with a "mikey" attribute value if present in the received SDP offer.

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

###### 6.3.2.1.2.1 On-demand session

When composing the SDP answer according to 3GPP TS 24.229 [4], the participating MCPTT function:

1) shall replace the IP address and port number in the received SDP answer with the IP address and port number of the participating MCPTT function, for the accepted media stream in the received SDP offer, if required; and

NOTE 1: Requirements can exist for the participating MCPTT function to be always included in the path of the offered media stream, for example: for the support of features such as MBMS, lawful interception and recording. Other examples can exist.

2) shall replace the IP address and port number in the received SDP answer with the IP address and port number of the participating MCPTT function, for the accepted media plane control channel, if present in the received SDP offer.

NOTE 2: If the participating MCPTT function and the controlling MCPTT function or the participating MCPTT function and the non-controlling MCPTT function are in the same MCPTT server, and the participating MCPTT function does not have a dedicated IP address or a dedicated port number for media floor control or media stream, the replacement of the IP address or the port number is omitted.

###### 6.3.2.1.2.2 Pre-established session establishment

When composing the SDP answer according to 3GPP TS 24.229 [4], the participating MCPTT function:

1. shall set the IP address and port number to those of the participating MCPTT function for each accepted media stream from the list contained in the received SDP offer and for each accepted media stream in the received SDP offer; and

2. shall set the IP address and port number to those of the participating MCPTT function, for the accepted media plane control channel, if present in the received SDP offer.

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

##### 6.3.3.1.1 SDP offer generation

The SDP offer is generated based on the received SDP offer. The SDP offer generated by the controlling MCPTT function:

1) when initiating a new MCPTT session the SDP offer;

a) shall contain only one SDP media-level section for MCPTT speech media stream as contained in the received SDP offer; and

b) shall contain an SDP media-level section for one media-floor control entity, if present in the received SDP offer; and

2) when adding a new MCPTT user to an existing MCPTT Session, the SDP offer shall contain the media stream currently used in the MCPTT session.

When composing the SDP offer according to 3GPP TS 24.229 [4], the controlling MCPTT function:

1) shall replace the IP address and port number for the offered media stream in the received SDP offer with the IP address and port number of the controlling MCPTT function;

2) for the MCPTT speech media stream, shall include all media-level attributes from the received SDP offer;

3) shall replace the IP address and port number for the offered media plane control channel, if any, in the received SDP offer with the IP address and port number of the controlling MCPTT function; and

4) for the offered media plane control channel, shall include the offered media floor control entity 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14.

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

##### 6.3.3.2.1 SDP answer generation

When composing the SDP answer according to 3GPP TS 24.229 [4], the controlling MCPTT function:

1) for the accepted media stream in the received SDP offer:

a) shall replace the IP address and port number in the received SDP offer with the IP address and port number of the controlling MCPTT function; and

2) for the accepted media plane control channel, if present in the received SDP offer:

a) shall replace the IP address and port number in the received SDP offer with the IP address and port number of the controlling MCPTT function, for the accepted media plane control channel, if present in the received SDP offer; and

b) shall include 'fmtp' attributes as specified in 3GPP TS 24.380 clause 14.

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

##### 6.3.4.1.1 SDP offer generation

The SDP offer is generated based on the received SDP offer. The SDP offer generated by the non-controlling MCPTT function of an MCPTT group:

1) shall include only one SDP media-level section for MCPTT speech as contained in the received SDP offer; and

2) shall include an SDP media-level section for one media-floor control entity, if present in the received SDP offer.

When composing the SDP offer according to 3GPP TS 24.229 [4], the non-controlling MCPTT function of an MCPTT group:

1) shall replace the IP address and port number for the offered media stream in the received SDP offer with the IP address and port number of the non-controlling MCPTT function;

2) shall include all media-level attributes from the received SDP offer;

3) shall replace the IP address and port number for the offered media plane control channel, if any, in the received SDP offer with the IP address and port number of the non-controlling MCPTT function; and

4) shall include the offered media plane control channel 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14.

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

##### 6.3.4.2.1 SDP answer generation

When composing the SDP answer according to 3GPP TS 24.229 [4], the non-controlling MCPTT function of an MCPTT group:

1) for the accepted media stream in the received SDP offer:

a) shall replace the IP address and port number in the received SDP offer with the IP address and port number of the non-controlling MCPTT function; and

2) for the accepted media plane control channel, if present in the received SDP offer:

a) shall replace the IP address and port number in the received SDP offer with the IP address and port number of the non-controlling MCPTT function; and

b) shall include 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14.

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

##### 11.1.2.3.1 Originating procedures

Upon receipt of a "SIP INVITE request for originating participating MCPTT function" for the private call with SDP offer not including media-level section for media-floor control entity, the participating MCPTT function shall consider it as the request for the private call without floor control and shall follow the procedures as specified in subclause 11.1.1.3.1.1 for an on-demand session.

Upon receipt of a "SIP REFER request for a pre-established session" for the private call with SDP offer not including media-level section for media-floor control entity but including media-level section for a pre-established session call control entity as determined by the presence of the 'fmtp' attribute set to value "mc\_no\_floor\_ctrl" as specified in 3GPP TS 24.380 [5] clause 14, the participating MCPTT function shall consider it as the request for the private call without floor control and shall follow the procedures as specified in subclause 11.1.1.3.1.2 for initiation using a pre-established session.

\* \* \* \* \* \* END CHANGE \* \* \* \* \* \*