**3GPP TSG-CT WG1 Meeting #131-eC1-21xxxx**

**Electronic meeting, 19-27 August 2021 (was C1-214138)**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.379** | **CR** | **0731** | **rev** | **1** | **Current version:** | **17.3.1** |  |
|  | | | | | | | | |
| *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:*** | Private Call Forwarding | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | FirstNet, Kontron | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eMONASTERY2 | | | | |  | ***Date:*** | | | 19 August 2021 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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 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) Rel-17 (Release 17)  Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Private call forwarding, as defined by SA6, currently supports only a single forwarding for cases of no-answer and manual input. The reasoning is that in case of failure of private call forwarding, the call initiator is notified and can call someone else. However, who should be called instead is information that the originating side generally does not have. Instead, the destination/terminating user/client is better aware of who should be called if they are not available.  In cases of emergency communications, automatic multiple private call forwardings may be the difference in saving a life. The calling user can be kept informed of the status and targets of the multiple forwardings and can cancel the private call attempt at any time should they need to do so.  In this direction, several improvements can be made to the private call forwarding feature:   * The total number of call forwardings allowed should include all call forwardings, not just immediate forwardings. The current stage 2 text only allows a single forwarding as a result of no-answer or manual input. The limit on call forwardings should apply to the full set of call forwarding attempts that may be made, regardless of the reason. * The target client/participating MCPTT function can include a human readable display name along with the forwarding target. This will allow the originating client to provide better status of the private call attempt to the originating MCPTT user, permitting the originating MCPTT user to either allow the attempts to continue or to interrupt them and cancel the call attempt.   A request was made by RAN5 that all <anyExt> elements be added to the XML schema for the mcptt-ino-+xml MIME body. Since there are changes to the private call forwarding elements that would also have to be placed in the schema, all schema changes to support the RAN5 request are also included. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * The total number of call forwardings allowed includes all call forwardings, not just immediate forwardings. * The target client/participating MCPTT function can include a human readable display name along with the forwarding target. This will allow the originating client to provide better status of the private call attempt to the originating MCPTT user. * The MCPTT client can change or query the private call forwarding setttings. * The participating function can provide the private call settings to the client upon service registration. * All <anyExt> elements are added to the mcptt-info+xml schema. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The improvements in private call forwarding provided in this CR will not be available and will be very difficult to implement in a backward compatible manner in a future release.  The <anyExt> elements described in the semantics for the mcptt-ino-+xml MIME body will not be in the XML schema as requested by RAN5. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.1, 6.2.0.1, 6.3.1.3, 6.3.2.5, 6.3.2.6, 11.1.1.2.1.1, 11.1.1.2.2.1, 11.1.1.3.1.1, 11.1.1.3.2, 11.1.1.4.2, 11.1.9.1, 11.1.9.2.1, 11.1.9.2.2, 11.1.9.2.3 (new), 11.1.9.2.3.1 (new), 11.1.9.2.3.2 (new), 11.1.9.3.1, 11.1.9.3.2, 11.1.9.3.3 (new), 11.1.9.3.3.1 (new), 11.1.9.3.3.2 (new), 11.1.9.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | NOTE: Necessary changes to subclauses F.1.2 and F.1.3 are included in TS 24.379 CR 0730 (C1-214131 and any revisions) to avoid conflicting CRs covering the same subclauses. That CR and this CR must both be approved together. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev 1:   * Improved the discussion on the cover sheet. * Removed an unnecessary "and" in 6.3.2.6 step 1) c) iii). * An "and" is inserted in 6.3.2.6 at the end of step 1) c) vi). * In 6.3.2.6, bullet 1) e) is renumbered to 1) d). | | | | | | | | |

**\* \* \* \* \* 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.

**Forwarded-by-client:** The MCPTT client to whom a private call has been placed and who has requested that the private call be forwarded either through settings for immediate call forwarding at its participating MCPTT function or through manual input.

**Forwarded-calling-client:** The originating MCPTT client who has made a private call attempt that is being forwarded.

**Forwarded-to-client:** The terminating MCPTT client to whom a private call attempt is being forwarded.

**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.

**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; and

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.

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 \* \* \* \* \***

### 4.4.2 Warning texts

The text string included in a Warning header field consists of an explanatory text preceded by a 3-digit text code, according to the following format in Table 4.4.2-1.

Table 4.4.2-1 ABNF for the Warning text

warn-text =/ DQUOTE mcptt-warn-code SP mcptt-warn-text DQUOTE

mcptt-warn-code = DIGIT DIGIT DIGIT

mcptt-warn-text = \*( qdtext | quoted-pair )

Table 4.4.2-2 defines the warning texts that are defined for the Warning header field when a Warning header field is included in a response to a SIP INVITE request as specified in clause 4.4.1.

Table 4.4.2-2: Warning texts defined for the Warning header field

|  |  |  |
| --- | --- | --- |
| Code | Explanatory text | Description |
| 100 | function not allowed due to <detailed reason> | The function is not allowed to this user.  The <detailed reason> will be either "group definition", "access policy", "local policy", "user authorisation" or "pre-established session not supported", or can be a free text string. |
| 101 | service authorisation failed | The service authorisation of the MCPTT ID against the IMPU failed at the MCPTT server. |
| 102 | too many simultaneous affiliations | The MCPTT user already has N2 maximum number of simultaneous affiliations (see <MaxAffiliationsN2> element of user profile configuration document). |
| 103 | maximum simultaneous MCPTT group calls reached | The number of maximum simultaneous MCPTT group calls supported for the MCPTT user has been exceeded. |
| 104 | isfocus not assigned | A controlling MCPTT function has not been assigned to the MCPTT session. |
| 105 | subscription not allowed in a broadcast group call | Subscription to the conference event package rejected during a group call initiated as a broadcast group call. |
| 106 | user not authorised to join chat group | The MCPTT user is not authorised to join this chat group. |
| 107 | user not authorised to make private calls | The MCPTT user is not authorised to make private calls. |
| 108 | user not authorised to make chat group calls | The MCPTT user is not authorised to make chat group calls. |
| 109 | user not authorised to make prearranged group calls | The MCPTT user is not authorised to make group calls to a prearranged group. |
| 110 | user declined the call invitation | The MCPTT user declined to accept the call. |
| 111 | group call proceeded without all required group members | The required members of the group did not respond within the acknowledged call time, but the call still went ahead. |
| 112 | group call abandoned due to required group members not part of the group session | The group call was abandoned, as the required members of the group did not respond within the acknowledged call time. |
| 113 | group document does not exist | The group document requested from the group management server does not exist. |
| 114 | unable to retrieve group document | The group document exists on the group management server but the MCPTT server was unable to retrieve it. |
| 115 | group is disabled | The group has the <disabled> element set to "true" in the group management server. |
| 116 | user is not part of the MCPTT group | The group exists on the group management server but the requesting user is not part of this group. |
| 117 | the group identity indicated in the request is a prearranged group | The group id that is indicated in the request is for a prearranged group, but did not match the request from the MCPTT user. |
| 118 | the group identity indicated in the request is a chat group | The group id that is indicated in the request is for a chat group, but did not match the request from the MCPTT user. |
| 119 | user is not authorised to initiate the group call | The MCPTT user identified by the MCPTT ID is not authorised to initiate the group call. |
| 120 | user is not affiliated to this group | The MCPTT user is not affiliated to the group. |
| 121 | user is not authorised to join the group call | The MCPTT user identified by the MCPTT ID is not authorised to join the group call. |
| 122 | too many participants | The group call has reached its maximum number of participants. |
| 123 | MCPTT session already exists | Inform the MCPTT user that the group call is currently ongoing. |
| 124 | maximum number of private calls reached | The maximum number of private calls allowed at the MCPTT server for the MCPTT user has been reached. |
| 125 | user not authorised to make private call with automatic commencement | The MCPTT user is not authorised to make a private call with automatic commencement. |
| 126 | user not authorised to make private call with manual commencement | The MCPTT user is not authorised to make a private call with manual commencement. |
| 127 | user not authorised to be called in private call | The called MCPTT user is not allowed to be part of a private call. |
| 128 | isfocus already assigned | The MCPTT server owning an MCPTT group received a SIP INVITE request destined to the MCPTT group from another MCPTT server already assigned as the controlling MCPTT function and the MCPTT server owning the MCPTT group does not support mutual aid or supports trusted mutual aid but does not authorise trusted mutual aid. |
| 136 | authentication of the MIKEY-SAKKE I\_MESSAGE failed | The MCPTT client's application of the procedures of 3GPP TS 33.180 [78] to authenticate the received I\_MESSAGE fails. |
| 137 | the indicated group call does not exist | The participating MCPTT function cannot find an ongoing group session associated with the received MCPTT session identity. |
| 138 | subscription of conference events not allowed | The controlling MCPTT function could not allow the MCPTT user to subscribe to the conference event package. |
| 139 | integrity protection check failed | The integrity protection of an XML MIME body failed. |
| 140 | unable to decrypt XML content | The XML content cannot be decrypted. |
| 141 | user unknown to the participating function | The participating function is unable to associate the public user identity with an MCPTT ID. |
| 142 | unable to determine the controlling function | The participating function is unable to determine the controlling function for the group call or private call. |
| 143 | not authorised to force auto answer | The calling user is not authorised to force auto answer on the called user. |
| 144 | user not authorised to call this particular user | The calling user is not authorised to call this particular called user. |
| 145 | unable to determine called party | The participating function was unable to determine the called party from the information received in the SIP request. |
| 146 | T-PF unable to determine the service settings for the called user | The service settings have not been uploaded by the terminating client to the terminating participating server. |
| 147 | user is authorized to initiate a temporary group call | The non-controlling MCPTT function has authorized a request from the controlling MCPTT function to authorize a user to initiate an temporary group session. |
| 148 | group is regrouped | The group hosted by a non-controlling function is part of a temporary group session as the result of the group regroup function. |
| 149 | SIP-INFO request pending | The MCPTT client needs to wait for a SIP-INFO request with specific content, before taking further action. |
| 150 | invalid combinations of data received in MIME body | The MCPTT client included invalid combinations of data in the SIP request. |
| 151 | user not authorised to make a private call call-back request | The MCPTT user is not authorised to make a private call call-back request. |
| 152 | user not authorised to make a private call call-back cancel request | The MCPTT user is not authorised to make a private call call-back cancel request. |
| 153 | user not authorised to call any of the users requested in the first-to-answer call | All users that were invited in the first-to-answer call cannot be involved in a private call with the inviting user. |
| 154 | user not authorised to make ambient listening call | The MCPTT user is not authorised to make an ambient listening call. |
| 155 | user not authorised to change user's selected group | The MCPTT user is not authorised to change the selected group of the targeted user. |
| 156 | user not authorised to originate a first-to-answer call | The MCPTT user is not authorised to make a first-to-answer call. |
| 157 | user not authorised to request a remotely initiated group call | The MCPTT user is not authorised to request a remotely initiated group call. |
| 158 | user not authorised to request a remotely initiated private call | The MCPTT user is not authorised to request a remotely initiated private call. |
| 159 | user not authorised to be called by this originating user | The called user is not authorised to receive a call by this originating user. |
| 160 | user not authorised to request creation of a regroup | The user is not authorised to request creation of a regroup. |
| 161 | user not authorised to request removal of a regroup | The user is not authorised to request removal of a regroup. |
| 162 | group call abandoned due to required group members not affiliated | The group call was abandoned as the required number of affiliated group members is not met or some required members are not affiliated. |
| 163 | the group identity indicated in the request does not exist | The server determines that the group identity indicates a user or group regroup based on a preconfigured group that does not exist. |
| 164 | maximum number of service authorizations reached | The number of maximum simultaneous service authorizations for the MCPTT user has been reached. |
| 165 | group ID for regroup already in use | The group ID proposed by the client for the user/group regroup based on a preconfigured group is already in use. |
| 166 | constituent group is in an emergency call state | The proposed constituent group cannot be added to the temporary group because there is a call on the constituent group that is in an emergency state. |
| 167 | call is not allowed on the preconfigured group | Calls are not allowed on this group that is administratively designated for preconfigured group use only. |
| 168 | alert is not allowed on the preconfigured group | Alerts are not allowed on this group that is administratively designated for preconfigured group use only. |
| 169 | user is not authorised to remove regroup in an emergency state | The MCPTT user is not authorised to remove a regroup that is in an in-progress emergency state. |
| 170 | user not authorised to make a private call transfer request | The MCPTT user is not authorised to make a private call transfer request. |
| 171 | functional alias not allowed to call this particular functional alias | The calling user is not authorised to call this particular functional alias by using this activated functional alias |
| 172 | functional alias not allowed to be called from this functional alias | The called functional alias is not authorised to receive a call from the originating user using this particular Functional Alias |
| 173 | user not authorised to make a private call forwarding request | The MCPTT user is not authorized to use MCPTT private call forwarding |
| 174 | maximum number of allowed forwardings exceeded | The maximum number of allowed call forwardings has been exceeded |
| 175 | call is forwarded | The MCPTT private call that is requested to be established is released, and a new MCPTT private call is originated to the target of the call forwarding |
| xxx | user is not allowed to forward private calls to this MCPTT ID | The MCPTT ID requested by the client to be used as the call forwarding target for private calls is not included in the <AllowedMCPTTIdsForCallForwarding> list element of the client's user profile. |
| yyy | user is not allowed to forward private calls to this functional alias | The functional alias requested by the client to be used as the call forwarding target for private calls is not included in the <AllowedFunctionalAliasesForCallForwarding> list element of the client's user profile. |

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

#### 6.2.0.1 SIP MESSAGE request

The MCPTT client needs to distinguish between the following SIP MESSAGE requests:

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml" and including an XML body containing a Location root element containing a Configuration element. Such requests are known as "SIP MESSAGE request for location report configuration" in the present document;

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml" and including an XML body containing a Location root element containing a Request element. Such requests are known as "SIP MESSAGE request for location report request" in the present document;

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "private-call-call-back-request". Such requests are known as "SIP MESSAGE request for private call call-back request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "private-call-call-back-cancel-request". Such requests are known as "SIP MESSAGE request for private call call-back cancel request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "private-call-call-back-response". Such requests are known as "SIP MESSAGE request for private call call-back response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "private-call-call-back-cancel-response". Such requests are known as "SIP MESSAGE request for private call call-back cancel response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "group-selection-change-request". Such requests are known as "SIP MESSAGE request for group selection change request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "group-selection-change-response". Such requests are known as "SIP MESSAGE request for group selection change response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "remotely-initiated-group-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated group call request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "remotely-initiated-private-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated private call request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/mikey" and a CSB-ID containing a CSK-ID. Such requests are known as "SIP MESSAGE request for CSK download for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcptt-info> root element containing the <mcptt-Params> element and an <emergency-alert-area-ind> element. Such requests are known as "SIP MESSAGE request for notification of entry into or exit from an emergency alert area";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcptt-info> root element containing the <mcptt-Params> element and an <group-geo-area-ind> element. Such requests are known as "SIP MESSAGE request for notification of entry into or exit from a group geographic area";

- SIP MESSAGE requests routed to the MCPTT client with the Request-URI set to a public service identity of the MCPTT user that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "create". Such requests are known as "SIP MESSAGE request to the MCPTT client to request creation of a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the MCPTT client with the Request-URI set to a public service identity of the MCPTT user that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the MCPTT client to request removal of a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "transfer-private-call-request". Such requests are known as "SIP MESSAGE request for transfer private call request for terminating client";

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call response for terminating client".

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "forward-private-call-request". Such requests are known as "SIP MESSAGE request for forwarding private call request for forwarded-calling-client";

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call response for forwarded-by-client"; and

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "forward-private-call-settings-response". Such requests are known as "SIP MESSAGE request for providing private call forwarding settings at the participating function".

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

#### 6.3.1.3 SIP MESSAGE request

The MCPTT server needs to distinguish between the following SIP MESSAGE request for originations and terminations:

- SIP MESSAGE requests routed to the participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] with the Request-URI set to the MBMS public service identity of the participating MCPTT function. Such requests are known as "SIP MESSAGE request for an MBMS listening status update" in the procedures in the present document;

- SIP MESSAGE request routed to the participating MCPTT function as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml" and including an XML body containing a Location root element containing a Report element. Such requests are known as "SIP MESSAGE request for location reporting" in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing a <mcptt-Params> element containing an <emergency-ind> element or an <alert-ind> element. Such requests are known as "SIP MESSAGE request for emergency notification for originating participating MCPTT function" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the terminating participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing a <mcptt-Params> element containing an <emergency-ind> element or an <alert-ind> element. Such requests are known as "SIP MESSAGE request for emergency notification for terminating participating MCPTT function" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing a <mcptt-Params> element containing an <emergency-ind> element or an <alert-ind> element. Such requests are known as "SIP MESSAGE request for emergency notification for controlling MCPTT function" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-request" or "private-call-call-back-cancel-request", or with the <response-type> element set to a value of "private-call-call-back-response" or "private-call-call-back-cancel-response". Such requests are known as "SIP MESSAGE request for private call call-back for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-request" or "private-call-call-back-cancel-request", or with the <response-type> element set to a value of "private-call-call-back-response" or "private-call-call-back-cancel-response".. Such requests are known as "SIP MESSAGE request for private call call-back for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-request". Such requests are known as "SIP MESSAGE request for private call call-back request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-cancel-request". Such requests are known as "SIP MESSAGE request for private call call-back cancel request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "private-call-call-back-response" or "private-call-call-back-cancel-response". Such requests are known as "SIP MESSAGE request for private call call-back responses for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "group-selection-change-request" or with the <response-type> element set to a value of "group-selection-change-response". Such requests are known as "SIP MESSAGE request for group-selection-change for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "group-selection-change-request" or with the <response-type> element set to a value of "group-selection-change -response". Such requests are known as "SIP MESSAGE request for group-selection-change for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "group-selection-change-request". Such requests are known as "SIP MESSAGE request for group selection change request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "group-selection-change-response". Such requests are known as "SIP MESSAGE request for group selection change response for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-group-call-request" or with the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-group-call-request" or with the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-group-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated group call request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call response for controlling MCPTT function"; and

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-private-call-request" or with the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-private-call-request" or with the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-private-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated private call request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call response for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the originating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to the originating participating MCPTT function to request creation of a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the originating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <users-for-regroup> element. Such requests are known as "SIP MESSAGE request to the originating participating MCPTT function to request creation of a user regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the originating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the originating participating MCPTT function to remove a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the termination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to the terminating participating MCPTT function to create a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the termination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the terminating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create"and a non-empty <users-for-regroup> element. Such requests are known as "SIP MESSAGE request to the terminating participating MCPTT function to create a user regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the termination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the terminating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-info+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the terminating participating MCPTT function to remove a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to the controlling MCPTT function to request creation of a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <users-for-regroup> element. Such requests are known as "SIP MESSAGE request to the controlling MCPTT function to request creation of a user regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup +xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the controlling MCPTT function to remove a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to a non-controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the non-controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to a non-controlling MCPTT function to request creation of a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the non-controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the non-controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the non-controlling MCPTT function to remove a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "transfer-private-call-request" or with the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "transfer-private-call-request" or with the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "transfer-private-call-request". Such requests are known as "SIP MESSAGE request for transfer private call request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call response for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-request" or with the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-request" or with the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call request for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-settings-request". Such requests are known as "SIP MESSAGE request for changing and querying forwarding private call settings for originating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-request". Such requests are known as "SIP MESSAGE request for forwarding private call request for controlling MCPTT function"; and

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call response for controlling MCPTT function".

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

#### 6.3.2.5 Handling of the no answer timer (TNP1)

When the terminating participating MCPTT function receives a SIP INVITE request to initiate a private call:

1) if the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

2) if the <call-forwarding-on> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

3) if a <call-forwarding-condition> element exists in the <call-forwarding-condition-list> element in the <call-forwarding-info> element and has a value of "No-Answer" as specified in 3GPP TS 24.484 [50];

then the terminating participating MCPTT function shall start timer TNP1 (call forwarding no answer timer) with a timer value as described in Annex B.2.2, prior to sending out a SIP INVITE request inviting the called MCPTT user to a private call.

When the terminating participating MCPTT function receives a SIP 200 (OK) response to the SIP INVITE request, from the called MCPTT user before expiry of TNP1 (call forwarding no answer timer), then the terminating participating MCPTT function shall stop timer TNP1 (call forwarding no answer timer) and send a SIP 200 (OK) response to the controlling MCPTT function.

After expiry of timer TNP1 (call forwarding no answer timer) the terminating participating MCPTT function:

1) shall generate and send a SIP CANCEL request to the called MCPTT user, according to IETF RFC3261 [24], to cancel the SIP dialog for which the no answer timer has expired;

2) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 480 (Temporarily Unavailable) response including warning text set to "175 call is forwarded" in a Warning header field as specified in clause 4.4;

3) shall generate a SIP MESSAGE request as described in clause 6.3.2.6 to trigger the call forwarding of a private call and shall include in the application/vnd.3gpp.mcptt-info+xml MIME body;

a) the <forwarding-reason> element set to a value of "No-Answer"; and

4) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4].

Upon receipt of a SIP 2xx response to the outgoing SIP MESSAGE request, the terminating participating MCPTT function shall follow the procedures specified in 3GPP TS 24.229 [4].

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

#### 6.3.2.6 Generating a SIP MESSAGE request for call forwarding of a private call

This clause is referenced from other procedures.

This clause describes the procedures for generating a SIP MESSAGE request for call forwarding of a private call.

The terminating participating MCPTT function

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications;

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with an <anyExt> element containing:

i) the <request-type> element set to a value of "forward-private-call-request";

ii) the <mcptt-called-party-id> element set to the value of the <call-forwarding-target-id> previously specified by the terminating client, if one exists, or if a <call-forwarding-target-id> value previously specified by the terminating client does not exist, then to the value of the <call-forwarding-target-URI> element of the <call-forwarding-target> element of the <call-forwarding-info> element in the MCPTT user profile document in 3GPP TS 24.484 [50]);

iii) if the terminating client previously specified a <call-forwarding-target-id> value and indicated that the value was a functional alias, then with the <call-to-functional-alias-ind> set to "true";

iv) if the terminating client did not previously specify a <call-forwarding-target-id> value (see subclause 11.1.9.2.3.1), then if the <target-is-functional-alias> element of the <call-forwarding-target> element of the <call-forwarding-info> element is present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and is set to the value "true", then with the <call-to-functional-alias-ind> set to "true"; otherwise,with the <call-to-functional-alias-ind> set to "false";

NOTE: For a call forwarding to a MCPTT ID the value of the <mcptt-called-party-id> is the MCPTT ID of the target user, while for call forwarding to a functional alias the value is the functional alias of the target user.

v) the <forwarded-by-client-ID> element set to the MCPTT ID of the forwarded-by-client; and

vi) the <forwarded-by-client-display-name> element set to the display name associated with the forwarded-by-client; and

d) shall insert in the SIP MESSAGE request a MIME resource-lists body with the MCPTT ID of the forwarded-calling-client, according to the rules and procedures of IETF RFC 5366 [20];

2) shall set the Request-URI of the outgoing SIP MESSAGE request to the public service identity of the controlling MCPTT function associated with the call transfer service for the forwarded-calling-client;

3) shall include a P-Asserted-Identity header field set to the public service identity of terminating participating MCPTT function;

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6]; and

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), into the P-Asserted-Service header field of the outgoing SIP MESSAGE request.

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

###### 11.1.1.2.1.1 Client originating procedures

Upon receiving a request from an MCPTT user to establish an MCPTT private call, or upon accepting a request to perform a private call transfer or a private call forwarding, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

2) if the MCPTT user has requested the origination of a first-to-answer call, if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", the MCPTT client shall inform the MCPTT user and shall exit this procedure;

3) if the MCPTT user has requested the origination of an MCPTT emergency private call or is originating an MCPTT private call and the MCPTT emergency state is already set, the MCPTT client:

a) shall, if this is an authorised request for an MCPTT emergency private call as determined by the procedures of clause 6.2.8.3.1.1, comply with the procedures in clause 6.2.8.3.2; and

b) should, if this is an unauthorised request for an MCPTT emergency private call as determined in step a) above, indicate to the MCPTT user that they are not authorised to initiate an MCPTT emergency private call;

4) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

5) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

6) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

7) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

8) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

9) for the establishment of a private call shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the invited MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

a) if the private call being initiated is the result of a private call transfer request or a private call forward request, the MCPTT ID of the invited MCPTT user is the value of the <mcptt-called-party-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

10) for the establishment of a first-to-answer call shall insert in the SIP INVITE request according to rules and procedures of IETF RFC 5366 [20] a MIME resource-lists body with:

a) the MCPTT IDs of the potential target MCPTT users; or

b) the URI of the functional alias to be called;

NOTE 1: The MCPTT client indicates whether a list of MCPTT IDs or a functional alias is to be called as specified in step 15) b).

11) if an end-to-end security context needs to be established and if the MCPTT user is initiating a private call then:

a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

b) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the invited user as determined by the procedures of clause 6.2.8.3.9 and a time related parameter as described in 3GPP TS 33.180 [78];

e) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78]; and

g) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78]; and

f) shall sign the MIKEY-SAKKE I\_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78];

12) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in clause 6.2.1 and with a media stream of the offered media-floor control entity;

13) if implicit floor control is required, shall comply with the conditions specified in clause 6.4 and:

a) if the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true"; and

b) if location information has not yet been included in the SIP re-INVITE request;

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element;

14) if the MCPTT user is initiating a private call then:

a) if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18];

b) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

i) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18]; and

ii) if manual commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Manual" according to the rules and procedures of IETF RFC 5373 [18]; and

c) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element:

i) with the <session-type> element set to a value of "private"; and

ii) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, with the <functional-alias-URI> set to the URI of the used functional alias;

NOTE 2: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in clause 9A.2.1.3.

14A) if the MCPTT client initiates the private call upon accepting a request to perform a private call transfer then:

a) shall include in the SIP INVITE request a Priv-Answer-Mode header field with the same value as in the MCPTT call to be transferred according to the rules and procedures of IETF RFC 5373 [18]; and

b) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element:

i) with the <session-type> element set to a value of "private";

ii) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, with the <functional-alias-URI> set to the URI of the used functional alias; and

iii) with the <call-transfer-ind> element set to "true";

14B) if the MCPTT client initiates the private call upon accepting a request to perform a private call forwarding then:

a) shall include in the SIP INVITE request a Priv-Answer-Mode header field with the same value as in the MCPTT call to be forwarded according to the rules and procedures of IETF RFC 5373 [18];

b) shall cache the <forwarding-list> until a final response for the SIP INVITE is received; and

c) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

i) the <session-type> element set to a value of "private";

ii) if the "SIP MESSAGE request for forwarding private call request for forwarded-calling-client" contained a <call-to-functional-alias-ind> element set to "true", then the <functional-alias-URI> set to the value of the <mcptt-called-party-id> element in the received "SIP MESSAGE request for forwarding private call request for forwarded-calling-client";

iii) the <call-forwarding-ind> element set to "true"; and

iv) the <forwarding-list> element;

15) if the MCPTT user is initiating a first-to-answer call shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element;

a) with the <session-type> element set to a value of "first-to-answer";

b) with the <call-to-functional-alias-ind> set to "true" if the MCPTT client is aware of active functional aliases and an active functional alias is to be called or "false" otherwise; and

c) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, with the <functional-alias-URI> set to the URI of the used functional alias;

NOTE 3: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in clause 9A.2.1.3.

16) if the MCPTT emergency private call state is set to either "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted" or the MCPTT emergency private priority state for this private call is set to "MEPP 2: in-progress", the MCPTT client shall comply with the procedures in clause 6.2.8.3.3; and

17) shall send SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) may indicate the progress of the session establishment to the inviting MCPTT user.

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) if the sent SIP INVITE request was for the origination of a first-to-answer call and the SDP answer contained in the received SIP 200 (OK) response contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

a) shall extract the MCPTT ID of the sender of the SIP 200 (OK) response from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78];

b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [78];

d) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails:

i) if the sent SIP INVITE request was a request for an MCPTT emergency private call and if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested, the MCPTT client:

A) shall set the MCPTT emergency private call state to "MEPC 1: emergency-pc-capable";

B) if the MCPTT emergency private priority state of the private call is "MEPP 3: confirm-pending" shall set the MCPTT emergency private priority state of the private call to "MEPP 1: no-emergency"; and

C) if the sent SIP request for an MCPTT emergency private call contained an application/vnd.3gpp.mcptt-info+xml MIME body with an <alert-ind> element set to a value of "true", shall set the MCPTT private emergency alert state to "MPEA 1: no-alert". and

ii) shall release the session as specified in the procedures of clause 11.1.3.1.1.1 with the following clarifications:

A) shall include in the SIP BYE request an application/vnd.3gpp.mcptt-info+xml MIME body containing a <release-reason> element set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed"; and

B) shall skip the remaining steps in the present clause; and

e) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

i) shall extract and decrypt the encapsulated PCK using the originating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [46];

NOTE 4: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

3) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted", shall perform the actions specified in clause 6.2.8.3.4; and

3A) may notify the answer state to the user (i.e. "Unconfirmed" or "Confirmed") if received in the P-Answer-State header field; and

4) shall notify the user that the call has been successfully established.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested"; or

2) if the MCPTT emergency private call state is set to "MEPC 3: emergency-pc-granted";

the MCPTT client shall perform the actions specified in clause 6.2.8.3.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing session, the MCPTT client shall follow the actions specified in clause 6.2.8.3.7.

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

###### 11.1.1.2.1.2 Client terminating procedures

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

Editor's Note: [eMONASTERY2, CR 0709] If and how the MCPTT client handles forwarding of private MCPTT calls based on manual user input for automatic commencement is FFS.

The MCPTT client:

1) may reject the SIP INVITE request if any of the following conditions are met:

a) MCPTT client is already occupied in another session and the number of simultaneous sessions exceeds <MaxCall>, the maximum simultaneous MCPTT session for private call, as specified in TS 24.484 [50];

b) MCPTT client does not have enough resources to handle the call; or

c) any other reason outside the scope of this specification;

otherwise, continue with the rest of the steps.

NOTE 1: If the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <emergency-ind> element set to a value of "true", the participating MCPTT function can choose to accept the request.

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCPTT function either with appropriate reject code as specified in 3GPP TS 24.229 [4] and warning texts as specified in clause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure according to <allow-failure-restriction> as specified in 3GPP TS 24.484 [50] and skip the rest of the steps of this clause;

3) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency private call and:

i) should display the MCPTT ID of the originator of the MCPTT emergency private call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information; and

b) if the session was established with a <session-type> of "first-to-answer"; shall temporarily save the current value of the MCPTT emergency private priority (MEPP) state;

NOTE 2: The current value of the MCPTT emergency private priority (MEPP) state needs to be temporarily saved because the MCPTT client may not be the one selected to terminate the first to answer emergency private call. Hence, the MCPTT client needs to be able to restore the MCPTT emergency private priority (MEPP) state to the saved value.

c) shall set the MCPTT emergency private priority state to "MEPP 2: in-progress" for this private call;

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78];

b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [78];

d) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKE I\_MESSAGE failed" in a Warning header field as specified in clause 4.4; and

e) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [78];

NOTE 3: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

5) if an end-to-end security context needs to be established and if the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request is set to "first-to-answer" then:

a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

b) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the originator of the SIP INVITE request as determined by the procedures of clause 6.2.8.3.9 and a time related parameter as described in 3GPP TS 33.180 [78];

e) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78];

f) shall add the MCPTT ID of the MCPTT user to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78]; and

NOTE 4: The initiator of the MIKEY-SAKKE I\_MESSAGE is in this case the terminating client from the perspective of the call.

g) shall sign the MIKEY-SAKKE I\_MESSAGE using the MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78];

6) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

7) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7A) may display to the MCPTT user the functional alias of the inviting MCPTT user, if provided;

7B) if the incoming SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element containing an <anyExt> element containing a <call-forwarding-ind> element set to the value "true", then:

a) if the <mcpttinfo> element containing the <mcptt-Params> element containing an <anyExt> element contains a <forwarding-list> element, may display to the MCPTT user the value of the <display-name> element of the last <entry-element> of the <forwarding-list> element as the displayable identity of the MCPTT user that has forwarded the private call to the MCPTT user;

8) if the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request is set to "first-to-answer":

a) shall notify the user of the incoming call;

b) shall not forward the first-to-answer call;

c) if the MCPTT user is busy on another call, shall send a SIP 486 (Busy Here) to the SIP INVITE request according to 3GPP TS 24.229 [4] and not continue with any further steps in this clause; and

d) if the MCPTT user does not answer the call within a time decided by the client implementation, the MCPTT client shall send a SIP 480 (Temporarily Unavailable) to the SIP INVITE request according to 3GPP TS 24.229 [4] and not continue with any further steps in this clause;

NOTE 5: In the conditions below, as the SIP layer implements the actions for commencement mode, it is assumed that the Answer-Mode or Priv-Answer-Mode header fields are set correctly in line with the setting of the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request.

9) shall perform the automatic commencement procedures specified in clause 6.2.3.1.1 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode;

b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client is willing to answer the call with automatic commencement mode; or

c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Auto"; and

10) shall perform the manual commencement procedures specified in clause 6.2.3.2.1 if either of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode;

b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; or

c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Manual".

Upon receiving the SIP CANCEL request cancelling a SIP INVITE request for which a dialog exists at the MCPTT client and a SIP 200 (OK) response has not yet been sent to the SIP INVITE request then the MCPTT client:

1) if the session was established with a <session-type> of "first-to-answer", may notify the MCPTT user of the cancellation of the call;

2) if a temporary MCPTT emergency private priority (MEPP) state value was saved in step 3) b) above:

a) shall restore the MCPTT emergency private priority (MEPP) state to the temporary MCPTT emergency private priority (MEPP) state value; and

b) shall discard the temporary MCPTT emergency private priority (MEPP) state value;

3) shall send a SIP 200 (OK) response to the SIP CANCEL request according to 3GPP TS 24.229 [4]; and

4) shall send a SIP 487 (Request Terminated) response to the SIP INVITE request according to 3GPP TS 24.229 [4].

Upon receiving a SIP BYE request for an established dialog, the MCPTT client:

1) if the session was established with a <session-type> of "first-to-answer" and:

a) if the received SIP BYE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <release-reason> element set to a value of "not selected for call" or "authentication of the MIKEY-SAKE I\_MESSAGE failed":

i) if a temporary MCPTT emergency private priority (MEPP) state value was saved in step 3) b) above, shall restore the MCPTT emergency private priority (MEPP) state to the temporary MCPTT emergency private priority (MEPP) state value saved in step 3) b) above; and

b) may notify the MCPTT user of the release of the call; and

2) shall follow the procedures in clause 11.1.4.2.

NOTE 6: The above conditions for SIP CANCEL and SIP BYE cover the case for a first-to-answer call where the MCPTT server has already established the private call with another MCPTT client and needs to immediately cancel or release the dialogs with other MCPTT clients.

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

###### 11.1.1.2.2.1 Client originating procedures

Upon receiving a request from an MCPTT user to establish an MCPTT private call within a pre-established session, or upon accepting a request to complete a private call transfer or a private call forwarding within a pre-established session, the MCPTT client shall generate a SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27], with the clarifications given below.

If the user requested the private call to be a first-to-answer call and if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", the MCPTT client shall inform the MCPTT user and shall exit this procedure.

If the MCPTT user is initiating a private call and an end-to-end security context needs to be established the MCPTT client:

1) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

2) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

3) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

4) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the invited user as determined by the procedures of clause 6.2.8.3.9 and a time related parameter as described in 3GPP TS 33.180 [78];

5) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78];

6) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78]; and

7) shall sign the MIKEY-SAKKE I\_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78].

The MCPTT client populates the SIP REFER request as follows:

1) shall include the Request-URI set to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

2) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

3) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

4) shall include the option tag "multiple-refer" in the Require header field;

5) may include a P-Preferred-Identity header field in the SIP REFER request containing a public user identity as specified in 3GPP TS 24.229 [4];

6) shall include a P-Preferred-Service header field set to the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), according to IETF RFC 6050 [9];

7) shall set the Refer-To header field of the SIP REFER request as specified in IETF RFC 3515 [25] with a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 [62] that points to an application/resource-lists MIME body as specified in IETF RFC 5366 [20], and with the Content-ID header field set to this "cid" URL;

8) for the initiation of a private call, shall include in the application/resource-lists MIME body a single <entry> element containing a "uri" attribute set to the MCPTT ID of the called user. If the private call being initiated is the result of a private call transfer request or a private call forward request, the MCPTT ID of the called MCPTT user is the value of the <mcptt-called-party-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request. This shall be extended with the following URI header fields:

NOTE 1: Characters that are not formatted as ASCII characters are escaped in the following parameters in the headers portion of the SIP URI.

a) if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18];

b) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

i) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include an Answer-Mode header field with the value "Automatic" according to rules and procedures of IETF RFC 5373 [18]; and

ii) if manual commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include an Answer-Mode header field with the value "Manual" according to rules and procedures of IETF RFC 5373 [18]; and

c) shall include in an hname "body" parameter:

i) if the SDP parameters of the pre-established session do not contain a media-level section of a media-floor control entity or if end-to-end security is required for the private call, an application/sdp MIME body containing the SDP parameters of the pre-established session according to 3GPP TS 24.229 [4] with the clarifications given in clause 6.2.1. If implicit floor control is required and the pre-established session was not established with an implicit floor request, then the application/sdp MIME body shall contain an implicit floor request as specified in clause 6.4; and

ii) an application/vnd.3gpp.mcptt-info MIME body:

A) with the <session-type> element set to "private";

B) if the MCPTT client needs to include an active functional alias in the SIP REFER request, with the <functional-alias-URI> set to the URI of the used functional alias;

C) if the MCPTT client initiates the private call upon accepting a request to perform a private call transfer then shall include the <call-transfer-ind> set to "true"; and

D) if the MCPTT client initiates the private call upon accepting a request to perform a private call forwarding then:

I) shall cache the <forwarding-list> until a final response for the SIP REFER is received;

II) shall include the <call-forwarding-ind> set to "true"; and

III) shall include the <forwarding-list> element;

NOTE 2: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in clause 9A.2.1.3.

9) for an initiation of a first-to-answer call, shall include in the application/resource-lists MIME body an <entry> element for each of the targeted MCPTT users, with each <entry> element containing a "uri" attribute set to the MCPTT ID of the targeted user, extended with hname "body" parameter in the headers portion of the SIP URI or a single <entry> element containing a "uri" attribute set to the URI of the functional alias, extended with hname "body" parameter in the headers portion of the SIP URI containing:

NOTE 3: Characters that are not formatted as ASCII characters are escaped in the following parameters in the headers portion of the SIP URI.

a) if the SDP parameters of the pre-established session do not contain a media-level section of a media-floor control entity, an application/sdp MIME body containing the SDP parameters of the pre-established session according to 3GPP TS 24.229 [4] with the clarification given in clause 6.2.1. If implicit floor control is required and the pre-established session was not established with an implicit floor request, then the application/sdp MIME body shall contain an implicit floor request as specified in clause 6.4; and

b) an application/vnd.3gpp.mcptt-info MIME body:

i) with the <session-type> element set to "first-to-answer";

ii) with the <call-to-functional-alias-ind> set to "true" if the MCPTT client is aware of active functional aliases and an active functional alias is to be called or "false" otherwise; and

iii) if the MCPTT client needs to include an active functional alias in the SIP REFER request, with the <functional-alias-URI> set to the URI of the used functional alias;

10) if the MCPTT user has requested the origination of an MCPTT emergency private call or is originating an MCPTT private call and the MCPTT emergency state is already set, the MCPTT client:

a) if this is an authorised request for an MCPTT emergency private call as determined by the procedures of clause 6.2.8.3.1.1, shall comply with the procedures in clause 6.2.8.3.2; and

b) if this is an unauthorised request for an MCPTT emergency private call as determined in step a) above, should indicate to the MCPTT user that they are not authorised to initiate an MCPTT emergency private call;

11) if the MCPTT emergency private priority state for this call is set to "MEPP 2: in-progress", the MCPTT client shall comply with the procedures in clause 6.2.8.3.3;

12) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session; and

13) if:

a) implicit floor control is required;

b) the pre-established session was not established with an implicit floor request; and

c) location information has not yet been included in the SIP REFER request;

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element.

The MCPTT client shall send the SIP REFER request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a final SIP 2xx response to the SIP REFER request the MCPTT client shall interact with media plane as specified in 3GPP TS 24.380 [5].

On receiving a SIP 4xx response, SIP 5xx response or a SIP 6xx response to the SIP REFER request for an MCPTT emergency private call:

1) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested", the MCPTT client shall perform the actions specified in clause 6.2.8.3.5; and

2) shall skip the remaining steps.

Upon receipt of a SIP re-INVITE request within the pre-established session targeted by the sent SIP REFER request, the MCPTT client:

1) if the sent SIP REFER request was a request to originate a first-to-answer call:

a) if the received SIP re-INVITE request contains an SDP offer including an a=key-mgmt attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

i) shall extract the MCPTT ID of the sender of the SIP 200 (OK) response from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78];

ii) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

iii) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [78];

iv) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails:

A) shall set the MCPTT emergency private call state to "MEPC 1: emergency-pc-capable";

B) if the MCPTT emergency private priority state of the private call is "MEPP 3: confirm-pending" shall set the MCPTT emergency private priority state of the private call to "MEPP 1: no-emergency";

C) if the sent SIP request for an MCPTT emergency private call contained an application/vnd.3gpp.mcptt-info+xml MIME body with an <alert-ind> element set to a value of "true", shall set the MCPTT private emergency alert state to "MPEA 1: no-alert"; and

D) shall release the session as specified in the procedures of clause 11.1.3.1.2.1 with the following clarifications:

I) shall include in the SIP BYE request an application/vnd.3gpp.mcptt-info+xml MIME body containing a <release-reason> element set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed"; and

II) shall skip the remaining steps in the present clause; and

v) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

A) shall extract and decrypt the encapsulated PCK using the originating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

B) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [78];

NOTE 4: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

2) if the sent SIP REFER request was a request for an MCPTT emergency private call:

a) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted":

i) shall set the MCPTT emergency private priority state of the call to "MEPP 2: in-progress" if it was not already set;

ii) shall set the MCPTT emergency private call state to "MEPC 3: emergency-pc-granted"; and

iii) if the MCPTT private emergency alert state is set to "MPEA 2: emergency-alert-confirm-pending" and:

A) if the SIP re-INVITE request contains an <alert-ind> element set to a value of "true" or does not contain an <alert-ind> element, shall set the MCPTT private emergency alert state to " MPEA 3: emergency-alert-initiated "; or

B) if the SIP re-INVITE request contains an <alert-ind> element set to a value of "false", shall set the MCPTT private emergency alert state to "MPEA 1: no-alert ";

3) shall check if a Resource-Priority header field is included in the incoming SIP re-INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

4) shall accept the SIP re-INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

5) shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session; and

6) shall send the SIP 200 (OK) response towards the participating MCPTT function according to rules and procedures of 3GPP TS 24.229 [4].

On call release by interaction with the media plane as specified in clause 9.2.2 of 3GPP TS 24.380 [5] if the sent SIP REFER request was a request for an MCPTT emergency private call, the MCPTT client shall perform the procedures specified in clause 6.2.8.1.18.

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

###### 11.1.1.3.1.1 On-demand private call and first-to-answer call

Upon receipt of a "SIP INVITE request for originating participating MCPTT function" containing an application/vnd.3gpp.mcptt-info+xml MIME body with the <session-type> element set to a value of "private" or "first-to-answer", the participating MCPTT function:

1) may reject the SIP INVITE request depending on the value of the Resource-Priority header field if the Resource-Priority header field is included in the received SIP INVITE request according to rules and procedures specified in IETF RFC 4412 [29] and shall not continue with the rest of the steps;

2) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and shall not continue with the rest of the steps;

NOTE 1: If the received SIP INVITE request contains an emergency indication set to a value of "true", the participating MCPTT function can choose to accept the request.

NOTE 2: If the received SIP INVITE request contains an emergency indication set to a value of "true", the participating MCPTT function can choose to allow an exception to the limit on the number of private calls and accept the request.

3) shall determine the MCPTT ID of the calling user from public user identity in the P-Asserted-Identity header field of the SIP INVITE request;

NOTE 3: The MCPTT ID of the calling user is bound to the public user identity at the time of service authorisation, as documented in clause 7.3.

4) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP INVITE request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps;

5) shall:

a) if the <session-type> is set to "private", determine that the call is a private call; and

b) if the <session-type> is set to "first-to-answer", determine that the call is a first-to-answer-call;

6) if the call is a:

a) private call, determine the public service identity of the controlling MCPTT function for the private call service associated with the originating user's MCPTT ID identity; or

b) first-to-answer, determine the public service identity of the controlling MCPTT function for the first-to-answer call service associated with the originating user's MCPTT ID identity;

7) if the participating MCPTT function is unable to identify the controlling MCPTT function for the private call service or first-to-answer call service associated with the originating user's MCPTT ID identity, it shall reject the SIP INVITE request with a SIP 404 (Not Found) response with the warning text "142 unable to determine the controlling function" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps;

8) if the incoming SIP INVITE request does not contain an application/resource-lists MIME body, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

9) if the call is a private call and the incoming SIP INVITE request contains an application/resource-lists MIME body with more than one <entry> element, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

10) if the <allow-private-call> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), indicating that the user identified by the MCPTT ID is not authorised to initiate private calls, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response, with warning text set to "107 user not authorised to make private calls" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

11) if the call is a private call and:

a) if the received SIP INVITE request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] with the value "Auto" and the <allow-automatic-commencement> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) indicating that the user identified by the MCPTT ID is not authorised to initiate private call with automatic commencement, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "125 user not authorised to make private call with automatic commencement" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

b) if the received SIP INVITE request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] with the value "Manual" and the <allow-manual-commencement> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), indicating that the user identified by the MCPTT ID is not authorised to initiate private call with manual commencement, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "126 user not authorised to make private call with manual commencement" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

c) if the received SIP INVITE request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" and the originating participating MCPTT function has no cached mapping of the MCPTT ID of the transferred user and the MCPTT ID of the transfer target, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "170 user not authorised to make a private call transfer request" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

d) if the received SIP INVITE request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" then:

i) if the originating participating MCPTT function has no cached mapping of the MCPTT ID of the forwarded user and the MCPTT ID of the target MCPTT user, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "173 user not authorised to make a private call forwarding request" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

ii) shall count the number of entries in the <forwarding-list> element. If the count is equal to or greater than the value of the <max-forwardings> element of the <anyExt> element of the <on-network> element of the MCPTT user profile, then shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "174 maximum number of allowed forwardings reached" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

e) if:

i) the received SIP INVITE request contains no <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP INVITE request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false"; and

ii) if the received SIP INVITE request contains no <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP INVITE request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false":

then:

i) if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

A) if the "uri" attribute of the <entry> element of the application/resource-lists MIME body does not match with one of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

B) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

A) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "144 user not authorised to call this particular user" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

12) if the call is a first-to-answer call and if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if:

i) the "uri" attribute of each and every <entry> element of the application/resource-lists MIME body does not match with any of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

ii) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

i) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "153 user not authorised to call any of the users requested in the first-to-answer call" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

12A) if the call is a first-to-answer call, the received SIP INVITE request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body and with the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true", and the <ListOfAllowedFAsToCall> element exists with one or more <entry> elements within the entry of the FunctionalAliasList element corresponding to the calling <functional-alias-URI> in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the "uri" attribute of the <entry> element of the application/resource-lists MIME body does not match with any of the <entry> elements of the <ListOfAllowedFAsToCall> element of the entry within the FunctionalAliasList element corresponding to the calling <functional-alias-URI> of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "171 functional alias not allowed to call this particular functional alias" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

13) if the call is a first-to-answer call and:

a) if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "156 user not authorised to originate a first-to-answer call" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

14) shall validate the media parameters and if the MCPTT speech codec is not offered in the "SIP INVITE request for originating participating MCPTT function" shall reject the request with a SIP 488 (Not Acceptable Here) response. Otherwise, continue with the rest of the steps;

15) shall generate a SIP INVITE request as specified in clause 6.3.2.1.3 with the following clarifications:

a) if the conditions in step 12) above were executed and the participating MCPTT function determined that the "uri" attribute of only one of the <entry> elements of the application/resource-lists MIME body matched with an <entry> element of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) then the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request generated in clause 6.3.2.1.3 is set to "private"; and

b) if the conditions in step 12) above were executed, then only the <entry> element(s) of the application/resource-lists MIME body that have a "uri" attribute that matched with an <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) are included in the application/resource-lists MIME body in the SIP INVITE request generated in clause 6.3.2.1.3;

16) shall set the Request-URI to the public service identity of the controlling MCPTT function hosting the private call service or first-to-answer call service as determined by step 6);

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

18) if the call is a private call and:

a) if a Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the incoming SIP INVITE request with a value of "Manual", shall not include a Priv-Answer-Mode header field in the outgoing SIP INVITE request;

b) if the <allow-force-auto-answer> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), and the Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the incoming SIP INVITE request with a value of "Auto", shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "143 not authorised to force auto answer" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

c) if the <allow-force-auto-answer> element of the <ruleset> element is present in the MCPTT user profile document with the value "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function, and the Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the incoming SIP INVITE request with a value of "Auto", shall include the Priv-Answer-Mode header field set to a value of "Auto" in the outgoing SIP INVITE request;

d) if a Priv-Answer-Mode header field containing the value of "Auto" has not been included in the outgoing SIP INVITE request as specified in step 17) above and the incoming "SIP INVITE request for originating participating MCPTT function" contained an Answer-Mode header field as specified in IETF RFC 5373 [18], then shall populate the Answer-Mode header field of the outgoing SIP INVITE request with the contents of the Answer-Mode header field from the incoming "SIP INVITE request for originating participating MCPTT function";

19) shall include in the SIP INVITE request an SDP offer based on the SDP offer in the received "SIP INVITE request for originating participating MCPTT function", as specified in clause 6.3.2.1.1.1;

19a) if the received SIP INVITE request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body, then shall check if the status of the functional alias is activated for the MCPTT ID. If the functional alias status is activated, then the participating MCPTT function shall set the <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body in the outgoing SIP INVITE request to the received value, otherwise shall not include a <functional-alias-URI> element;

NOTE 4: The participating MCPTT server learns the functional alias state for an MCPTT ID from procedures specified in clause 9A.2.2.2.7.

20) shall include a Resource-Priority header field according to rules and procedures of 3GPP TS 24.229 [4] set to the value indicated in the Resource-Priority header field if included in the SIP INVITE request from the MCPTT client;

21) if, according to clause 6.4, the SIP INVITE request is regarded as being received with an implicit request to grant the floor to the originating MCPTT client, the participating MCPTT function:

if:

a) the incoming SIP INVITE request contained an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall copy the application/vnd.3gpp.mcptt-location-info+xml MIME body from the received SIP INVITE request into the outgoing SIP INVITE request;

otherwise:

if:

a) the participating MCPTT function has available the location of the originating MCPTT client; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

22) shall forward the SIP INVITE request, according to 3GPP TS 24.229 [4].

Upon receiving a SIP 180 (Ringing) response, the participating MCPTT function:

1) shall generate a SIP 180 (Ringing) response to the SIP INVITE request as specified in the clause 6.3.2.1.5.1;

2) shall include the P-Asserted-Identity header field as received in the incoming SIP 180 (Ringing) response;

3) shall include Warning header field(s) received in the incoming SIP 180 (Ringing) response; and

4) shall send the SIP 180 (Ringing) response to the inviting MCPTT client according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response, the participating MCPTT function:

1) shall generate a SIP 200 (OK) response as specified in the clause 6.3.2.1.5.2;

2) shall include in the SIP 200 (OK) response an SDP answer as specified in the clause 6.3.2.1.2.1;

3) shall include Warning header field(s) received in the incoming SIP 200 (OK) response;

4) shall include the P-Asserted-Identity header field received in the incoming SIP 200 (OK) response into the outgoing SIP 200 (OK) response;

5) shall include an MCPTT session identity mapped to the MCPTT session identity provided in the Contact header field of the received SIP 200 (OK) response;

5A) shall include the answer state into the P-Answer-State header field of the outgoing SIP 200 (OK) response, if received in the P-Answer-State header field of the incoming SIP 200 (OK) response;

6) shall send the SIP 200 (OK) response to the inviting MCPTT client according to 3GPP TS 24.229 [4];

7) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

8) shall start the SIP session timer according to rules and procedures of IETF RFC 4028 [7].

The participating MCPTT function shall forward any other SIP response that does not contain SDP, including any MIME bodies contained therein, along the signalling path to the originating network according to 3GPP TS 24.229 [4].

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

###### 11.1.1.3.1.2 Private call and first-to-answer call initiation using pre-established session

Upon receipt of a "SIP REFER request for a pre-established session", with:

1) the Refer-To header field containing a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 [62] that points to an application/resource-lists MIME body as specified in IETF RFC 5366 [20] containing one or more <entry> element(s) with a "uri" attribute containing a SIP URI set to the MCPTT ID of the called user(s);

2) an hname body" parameter in the headers portion of the SIP URI specified above containing an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element set to "private" or "first-to-answer"; and

3) a Content-ID header field set to the "cid" URL;

the participating function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP REFER request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and shall not continue with the rest of the steps;

NOTE 1: If the application/vnd.3gpp.mcptt-info MIME body included in the SIP REFER request as described at the top of the present clause contains an <emergency-ind> element or <imminentperil-ind> element set to a value of "true", and this is an authorised request for originating a priority call as determined by clause 6.3.2.1.8.1, the participating MCPTT function can according to local policy choose to accept the request.

2) shall determine the MCPTT ID of the calling user from public user identity in the P-Asserted-Identity header field of the SIP REFER request;

3) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP REFER request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps;

4) if the received SIP REFER request does not contain an application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

5) if the received SIP REFER request contains an application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field with more than one <entry> element each with an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element:

a) not set to "first-to-answer", shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps; or

b) set to "first-to-answer", determine that the call is a first-to-answer call;

6) if the received SIP REFER request contains an application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field with only one <entry> element with an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element:

a) not set to "private", shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps; or

b) set to "private", determine that the call is a private call;

7) if the call is a:

a) private call, shall determine the public service identity of the controlling MCPTT function for the private call service associated with the originating user's MCPTT ID; or

b) first-to-answer call, shall determine the public service identity of the controlling MCPTT function for the first-to-answer call service associated with the originating user's MCPTT ID;

NOTE 2: How the participating MCPTT server discovers the public service identity of the controlling MCPTT function associated with the private call service or first-to-answer service of the calling user is out of scope of the current document.

8) if the participating MCPTT function is unable to identify the controlling MCPTT function for the private call service or first-to-answer call service associated with the originating user's MCPTT ID, it shall reject the REFER request with a SIP 404 (Not Found) response with the warning text "142 unable to determine the controlling function" in a Warning header field as specified in clause 4.4, and shall not continue with any of the remaining steps;

9) if the <allow-private-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false", indicating that the user identified by the MCPTT ID is not authorised to initiate private calls, shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response to the SIP REFER request, with warning text set to "107 user not authorised to make private calls" in a Warning header field as specified in clause 4.4;

10) if the call is a private call:

a) if the received SIP REFER request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Auto" contained in the headers portion of the SIP URI present in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, and the <allow-automatic-commencement> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false" (indicating that the user identified by the MCPTT ID is not authorised to initiate private call with automatic commencement), shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "125 user not authorised to make private call with automatic commencement" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

b) if the received SIP REFER request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Manual" contained in the headers portion of the SIP URI present in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, and the <allow-manual-commencement> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false" (indicating that the user identified by the MCPTT ID is not authorised to initiate private call with manual commencement), shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "126 user not authorised to make private call with manual commencement" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

c) if the <allow-force-auto-answer> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false", and the SIP REFER request contained a Priv-Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Auto" in the headers portion of the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "143 not authorised to force auto answer" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

d) if the received SIP REFER request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" and the originating participating MCPTT function has no cached mapping of the MCPTT ID of the transferred user and the MCPTT ID of the transfer target, shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "170 user not authorised to make a private call transfer request" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps;

e) if the received SIP REFER request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" then:

i) if the originating participating MCPTT function has no cached mapping of the MCPTT ID of the forwarded user and the MCPTT ID of the target MCPTT user, shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "173 user not authorised to make a private call forwarding request" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

ii) shall count the number of entries in the <forwarding-list> element. If the count is equal to or greater than the value of the <max-forwardings> element of the <anyExt> element of the <on-network> element of the MCPTT user profile, then shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "174 maximum number of allowed forwardings reached" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

f) if:

i) the received SIP REFER request contains no <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP REFER request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false"; and

ii) if the received SIP REFER request contains no <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP REFER request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false";

then:

i) if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

A) if the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field not match with one of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

B) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

A) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "144 user not authorised to call this particular user" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

11) if the call is a first-to-answer call and if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) the "uri" attribute of each and every <entry> element of the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field does not match with any of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

b) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

a) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "153 user not authorised to call any of the users requested in the first-to-answer call" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

11A) if the call is a first-to-answer call, the received SIP REFER request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body and the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true", the <ListOfAllowedFAsToCall> element exists with one or more <entry> elements within the entry of the FunctionalAliasList element corresponding to the calling <functional-alias-URI> in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the "uri" attribute of the <entry> element of the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field does not match with any of the <entry> elements of the <ListOfAllowedFAsToCall> element of the entry within the FunctionalAliasList element corresponding to the calling <functional-alias-URI> of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "171 functional alias not allowed to call this particular functional alias" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

12) if the call is a first-to-answer call and:

a) if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "156 user not authorised to originate a first-to-answer call" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

13) if the "SIP REFER request for a pre-established session" contained a Refer-Sub header field containing "false" value and a Supported header field containing "norefersub" value, shall handle the SIP REFER request as specified in 3GPP TS 24.229 [4], IETF RFC 3515 [25] as updated by IETF RFC 6665 [26], and IETF RFC 4488 [22] without establishing an implicit subscription;

14) shall generate a final SIP 200 (OK) response to the "SIP REFER request for a pre-established session" according to 3GPP TS 24.229 [4];

NOTE 3: In accordance with IETF RFC 4488 [22], the participating MCPTT function inserts the Refer-Sub header field containing the value "false" in the SIP 200 (OK) response to the SIP REFER request to indicate that it has not created an implicit subscription.

15) shall send the response to the "SIP REFER request for a pre-established session" towards the MCPTT client according to 3GPP TS 24.229 [4];

16) shall generate a SIP INVITE request as specified in clause 6.3.2.1.4 with the following clarifications:

a) if the conditions in step 11) above were executed and the participating MCPTT function determined that the "uri" attribute of only one of the <entry> elements of the application/resource-lists MIME body matched with an <entry> element of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) then the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request generated in clause 6.3.2.1.4 is set to "private"; and

b) if the conditions in step 11) above were executed, then only the <entry> element(s) of the application/resource-lists MIME body that have a "uri" attribute that matched with an <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) are included in the application/resource-lists MIME body in the SIP INVITE request generated in clause 6.3.2.1.4;

17) shall set the Request-URI of the SIP INVITE request to the public service identity of the controlling MCPTT function hosting the private call service or first-to-answer call service for the calling MCPTT user as determined above in step 7);

18) if the call is a private call:

a) if the SIP REFER request contained a Priv-Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Manual" in the headers portion of the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, shall copy the Priv-Answer-Mode header field from the incoming SIP REFER request to the outgoing SIP INVITE request;

b) if the <allow-force-auto-answer> element of the <ruleset> element is present in the MCPTT user profile document with the value "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function, and the Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the headers portion of the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, with a value set to "Auto", shall copy the Priv-Answer-Mode header field to the outgoing SIP INVITE request; and

c) if a Priv-Answer-Mode header field containing the value of "Auto" has not been copied to the outgoing SIP INVITE request as specified in step 16) above, and the incoming SIP REFER request contained an Answer-Mode header field in the headers portion of the SIP URI in the application/resource-lists referenced by a "cid" URL in the Refer-To header field, then copy the Answer-Mode header field to the outgoing SIP INVITE request;

19) if the received SIP REFER request contained a Resource-Priority header field, shall include in the outgoing SIP INVITE request a Resource-Priority header field according to rules and procedures of 3GPP TS 24.229 [4] set to the value indicated in the Resource-Priority header field of the received SIP REFER request;

NOTE 4: The participating MCPTT function will leave verification of the Resource-Priority header field to the controlling MCPTT function.

19a) if the call is a private call and if the received SIP REFER request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body, then shall check if the status of the functional alias is activated for the MCPTT ID. If the functional alias status is activated, then the participating MCPTT function shall set the <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body in the outgoing SIP INVITE request to the received value, otherwise shall not include a <functional-alias-URI> element;

19b) if, according to clause 6.4, the SIP REFER request is regarded as being received with an implicit request to grant the floor to the initiating MCPTT client:

if:

a) the incoming SIP REFER request contained an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall copy the application/vnd.3gpp.mcptt-location-info+xml MIME body from the received SIP REFER request into the outgoing SIP INVITE request;

otherwise:

if:

a) the participating MCPTT function has available the location of the initiating MCPTT client; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

20) shall forward the SIP INVITE request according to 3GPP TS 24.229 [4].

Upon receiving SIP provisional responses for the SIP INVITE request the participating MCPTT function:

1) shall discard the received SIP responses without forwarding them.

Upon receiving a SIP 200 (OK) response for the SIP INVITE request the participating MCPTT function:

1) if:

a) the received SIP 2xx response was in response to a request for an MCPTT private call; or

b) the received SIP 2xx response was in response to a SIP INVITE request for a first-to-answer call which did not include an a=key-mgmt "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE in the SDP answer;

then:

a) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) if the received SIP 2xx response was in response to a request for an MCPTT emergency private call and does not contain a Warning header field as specified in clause 4.4 with the warning text containing the mcptt-warn-code set to "149":

a) shall generate a SIP re-INVITE request to be sent towards the MCPTT client within the pre-established session as specified in clause 6.3.2.1.8.6;

b) shall send the SIP re-INVITE request towards the MCPTT client within the pre-established session according to 3GPP TS 24.229 [4]; and

c) if the received SIP 2xx response was in response to a request for a first-to-answer call, upon receipt of a SIP 2xx response to the SIP re-INVITE, shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

3) if the received SIP 2xx response was in response to a SIP INVITE request for a first-to-answer call which was not a request for an MCPTT emergency private call and contains an SDP answer including an a=key-mgmt "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE, the participating MCPTT function:

a) shall generate a SIP re-INVITE request as specified in clause 6.3.2.1.8.7;

b) shall send the SIP re-INVITE request towards the originating MCPTT client according to 3GPP TS 24.229 [4]; and

c) upon receipt of a SIP 2xx response to the SIP re-INVITE, shall interact with the media plane as specified in 3GPP TS 24.380 [5].

Upon receiving a SIP INFO request from the controlling MCPTT function within the dialog of the SIP INVITE request for an MCPTT emergency private call, the participating MCPTT function shall:

1) shall send a SIP 200 (OK) response to the SIP INFO request to the controlling MCPTT function as specified in 3GPP TS 24.229 [4];

2) shall generate a SIP re-INVITE request to be sent towards the MCPTT client within the pre-established session as specified in clause 6.3.2.1.8.6; and

3) shall send the SIP re-INVITE request the MCPTT client according to 3GPP TS 24.229 [4].

Upon receipt of a SIP 4xx, 5xx or 6xx response to the above SIP INVITE request in step 20) the participating MCPTT function:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

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

##### 11.1.1.3.2 Terminating procedures

This clause covers both on demand session and pre-established session.

In the procedure in this clause a private call requested by an MCPTT user refers to a private call:

1) with no <call-transfer-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element or with a <call-transfer-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element and the value is set to "false"; and

2) with no <call-forwarding-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element or with a <call-forwarding-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element and the value is set to "false".

Upon receipt of a "SIP INVITE request for terminating participating MCPTT function", the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24], and shall not continue with the rest of the steps;

NOTE: If the received SIP INVITE request contains an emergency indication set to a value of "true", the participating MCPTT function can choose to accept the request.

2) shall check the presence of the isfocus media feature tag in the Contact header field and if it is not present then the participating MCPTT function shall reject the request with a SIP 403 (Forbidden) response with the warning text set to "104 isfocus not assigned" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

3) if the <session-type> element of the application/vnd.3gpp.mcptt-info+xml MIME body is set to "private" and the Answer-Mode Indication in the application/poc-settings+xml MIME body has not yet been received from the invited MCPTT client as defined in clause 7.3.3 or clause 7.3.4, shall reject the request with a SIP 480 (Temporarily Unavailable) response with the warning text set to "146 T-PF unable to determine the service settings for the called user" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

4

5) if a binding between the MCPTT ID and public user identity exists and if:

a) the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

b) the <call-forwarding-on> element exists in the MCPTT user profile document and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and the target MCPTT client has not indicated to the participating function that call forwarding immediate is disabled; and

c) a <call-forwarding-condition> element exists in the MCPTT user profile document with the value set to "Immediate" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 480 (Temporarily Unavailable) response including warning text set to "175 call is forwarded" in a Warning header field as specified in clause 4.4;

b) shall generate a SIP MESSAGE request as described in clause 6.3.2.6 to trigger the call forwarding of the private call and shall include in the application/vnd.3gpp.mcptt-info+xml MIME body;

i) shall set the <forwarding-reason> element to a value of "Immediate";

d) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4]; and

e) upon receipt of SIP 2xx response to the outgoing SIP MESSAGE requests, the participating MCPTT function shall follow the procedures specified in 3GPP TS 24.229 [4] and shall skip the rest of the steps;

6) if the binding between the MCPTT ID and public user identity does not exist and if the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), then:

a) if the participating MCPTT function has stored a call forwarding when the user is not available setting set to "true"; or

b) if the <call-forwarding-on> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and if a <call-forwarding-condition> element exists in a <call-forwarding-condition-list> element in a <call-forwarding-info> element in the MCPTT user profile document with the value set to "User-Not-Available" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 480 (Temporarily Unavailable) response including warning text set to "175 call is forwarded" in a Warning header field as specified in clause 4.4;

b) shall generate a SIP MESSAGE request as described in clause 6.3.2.6 to trigger the call forwarding of a private call and shall include in the application/vnd.3gpp.mcptt-info+xml MIME body;

c) shall set the <forwarding-reason> element to a value of "User-Not-Available";

d) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4]; and

e) Upon receipt of SIP 2xx response to the outgoing SIP MESSAGE requests, the participating MCPTT function shall follow the procedures specified in 3GPP TS 24.229 [4] and shall skip the rest of the steps;

7) if the binding between the MCPTT ID and public user identity does not exist, then the participating MCPTT function shall reject the SIP INVITE request with a SIP 404 (Not Found) response and shall not continue with the rest of the steps;

8) if the call is a private call requested by an MCPTT user and if the called user identified by the MCPTT ID is unable to participate in private calls as identified in the called user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the terminating participating MCPTT function, shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "127 user not authorised to be called in private call" in a Warning header field as specified in clause 4.4;

9) if the call is a private call requested by an MCPTT user and if the <session-type> element of the application/vnd.3gpp.mcptt-info+xml MIME body is set to "private" and if the <IncomingPrivateCallList> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request does not match with one of the <entry> elements of the <IncomingPrivateCallList> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

b) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to receive a private call by users not contained within the <entry> elements of the <IncomingPrivateCallList> element;

then:

a) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "159 user not authorised to be called by this originating user" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

10) if the call is a first-to-answer call, the received SIP INVITE request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body and the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true", the <ListOfAllowedFAsToBeCalledFrom> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the <called-functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request does not match with any of the <entry> elements of the <ListOfAllowedFAsToBeCalledFrom> element of the entry within the FunctionalAliasList element corresponding to the called functional alias of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

then:

a) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "172 functional alias not allowed to be called from this functional alias" in a Warning header field as specified in clause 4.4 and shall not continue with the rest of the steps;

Editor's Note: [eMONASTERY2, CR 0691] How the controlling MCPTT server adds and populates <called-functional-alias-URI> element for a first-to-answer-call is FFS.

11) if:

a) the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

b) the <call-forwarding-on> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

c) a <call-forwarding-condition> element exists in the MCPTT user profile document with the value set to "No-Answer" (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

d) the target MCPTT client has not indicated to the participating function that call forwarding no answer is disabled;

shall start timer TNP1 (call forwarding no answer timer) according to the conditions stated in clause 6.3.2.5.

12) shall perform the automatic commencement procedures specified in clause 6.3.2.2.5.1 and according to IETF RFC 5373 [18] if one of the following conditions are met:

a) "SIP INVITE request for terminating participating MCPTT function" contains an Answer-Mode header field with the value "Auto";

b) "SIP INVITE request for terminating participating MCPTT function" does not contain an Answer-Mode header field and the Answer-Mode Indication received in the application/poc-settings+xml MIME body received from the invited MCPTT client as per clause 7.3.3 or clause 7.3.4 is set to "auto-answer"; or

c) "SIP INVITE request for terminating participating MCPTT function" contains a Priv-Answer-Mode header field with the value "Auto"; and

13) shall perform the manual commencement procedures specified in clause 6.3.2.2.6.1 and according to IETF RFC 5373 [18] if either of the following conditions are met:

a) "SIP INVITE request for terminating participating MCPTT function" contains an Answer-Mode header field with the value "Manual";

b) "SIP INVITE request for terminating participating MCPTT function" does not contain an Answer-Mode header field and Answer-Mode Indication received in the application/poc-settings+xml MIME body received from the invited MCPTT client as per clause 7.3.3 or clause 7.3.4 is set to "manual-answer"; or

c) "SIP INVITE request for terminating participating MCPTT function" contains a Priv-Answer-Mode header field with the value "Manual".

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

##### 11.1.1.4.2 Terminating procedures

In the procedures in this clause:

1) <emergency–ind> refers to the <emergency-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

2) <alert–ind> refers to the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

3) <session-type> refers to the <session-type> element of an application/vnd.3gpp.mcptt-info+xml MIME body.

Upon receipt of:

- a "SIP INVITE request for controlling MCPTT function of a private call"; or

- a "SIP INVITE request for controlling MCPTT function of a first-to-answer call";

the controlling MCPTT function:

1) if the <session-type> in the SIP INVITE request is set to "private":

a) shall check whether the public service identity contained in the Request-URI is allocated for private call and perform the actions specified in clause 6.3.7.1 if it is not allocated and skip the rest of the steps; and

b) shall perform actions to verify the MCPTT ID of the inviting MCPTT user in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request, and authorise the request according to local policy, and if it is not authorised the controlling MCPTT function shall return a SIP 403 (Forbidden) response with the warning text as specified in "Warning header field" and skip the rest of the steps;

2) if the <session-type> in the SIP INVITE request is set to "first-to-answer" shall check whether the public service identity contained in the Request-URI is allocated for first-to-answer call and perform the actions specified in clause 6.3.7.1 if it is not allocated and skip the rest of the steps;

3) if the incoming SIP INVITE request does not contain an application/resource-lists MIME body shall reject the SIP INVITE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

4) if the <session-type> is set to "private" and the application/resource-lists MIME body contains more than one <entry> element, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

5) shall validate that the received SDP offer includes at least one media stream for which the media parameters and at least one codec or media format is acceptable by the controlling MCPTT function and if not, reject the request with a SIP 488 (Not Acceptable Here) response and skip the rest of the steps;

6) if received SIP INVITE request includes an <emergency-ind>, shall validate the request as described in clause 6.3.3.1.17;

7) if the received SIP INVITE request contains an unauthorised request for an MCPTT emergency private call as determined by clause 6.3.3.1.13.2:

a) shall reject the SIP INVITE request with a SIP 403 (Forbidden) response as specified in clause 6.3.3.1.14; and

b) shall send the SIP 403 (Forbidden) response as specified in 3GPP TS 24.229 [4] and skip the rest of the steps;

8) if a Resource-Priority header field is included in the received SIP INVITE request and if the Resource-Priority header field is set to the value indicated for emergency calls, shall reject the SIP INVITE request with a SIP 403 (Forbidden) response and skip the remaining steps if neither one of the following conditions are true:

a) the SIP INVITE request does not contain an authorised request for an MCPTT emergency call as determined in step 7 above; or

b) the originating MCPTT user is not in an in-progress emergency private call state with the targeted MCPTT user;

9) if:

a) the received SIP INVITE request contains an emergency indication set to a value of "true";

b) the originating MCPTT user is not in an in-progress emergency private call state with the targeted MCPTT user; and

c) if the <session-type> in the SIP INVITE request is set to "private";

then:

a) shall cache the information that the MCPTT user has initiated an MCPTT emergency private call to the targeted user; and

b) shall cache the information that the MCPTT user is in an in-progress emergency private call state with the targeted MCPTT user;

10) shall perform actions as described in clause 6.3.3.2.2;

11) shall allocate an MCPTT session identity for the MCPTT session; and

12) if the <session-type> in the received SIP INVITE request is set to "first-to-answer" and if the SIP INVITE request contained an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true":

a) shall identify the MCPTT ID(s) of the MCPTT user(s) that have activated the received functional alias by performing the actions specified in clause 9A.2.2.2.8; and

b) upon receipt of a SIP NOTIFY request generated as specified in clause 9A.2.2.3.8, shall invite the MCPTT user(s) listed in the application/pidf+xml MIME body of the SIP NOTIFY request as specified in clause 11.1.1.4.1;

otherwise shall invite the MCPTT user(s) listed in the MIME resource-lists body of received SIP INVITE request as specified in clause 11.1.1.4.1.

13) if the <session-type> in the received SIP INVITE request is set to "private" and if the SIP INVITE request contained an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true":

a) shall identify the MCPTT ID(s) of the MCPTT user(s) that have activated the received functional alias by performing the actions specified in clause 9A.2.2.2.8;

b) if the set of MCPTT IDs determined in step a) is empty, then shall reject the "SIP INVITE request for controlling MCPTT function of a private call" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

c) if the received SIP INVITE request contains a <call-forwarding-ind> element set to the value "true", shall select an MCPTT ID from the set determined in step a) that is not included in the <forwarding-list> element in the received SIP INVITE; otherwise, shall select an MCPTT ID from the set determined in step a); and

NOTE: When the private call is a call forwarding attempt, the exclusion of MCPTT IDs that are already in the <forwarding-list> prevents circular forwarding attempts.

d) if an MCPTT ID could not be selected in step c), then shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

shall invite the MCPTT user identified in step c) as specified in clause 11.1.1.4.1 with the following clarification:

1. based on local policy, the controlling MCPTT function decides whether to include the <call-forwarding-ind> element and the <forwarding-list> element in the outgoing SIP INVITE request.

Upon receiving a SIP 180 (Ringing) response and if the SIP 180 (Ringing) response or the SIP final response has not yet been sent to the inviting MCPTT client, the controlling MCPTT function:

1) if the SIP 180 (Ringing) response is associated with a SIP INVITE that contained a <session-type> set to "private", shall generate a SIP 180 (Ringing) response to the SIP INVITE request and send the SIP 180 (Ringing) response towards the inviting MCPTT client according to 3GPP TS 24.229 [4]; and

2) if the SIP 180 (Ringing) response is associated with a SIP INVITE that contained a <session-type> set to "first-to-answer", and no other SIP 180 (Ringing) responses have been received that are associated with a SIP INVITE that contained a <session-type> set to "first-to-answer", shall generate a SIP 183 (Session Progress) response to the SIP INVITE request and send the SIP 183 (Session Progress) response towards the inviting MCPTT client according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183 (Session Progress) response to the SIP INVITE request specified in clause 11.1.1.4.1 containing a P-Answer-State header field with the value "Unconfirmed" as specified in IETF RFC 4964 [34], if the <session-type> in the SIP INVITE request is set to "private", the controlling MCPTT function supports media buffering and the SIP final response is not yet sent to the inviting MCPTT client, the controlling MCPTT function:

1) shall generate a SIP 200 (OK) response to SIP INVITE request as specified in the clause 6.3.3.2.3.2;

2) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.1;

3) shall include a P-Answer-State header field with the value "Unconfirmed";

4) if the received SIP INVITE request contains an alert indication set to a value of "true" and this is an unauthorised request for an MCPTT emergency alert as specified in clause 6.3.3.1.13.1, shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

NOTE 0: This is the case when the MCPTT user's request for an MCPTT emergency private call was granted but the request for the MCPTT emergency alert was denied.

5) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

6) shall send the SIP 200 (OK) response towards the inviting MCPTT client according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response for the SIP INVITE request, the SIP dialog was established as a result of receiving a SIP INVITE request with a <session-type> element set to the value of "private" and the SIP final response has not yet been sent to the inviting MCPTT client, the controlling MCPTT function:

1) shall generate a SIP 200 (OK) response to the SIP INVITE request as specified in the clause 6.3.3.2.3.2 before continuing with the rest of the steps;

2) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.2;

3) if the received SIP INVITE request contains an alert indication set to a value of "true" and this is an unauthorised request for an MCPTT emergency alert as specified in clause 6.3.3.1.13.1, shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

NOTE 1: This is the case when the MCPTT user's request for an MCPTT emergency private call was granted but the request for the MCPTT emergency alert was denied.

4) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

NOTE 2: Resulting media plane processing is completed before the next step is performed.

5) shall send a SIP 200 (OK) response towards the inviting MCPTT client according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response for the SIP INVITE request, the SIP dialog was established as a result of receiving a SIP INVITE request with a <session-type> element set to the value of "first-to-answer" and the SIP final response has not yet been sent to the inviting MCPTT client the controlling MCPTT function:

1) shall generate a SIP 200 (OK) response to the SIP INVITE request as specified in the clause 6.3.3.2.3.2 before continuing with the rest of the steps;

2) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.1;

3) the received SIP INVITE request contains an emergency indication set to a value of "true":

a) shall cache the information that the MCPTT user has initiated an MCPTT emergency private call to the targeted user; and

b) shall cache the information that the MCPTT user is in an in-progress emergency private call state with the targeted MCPTT user;

4) if the received SIP INVITE request contains an alert indication set to a value of "true" and this is an unauthorised request for an MCPTT emergency alert as specified in clause 6.3.3.1.13.1, shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

NOTE 3: This is the case when the MCPTT user's request for an MCPTT emergency private call was granted but the request for the MCPTT emergency alert was denied.

5) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

NOTE 4: Resulting media plane processing is completed before the next step is performed.

6) shall send a SIP 200 (OK) response towards the inviting MCPTT client according to 3GPP TS 24.229 [4];

7) for all other MCPTT clients that were invited due to the controlling MCPTT function receiving a SIP INVITE request with a <session-type> element set to the value of "first-to-answer":

a) shall send a SIP BYE request to release a SIP dialog that has been established since the SIP 200 (OK) response was sent in step6) by following the procedures in clause 6.3.3.1.5 with the clarification that the SIP BYE request contain an application/vnd.3gpp.mcptt-info+xml MIME body including a <release-reason> element set to a value of "not selected for call";

b) shall generate and send a SIP CANCEL request according SIP IETF RFC 3261 [24], to cancel a SIP dialog that has not yet been established since the SIP 200 (OK) response was sent in step 6);

c) on receiving a SIP 200 (OK) to a SIP CANCEL request, shall wait to receive a SIP 487 (Request Terminated) to the original SIP INVITE request sent to the client; and

d) if a SIP 487 (Request Terminated) from the MCPTT client is not received within a time determined by the MCPTT server implementation, shall send a SIP BYE towards the MCPTT client by following the procedures in clause 6.3.3.1.5 with the clarification that the SIP BYE request contain an application/vnd.3gpp.mcptt-info+xml MIME body including a <release-reason> element set to a value of "not selected for call"; and

8) if not successful in cancelling or terminating SIP dialogs in step 7) above, may repeat the SIP CANCEL and SIP BYE requests.

Upon receiving a SIP ACK to the SIP 200 (OK) response sent towards the inviting MCPTT client, where the SIP 200 (OK) response was sent with a Warning header field as specified in clause 4.4 with the warning text containing the mcptt-warn-code set to "149", the controlling MCPTT function shall follow the procedures in clause 6.3.3.1.18.

The controlling MCPTT function shall forward any other SIP response that does not contain SDP, including any MIME bodies contained therein, along the signalling path to the originating network according to 3GPP TS 24.229 [4].

Upon receiving a SIP BYE request from the originating MCPTT client containing an application/vnd.3gpp.mcptt-info+xml MIME body containing a <release-reason> element set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed", the controlling MCPTT function:

1) if the received "SIP INVITE request for controlling MCPTT function of a first-to-answer call" contains an emergency indication set to a value of "true":

a) shall delete from cache the information that the MCPTT user has initiated an MCPTT emergency private call to the targeted user; and

b) shall delete from cache the information that the MCPTT user is in an in-progress emergency private call state with the targeted MCPTT user; and

2) shall follow the procedures in clause 11.1.3.3.1.

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

#### 11.1.9.1 General

Design of the private call forwarding feature:

1) The service configuration file provides general settings across the MCPTT system and contains:

a) the <max-forwardings> element to limit the number of private call forwardings for any particular private call attempt.

2) The MCPTT user profile provides static information for processing private call forwarding requests and contains:

a) the <call-forwarding-info> element under the on-network <anyExt> element that contains:

i) a <call-forwarding-no-answer-timeout> value specific to the MCPTT user;

ii) a list of conditions for which call forwarding can happen - zero or more of:

Immediate – the call is immediately forwarded;

No-Answer – the user is online, but does not answer before the timer expires;

Manual-Input – the user is online and manually requests that the call be forwarded; and

User-Not-Available – the user is not currently registered for the MCPTT service;

The "Immediate", "No-Answer", and "User-Not-Available" conditions can all be toggled by the MCPTT user.

iii) a default call forwarding target that can be overridden by the MCPTT user, including a displayable string (display name) and an indication whether the target is a functional alias;

b) a <call-forwarding-allowed> indicator; and

c) an <allow-call-forward-manual-input> indicator.

3) The mcptt-info+xml MIME body carries specific information about an MCPTT forwarding request and can include:

a) a <request-type> element set to "forward-private-call-request" that is used when the target participating function or client (the forwarded-by-client) wishes to notify the originating client (the forwarded-calling-client) that the call should be forwarded;

b) a <response-type> element set to "forward-private-call-response" that is used by the forwarded-calling-client to acknowledge the "forward-private-call-request";

c) a <forwarding-call-outcome> element included by the forwarded-calling-client to indicate to the old target client (forwarded-by-client) the outcome of the "forward-private-call-request";

c) a <call-forwarding-ind> boolean element that is used by the originating client to indicate to the originating participating function whether this private call request is a result of forwarding;

d) a <forwarding-list> element that is built by the originating client and consists of entries for each previously attempted target client. The originating client places a new entry in the list containing the failed target MCPTT ID (<mcptt-called-party-id>) that is included by the forwarded-by-client or the terminating participating function of the forwarded-by-client in the "forward-private-call-request";

e) a <forwarding-reason> element containing one of {"Immediate", "No-Answer", "Manual-Input" or "User-Not-Available"}. The originating client can use this to inform the calling MCPTT user of the progress and status of the private call attempt;

f) an <mcptt-called-party-id> element that is used to carry the identity of the forwarded-to-client (the new target client) from the forwarded-by-client (the old target client) or from the participating function serving the forwarded-by-client (in the case of "Immediate", "No-Answer", or "User-Not-Available" private call forwarding) to the forwarded-calling-client (the originating client); and

g) an <call-forwarding-target-display-name> element that is used to carry the display name of the forwarded-to-client (the new target client) from the forwarded-by-client (the old target client) or from the participating function serving the forwarded-by-client (in the case of "Immediate", "No-Answer", or "User-Not-Available" private call forwarding) to the forwarded-calling-client (the originating client).

4) The originating client is responsible for:

a) receiving a "forward-private-call-request" message and send a "forward-private-call-response" message;

b) determining whether the maximum number of call forwardings have already been attempted;

i) if so, terminate the private call attempt and notify the user;

ii) if not:

A) add an entry to the <forwarding-list> element containing the MCPTT ID and display name of the forwarded-by-client;

B) check to see if the <mcptt-called-party-id> element contains an MCPTT ID that is on the <forwarding-list> and, if so, terminate the private call attempt and notify the user;

C) create a new SIP INVITE for a private call using the <mcptt-called-party-id> element value, along with a <call-forwarding-ind> element set to "true" to notify the originating participating function that this private call attempt is a call forwarding attempt and the <forwarding-list> element;

D) send the SIP INVITE to the participating function; and

E) use the <mcptt-called-party-id>, <display-name> and <forwarding-reason> to notify the user that the private call is being forwarded.

5) The terminating client is responsible for:

a) sending a "forward-private-call-request" message when the user uses manual input to request call forwarding and is allowed to do so, along with the <forwarding-reason> set to "Manual-Input", the terminating client's MCPTT ID (the forwarded-by-client), an <mcptt-called-party-id> element set to the MCPTT ID or functional alias and a <display-name> element containing a displayable string describing the forwarded-to-client;

b) receiving a "forward-private-call-response" message;

c) being able to send a request to its participating function (and receive a response) to activate or deactivate "Immediate", "No-Answer" and "User-Not-Available" private call forwarding, including providing an MCPTT ID or functional alias and associated displayable string (<display-name> element value); and

d) being able to send a request to its participating function (and receive a response) to query the activation of the various conditions for private call forwarding and the current settings for the value of the forwarded-to-client and the forwarded-to-client's displayable string.

6) The originating participating function is responsible for:

a) relaying the "forward-private-call-request" and "forward-private-call-response" messages;

b) extracting from the "forward-private-call-request" message the values of the <mcptt-called-party-id> element and the MCPTT ID of the forwarded-by-client from the MIME resource-lists body and storing those values for checking a subsequent SIP INVITE for a private call that contains a <call-forwarding-in> element set to "true";

c) checking a SIP INVITE for a private call that contains a <call-forwarding-in> element set to "true" to determine whether the SIP INVITE is being sent to a stored <mcptt-called-party-id> element value, thus allowing the participating function to bypass checks on whether the originating client is allowed to initiate a private call with that target; and

d) forwarding the SIP INVITE for a private call that contains a <call-forwarding-ind> element set to "true" to the controlling function, including the <forwarding-list> element.

7) The terminating participating function is responsible for:

a) when receiving a private call attempt for its client:

i) checking whether "Immediate" call forwarding is enabled and, if so, creating a "forward-private-call-request" message along with the <forwarding-reason> set to "Immediate", the terminating client's MCPTT ID (the forwarded-by-client), an <mcptt-called-party-id> element set to the MCPTT ID or functional alias and a <display-name> element containing a displayable string describing the forwarded-to-client. The forwarded-to-client value used will be either one set by the client or the value specified in the client's user profile;

ii) checking whether the user is registered and, if not, then checking whether "User-Not-Available" call forwarding is enabled and, if so, creating a "forward-private-call-request" message as in (i) above along with the <forwarding-reason> set to "User-Not-Available";

iii) attempting to deliver the private call attempt to the client and timing out the attempt, then checking whether "No-Answer" call forwarding is enabled and, if so, creating a "forward-private-call-request" message as in (i) above along with the <forwarding-reason> set to "No-Answer";

iv) after verifying that the terminating client is authorized to forward a private call based on manual user input, relaying a "forward-private-call-request" message from its terminating client to the originating client with the <forwarding-reason> set to "Manual-Input" and relaying a "forward-private-call-response" message" from the originating client to its terminating client; and

v) receiving, processing and responding to a request from its client to to activate or deactivate "Immediate", "No-Answer" and "User-Not-Available" private call forwarding, including receiving an MCPTT ID or functional alias and associated displayable string that overrides any previously stored target and display string and any target or display string contained in the user's profile.

8) The controlling function is responsible for:

a) relaying a "forward-private-call-request" message from the terminating client to the originating client and relaying a "forward-private-call-response" message" from the originating client to its terminating client;

b) receiving a SIP INVITE for a private call including a <call-forwarding-ind> element set to "true" and a <forwarding-list> element, checking whether the application/resource-lists MIME body contains an MCPTT ID or a functional alias:

i) if the MIME body contains a functional alias, the controlling function determines what MCPTT IDs are activated for the functional alias and chooses one of them that is not already included in the <forwarding-list> to be the target MCPTT ID;

A) if an MCPTT ID can be found that is not in the <forwarding-list> (i.e., has not already been used as a target for this private call), then removes the <forwarding-List> and <call-forwarding-ind> elements and forwards the SIP INVITE to the terminating participating function for that MCPTT ID; and

B) if an MCPTT ID cannot be found that is not in the <forwarding-list> (i.e., all MCPTT IDs activated for this functional alias have already been used as potential targets for delivery of this private call attempt), then rejects the SIP INVITE; and

ii) if the MIME body contains an MCPTT ID, then depending on local policy can remove the <forwarding-list> and <call-forwarding-ind> elements and forwards the SIP INVITE to the terminating participating function for the MCPTT ID.

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

##### 11.1.9.2.1 Private call forwarding request procedures

The following procedure covers the case when an MCPTT user decides to forward an incoming MCPTT private call to a new target MCPTT ID or functional alias based on manual user input instead of accepting the incoming MCPTT private call. If the MCPTT user decides to forward an incoming MCPTT private call to a new target MCPTT ID or functional alias based on manual user input, the MCPTT client, acting as a forwarded-by-client:

1) if:

a) the <allow-call-forward-manual-input> element of the <ruleset> element is not present in the requesting MCPTT user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false";

then:

a) should indicate to the requesting MCPTT user that the requesting MCPTT user is not authorised to initiate a private call forwarding request; and

b) shall skip the rest of the steps of the present clause;

2) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications:

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

d) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

i) the <request-type> element set to a value of "forward-private-call-request";

ii) if the call is requested to be forwarded to an MCPTT ID, then the <mcptt-called-party-id> element set to the MCPTT ID of the target MCPTT user (i.e., the forwarded-to-client) and the <call-to-functional-alias-ind> element set to "false";

iii) if the call is requested to be forwarded to a functional alias, then with the <call-to-functional-alias-ind> set to "true" and with the <mcptt-called-party-id> element set to the selected functional alias;

NOTE 1: For call forwarding to an MCPTT ID the value of the <mcptt-called-party-id> is the MCPTT ID of the target user, while for call forwarding to a functional alias the value is the functional alias of the target user.

iv) the MCPTT ID of this MCPTT client in a <forwarded-by-client-ID> element;

v) the display name associated with the MCPTT client in a <forwarded-by-client-display-name> element; and

vi) the <forwarding-reason> element set to a value of "Manual-Input";

e) shall insert in the SIP MESSAGE request a MIME resource-lists body with the MCPTT ID of the forwarded MCPTT user, according to rules and procedures of IETF RFC 5366 [20]; and

f) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the MCPTT user;

4) shall send the SIP MESSAGE request towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4].

NOTE 2: The SIP MESSAGE is sent towards the client of the forwarded MCPTT user. The procedure how to process this incoming SIP MESSAGE is descibed in clause 11.1.9.2.2. Clause 11.1.9.2.2 also contains references to clause 11.1.1.2.1.1 and clause 11.1.1.2.2.1 describing how to originate an MCPTT private call from the forwarded MCPTT user to the target MCPTT.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, should indicate to the requesting MCPTT user the failure of the sent private call forwarding request and skip the rest of the steps.

Upon receiving a "SIP MESSAGE request for forwarding private call response for terminating client", the MCPTT client:

1) shall determine the success or failure of the sent forwarding private call request from the value of the <forwarding-call-outcome> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element of the application/vnd.3gpp.mcptt-info+xml MIME body included in the received SIP MESSAGE request and generate and send a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4]; and

2) should indicate to the requesting MCPTT user the success or failure of the sent private call forwarding request.

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

##### 11.1.9.2.2 Client procedures for handling incoming private call forwarding request

Upon receiving a "SIP MESSAGE request for forwarding private call request for forwarded-calling-client", the MCPTT client:

1) shall extract the MCPTT ID of the target MCPTT user or functional alias from the <mcptt-called-party-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

2) shall extract the display name of the target MCPTT user or functional alias from the <call-forwarding-target-display-name> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

3) shall extract the MCPTT ID of the forwarded-by-client from the <forwarded-by-client-ID> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

4) shall extract the display name of the forwarded-by-client from the <forwarded-by-client-display-name> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

5) if a new call forwarding attempt for this private call will exceed the value of the <max-forwardings> element of the service configuration, shall notify the MCPTT user and shall skip the rest of the steps;

6) if the received SIP MESSAGE request does not contain a <call-to-functional-alias-ind> element set to "true", then:

a) if the MCPTT ID of the target MCPTT user is equal to the value of a <uri-entry> element of an <entry> element of the <forwarding-list> element, shall notify the user of the failure of the private call attempt and shall skip the rest of the steps;

NOTE 1: If the target MCPTT ID is found in the <forwarding-list>, the forwarding attempts would be circular. A target functional alias will be sent to the controlling function along with the <forwarding-list> element for determination of whether the forwarding attempt should continue after resolution of the functional alias to a set of MCPTT IDs.

7) shall add an <entry> element to the <forwarding-list> element as the last <entry> element for this private call attempt that contains a <uri-entry> element set to the MCPTT ID of the forwarded-by-client and a <display-name> element set to the display name of the forwarded-by-client;

NOTE 2: The <entry> elements added to the <forwarding-list> element are always added at the end. The purpose is that, if the terminating client receives a <forwarding-list> element, it will know that the most recent MCPTT user that has forwarded the private call attempt is identified in the last <entry> element.

8) shall extract the call forwarding reason from the <forwarding-reason> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

9) should indicate to the forwarded MCPTT user that a request to forward the previously initiated call to a new target MCPTT user or functional alias has been received, including the display names and call forwarding reason extracted in the above steps;

10) if according to local policy on-demand sessions are to be used for forwarding of private calls, shall invoke the procedures of clause 11.1.1.2.1.1 to originate an MCPTT private call to the target MCPTT user; and

11) if according to local policy pre-established sessions are to be used for forwarding of private calls and a pre-established session is available, shall invoke the procedures of clause 11.1.1.2.2.1 to originate an MCPTT private call to the target MCPTT user.

Upon completion of the procedures of clause 11.1.1.2.1.1 or clause 11.1.1.2.2.1, the MCPTT client:

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications:

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

d) shall include in an application/resource-lists+xml MIME body the MCPTT ID contained in the <mcptt-calling-user-id> element in the application/ vnd.3gpp.mcptt-info+xml MIME body of the received SIP MESSAGE request; and

e) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

i) the <response-type> element set to a value of "forwarding-private-call-response";

ii) the <mcptt-called-party-id> set to the MCPTT ID of the target MCPTT user or functional alias called by the forwarded-calling-client;

iii) if the procedures of clause 11.1.1.2.1.1 or clause 11.1.1.2.2.1 were successful in originating an MCPTT private call to the identified MCPTT user or functional alias, a <forwarding-call-outcome> element set to a value of "success"; and

iv) if the procedures of clause 11.1.1.2.1.1 or clause 11.1.1.2.2.1 were not successful in originating an MCPTT private call to the identified MCPTT user or functional alias, a <forwarding-call-outcome> element set to a value of "fail";

2) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the forwarded-by-client; and

3) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

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

##### 11.1.9.2.3 Client procedures for changing and querying private call forwarding settings

###### 11.1.9.2.3.1 Client request to change or query private call forwarding settings

When the MCPTT client wishes to query or change the private call forwarding settings, the MCPTT client:

1) if:

a) the <allow-call-forwarding> element of the <ruleset> element is not present in the requesting MCPTT user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false";

then:

a) should indicate to the requesting MCPTT user that the requesting MCPTT user is not authorised to initiate private call forwarding; and

b) shall skip the rest of the steps of the present clause;

2) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications:

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

d) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

i) the <request-type> element set to a value of "forward-private-call-settings-request";

ii) if immediate call forwarding is to be enabled, an <call-forwarding-immediate-enabled> element set to "true";

iii) if immediate call forwarding is to be disabled, an <call-forwarding-immediate-enabled> element set to "false";

iv) if call forwarding no answer is to be enabled, a <call-forwarding-no-answer-enabled> element set to "true";

v) if call forwarding no answer is to be disabled, a <call-forwarding-no-answer-enabled> element set to "false";

vi) if call forwarding when the user is not available is to be enabled, a <call-forwarding-user-unavailable-enabled> element set to "true";

vii) if call forwarding when the user is not available is to be disabled, a <call-forwarding-user-unavailable-enabled> element set to "false";

vii) if a call forwarding target is to be specified, then:

A) a <call-forwarding-target-id> element set to the either an MCPTT ID or a functional alias;

B) a <call-forwarding-target-display-name> element set to a displayable string describing the target; and

C) a <call-forwarding-target-is-functional-alias> element set to "true" if the <call-forwarding-target-id> element contains a functional alias and otherwise set to "false"

e) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the MCPTT user;

4) shall send the SIP MESSAGE request towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4].

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, should indicate to the requesting MCPTT user the failure of the forward private call settings request.

###### 11.1.9.2.3.2 Response to client for setting or querying call forwarding settings

Upon receiving a "SIP MESSAGE request for providing private call forwarding settings at the participating function", the MCPTT client:

1) shall extract the call forwarding immediate setting from the <call-forwarding-immediate-enabled> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

2) shall extract the call forwarding no answer setting from the <call-forwarding-no-answer-enabled> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

3) shall extract the call forwarding user is not available setting from the <call-forwarding-user-unavailable-enabled> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

4) shall extract the call forwarding target ID setting from the <call-forwarding-target-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

5) shall extract the call forwarding target display name setting from the <call-forwarding-target-display-name> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

6) shall extract the indication of whether the call forwarding target ID is a functional alias setting from the <call-forwarding-target-is-functional-alias> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

7) shall store the extracted information;

8) should display the call forwarding settings to the user; and

9) shall generate and send a SIP 200 OK message towards the MCPTT server according to the rules and procedures of 3GPP TS 24.229 [4].

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

##### 11.1.9.3.1 Originating procedures

This procedure is used both when a client sends a SIP MESSAGE request from the forwarded-by-client that contains a request to forward a private call and from the forwarded-calling-client that contains a response to a private call forwarding request.

Upon receiving a "SIP MESSAGE request for forwarding private call for originating participating MCPTT function" the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall determine the MCPTT ID of the calling user from the public user identity in the P-Asserted-Identity header field of the SIP MESSAGE request;

NOTE: The MCPTT ID of the calling user is bound to the public user identity at the time of service authorisation, as documented in clause 7.3.

3) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP MESSAGE request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

4) if:

a) the "SIP MESSAGE request for forwarding private call for originating participating MCPTT function" contains the <request-type> element set to a value of "forward-private-call-request"; and

b) if the <allow-call-forward-manual-input> element of the <ruleset> element is not present in the requesting MCPTT user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false";

then:

a) shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "173 user not authorised to make a private call forwarding request" in a Warning header field as specified in clause 4.4, and skip the rest of the steps;

5) shall determine the public service identity of the controlling MCPTT function for the forwarding private call service for the requesting MCPTT user;

6) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33];

7) shall set the Request-URI of the outgoing SIP MESSAGE request to the public service identity of the controlling MCPTT function associated with the call forwarding service for the requesting MCPTT user;

8) shall copy the contents of the application/vnd.3gpp. mcptt-info+xml MIME body in the received SIP MESSAGE request into an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 included in the outgoing SIP MESSAGE request;

9) shall set the <mcptt-calling-user-id> element of the <mcpttinfo> element containing the <mcptt-Params> element to the MCPTT ID determined in step 2) above;

10) shall copy the contents of the application/resource-lists MIME body in the received SIP MESSAGE request into an application/resource-lists MIME body in the outgoing SIP MESSAGE request;

11) shall set the P-Asserted-Identity in the outgoing SIP MESSAGE request to the public user identity in the P-Asserted-Identity header field contained in the received SIP MESSAGE request;

12) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

13) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

14) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), into the P-Asserted-Service header field of the outgoing SIP MESSAGE request; and

15) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4].

Upon receipt of a SIP 2xx response in response to the SIP MESSAGE request sent in step 15), the participating MCPTT function shall generate a SIP 200 (OK) response and forward the SIP 200 (OK) response to the MCPTT client.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, shall forward the error response to the MCPTT client.

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

##### 11.1.9.3.2 Terminating procedures

This procedure is used both when participating function receives a SIP MESSAGE request for the forwarded-calling-client containing a request to forward a private call and for the forwarded-by-client containing a response to a private call forwarding request.

Upon receiving a

- "SIP MESSAGE request for forwarding private call request for terminating participating MCPTT function";

the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall use the MCPTT ID present in the <mcptt-request-uri> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP MESSAGE request to retrieve the binding between the MCPTT ID and public user identity;

3) if the binding between the MCPTT ID and public user identity does not exist, then the participating MCPTT function shall reject the SIP MESSAGE request with a SIP 404 (Not Found) response and skip the rest of the steps;

4) shall generate an outgoing SIP MESSAGE request as specified in clause 6.3.2.2.11;

5) if the "SIP MESSAGE request for forwarding private call for terminating participating MCPTT function" contains the <request-type> element set to a value of "forward-private-call-request":

a) shall extract the MCPTT ID of the target MCPTT user from the <mcptt-called-party-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request; and

b) shall cache the mapping of the MCPTT ID used in step 2) and target MCPTT ID extracted in step a);

NOTE: If multiple private call forwardings are in progress at the same time for the same user, multiple mappings have to be stored.

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), into the P-Asserted-Service header field of the outgoing SIP MESSAGE request; and

7) shall send the SIP MESSAGE request as specified in 3GPP TS 24.229 [4].

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

##### 11.1.9.3.3 Participating function procedures for receiving querying private call forwarding settings

###### 11.1.9.3.3.1 Receiving private call forwarding settings from the client

Upon receiving a "SIP MESSAGE request for changing and querying forwarding private call settings for originating participating MCPTT function", the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall determine the MCPTT ID of the calling user from the public user identity in the P-Asserted-Identity header field of the SIP MESSAGE request;

NOTE 1: The MCPTT ID of the calling user is bound to the public user identity at the time of service authorisation, as documented in clause 7.3.

3) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP MESSAGE request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps;

4) if a <call-forwarding-target-id> element is contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request

a) shall extract the call forwarding target ID setting from the <call-forwarding-target-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

5) if a <call-forwarding-target-is-functional-alias> element is contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request

a) shall extract the indication of whether the call forwarding target ID is a functional alias setting from the <call-forwarding-target-is-functional-alias> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

6) if a call forwarding target ID was extracted in step 4) then:

a) if an indication that the call forwarding target ID is a functional alias was not extracted in step 5) or was extracted and has the value "false", then:

i) if the call forwarding target ID extracted in step 4) is not contained in an <entry> element of the <AllowedMCPTTIdsForCallForwarding> list element of the <anyExt> element of the <OnNetwork> element of the client's MCPTT user profile (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and if an <allow-call-forwarding-to-any-user> element does not exist in the MCPTT user profile or exists and is set to the value "false" shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "xxx user is not allowed to forward private calls to this MCPTT ID" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

ii) shall store an indication of whether the call forwarding target ID is a functional alias set to "false";

b) if an indication that the call forwarding target ID is a functional alias was extracted in step 5) and has the value "true", then:

i) if a call forwarding target ID was extracted in step 4) and is not contained in an <entry> element of the <AllowedFunctionalAliasesForCallForwarding> list element of the <anyExt> element of the <OnNetwork> element of the client's MCPTT user profile (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and if an <allow-call-forwarding-to-any-user> element does not exist in the MCPTT user profile or exists and is set to the value "false" shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "yyy user is not allowed to forward private calls to this functional alias" in a Warning header field as specified in clause 4.4 and shall skip the rest of the steps; and

ii) shall store an indication of whether the call forwarding target ID is a functional alias set to "true"; and

c) shall store the call forwarding target ID extracted in step 4);

7) if a <call-forwarding-immediate-enabled> element is contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request:

a) shall extract the call forwarding immediate setting from the <call-forwarding-immediate-enabled> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request; and

b) shall store the call forwarding immediate setting;

8) if a <call-forwarding-no-answer-enabled> element is contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request:

a) shall extract the call forwarding no answer setting from the <call-forwarding-no-answer-enabled> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request; and

b) shall store the call forwarding no answer setting;

9) if a <call-forwarding-user-unavailable-enabled> element is contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request

a) shall extract the call forwarding user is not available setting from the <call-forwarding-user-unavailable-enabled> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request; and

b) shall store the call forwarding user is not available setting;

10) if a <call-forwarding-target-display-name> element is contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request

a) shall extract the call forwarding target display name setting from the <call-forwarding-target-display-name> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request; and

b) shall store the call forwarding target display name setting;

NOTE 2: It is assumed that the display name stored will match the stored call forwarding target ID.

11) shall generate and send a SIP 200 OK message towards the MCPTT client according to the rules and procedures of 3GPP TS 24.229 [4]; and

12) shall perform the procedures of subclause 11.1.9.3.3.2 to inform the MCPTT client of the current private call forwarding setting values.

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

###### 11.1.9.3.3.2 Sending current private call forwarding settings to the client

This procedure is always invoked by the procedure in subclause 11.1.9.3.3.1 to provide the client with the current settings at the participating function. This procedure can also be invoked by the participating function upon successful registration of the MCPTT client to provide the client with a view of the current private call forwarding settings.

The participating MCPTT function:

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33];

2) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

3) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

4) shall set the Request-URI to the MCPTT ID of the targeted MCPTT user;

5) shall include a P-Asserted-Identity header field set to the public service identity of participating MCPTT function;

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Asserted-Service-Id header field according to IETF RFC 6050 [9];

7) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

a) the <request-type> element set to a value of "forward-private-call-settings-response";

b) a <call-forwarding-immediate-enabled> element set to the value of the stored immediate call forwarding setting;

c) a <call-forwarding-no-answer-enabled> element set to the value of the stored call forwarding no answer setting,

d) a <call-forwarding-user-unavailable-enabled> element set to the value of the stored call forwarding when the user is not available setting;

e) a <call-forwarding-target-id> element set to the value of the stored call forwarding target ID;

f) a <call-forwarding-target-display-name> element set to the value of the stored displayable string describing the target; and

g) a <call-forwarding-target-is-functional-alias> element set to the value of the stored indication of whether the call forwarding target ID is a functional alias; and

8) shall send the SIP MESSAGE request as specified in 3GPP TS 24.229 [4].

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, shall ignore that response.

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

#### 11.1.9.4 Controlling MCPTT function procedures

Upon receiving a:

- "SIP MESSAGE request for forwarding private call request for controlling MCPTT function"; or

- "SIP MESSAGE request for forwarding private call response for controlling MCPTT function";

the controlling MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The controlling MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if an Accept-Contact header field does not include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt";

3) if the incoming SIP MESSAGE request does not contain an application/resource-lists MIME body or contains an application/resource-lists MIME body with more than one <entry> element, shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.4, and shall skip the rest of the steps;

4) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

7) shall copy the contents of the application/vnd.3gpp. mcptt-info+xml MIME body in the received SIP MESSAGE request into an application/vnd.3gpp.mcptt-info+xml MIME body included in the outgoing SIP MESSAGE request;

8) shall set the Request-URI to the public service identity of the terminating participating MCPTT function associated to the MCPTT user identified by the MCPTT ID contained in the <mcptt-request-uri> element in the application/vnd.3gpp.mcptt-info+xml MIME body of the outgoing SIP MESSAGE request;

NOTE: How the controlling MCPTT function finds the address of the terminating MCPTT participating function is out of the scope of the present specfication.

9) shall include a P-Asserted-Service header field with the value "urn:urn-7:3gpp-service.ims.icsi.mcptt";

10) shall copy the public user identity of the calling MCPTT user from the P-Asserted-Identity header field of the incoming SIP MESSAGE request into the P-Asserted-Identity header field of the outgoing SIP MESSAGE request; and

11) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

Upon receipt of SIP 2xx responses to the outgoing SIP MESSAGE requests, the controlling MCPTT function shall generate a SIP 200 (OK) response and forward the SIP 200 (OK) response to the originating participating MCPTT function.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, controlling MCPTT function shall forward the error response to the originating participating MCPTT function.

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