**3GPP TSG-CT WG1 Meeting #133e-bisC1-220614**

**E-meeting, 17-21 Jauary 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.380** | **CR** | **0315** | **rev** | **1** | **Current version:** | **17.5.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Interconnect modifications of Floor Control | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Airbus | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MCSMI\_CT | | | | |  | ***Date:*** | | | 2022-01-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In interconnect it is not always possible to distinguish connections to floor participants in interconnected systems. In these cases it is not possible to distinguish requests from, or requests to, specific users. 23.379 (CR#0174) added the source or target MCPTT ID and, when applicable the functional alias to floor control messages in order to enable separation of individual users in an interconnected system. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add MCPTT ID and functional alias to Floor Control messages. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not possible to distinguish users in interconnected systems. Floor control messages from individual users in interconnected systems will not be understood by the server and floor control messages to individual users in interconnected systems will not be routed correctly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.2.4.3.2, 6.2.4.3.3, 6.2.4.4.2, 6.2.4.4.8, 6.2.4.4.9, 6.2.4.4.11, 6.2.4.5.3, 6.2.4.5.4, 6.2.4.5.5, 6.2.4.5.7, 6.2.4.6.2, 6.2.4.6.4, 6.2.4.6.5, 6.2.4.6.8, 6.2.4.7.6, 6.2.4.9.3, 6.2.4.9.4, 6.2.4.9.5, 6.2.4.9.6, 6.2.4.9.9, 6.2.4.9.10, 6.2.4.9.11, 6.2.4.9.13, 6.2.4.9.15, 6.3.4.3.3, 6.3.4.3.6, 6.3.4.4.2, 6.3.4.4.7, 6.3.4.4.7a, 6.3.4.4.8, 6.3.4.4.9, 6.3.4.4.12, 6.3.4.4.13, 6.3.4.5.2, 6.3.4.8.4, 6.3.5.2.2, 6.3.5.3.4, 6.3.5.3.7, 6.3.5.3.8, 6.3.5.4.4, 6.3.5.4.5, 6.3.5.4.6, 6.3.5.4.7, 6.3.5.4.12, 6.3.5.5.3, 6.3.5.5.11, 6.3.5.6.5, 6.3.5.7.3, 6.3.5.7.4, 6.3.5.10.5, 6.3.5.10.7, 6.3.6.3.2, 6.3.6.3.4, 6.3.6.3.6, 6.3.6.3.7, 6.5.2.3.3, 8.2.5, 8.2.6.1, 8.2.7, 8.2.8, 8.2.9, 8.2.10.1, 8.2.11, 8.2.12, 8.2.13, 8.2.15 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev 1: Changed partner system to interconnected system. Ticked the ME box. | | | | | | | | |

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

##### 6.2.4.3.2 Receive Floor Idle message (R: Floor Idle)

Upon receiving a Floor Idle message, the participant:

1. if the first bit in the subtype of the Floor Idle message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '5' (Floor Idle);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. may provide floor idle notification to the user, if it has not already done so;

3. shall stop the optional timer T103 (End of RTP media), if it is running; and

4. shall remain in the 'U: has no permission' state.

##### 6.2.4.3.3 Receive Floor Taken message (R: Floor Taken)

Upon receiving the Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '2' (Floor Taken);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. may provide a floor taken notification to the user;

3. if the Floor Indicator field is included and the type of call bit is set, may provide a notification to the user indicating the type of call;

4. if the Floor Indicator field is included and the I-bit is set to '1' (multi-talker), shall provide a notification to the user indicating the type of call and may provide a list of current talkers;

5. should start the optional timer T103 (End of RTP media) for the participant for which Floor Taken message was received; and

6. shall remain in the 'U: has no permission' state.

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

##### 6.2.4.4.2 Receive Floor Granted message (R: Floor Granted)

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in a SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '1' (Floor Granted);

b. shall include the Source field set to '0' (the floor participant is the source);

c. if the call is a remotely initiated ambient listening call and if the user's MCPTT profile allows sending the user's location, shall include the location as specified in clause 6.2.4.3.5. If sending the user's location is not allowed, the location field may be included with the location type field set to '0' (Not provided); and

d. if the controlling function is in an interconnected system, shall include the User ID field;

2. if the call is not an ambient listening call, shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the type of call bit is set, may provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;

5. shall stop the optional timer T103 (End of RTP media), if running;

6. shall stop timer T101 (Floor Request); and

7. shall enter the 'U: has permission' state.

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

##### 6.2.4.4.8 Send Floor Release message (PTT button released)

Upon receiving an indication from the user to release permission to send media, the floor participant:

1. shall send a Floor Release message towards the floor control server including;

a. void; and

b. if the controlling function is in the interconnected system, shall include the User ID field;

2. may include the first bit in the subtype of the Floor Release message set to '1' (Acknowledgment is required) as described in clause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3. shall start timer T100 (Floor Release) and initialise counter C100 (Floor Release) to 1;

4. shall stop timer T101 (Floor Request); and

5. shall enter the 'U: pending Release' state.

##### 6.2.4.4.9 Receive Floor Queue Position Info message (R: Floor Queue Position Info)

Upon receiving a Floor Queue Position Info message, the floor participant:

1. if the first bit in the subtype of the Floor Queue Position Info message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '9' (Floor Queue Position Info);

b. shall include the Source field set to '0' (the floor participant is the source);

c. if the controlling function is in an interconnected system, shall include the User ID field; and

2. shall provide floor request queued response notification to the MCPTT user;

3. may provide the queue position and priority to the MCPTT user;

3A. shall stop timer T101 (Floor Request); and

4. shall enter the 'U: queued' state.

NOTE: For groups configured for audio cut-in floor control the floor participant will never receive Floor Queue Position Info.

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

##### 6.2.4.4.11 Receive Floor Taken message (R: Floor Taken)

Upon receiving a Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '2' (Floor Taken);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. may provide floor taken notification to the user;

3. if the Floor Indicator field is included and the type of call bit is set, may provide a notification to the user indicating the type of call;

4. if the Floor Indicator field is included and the I-bit is set to '1' (multi-talker), shall provide a notification to the user indicating the type of call and may provide a list of current talkers;

5. should start the optional timer T103 (End of RTP media) for each new talker as received in Floor Taken message;

6. if the identity of the floor participant is not included in the List of Granted Users, shall stop timer T100 (Floor Release); and

7. if:

a. the floor participant has requested the floor with pre-emptive floor priority; and

b. the Floor Taken message is received as a result of the floor being taken by another floor participant;

then remain in the 'U: pending request state';

otherwise,

a. shall stop timer T101 (Floor Request); and

b. shall enter the 'U: has no permission' state.

NOTE: When the floor participant has requested the floor with/wthout pre-emptive floor priority, there is a possibility that this floor participant can also receive a Floor Granted creating a dual floor or Multi-talker scenario (multi-talker configuration limit reached or within the limit).

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

##### 6.2.4.5.3 Send Floor Release message (PTT button released)

Upon receiving an indication from the user to release the permission to send RTP media, the floor participant:

1. shall send a Floor Release message towards the floor control server. The Floor Release message:

a. may include the first bit in the subtype of the Floor Release message set to '1' (acknowledgement is required) as specified in clause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

b. void;

c. if the Floor Granted message included the G-bit set to '1' (Dual floor), shall include the Floor Indicator with the G-bit set to '1' (Dual floor); and

d. if the controlling function is in the interconnected system, shall include the User ID field;

2. shall remove the indication that the participant is overriding without revoke if this indication is stored;

3. shall remove the indication that the participant is overridden without revoke if this indication is stored;

4. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and

5. shall enter the 'U: pending Release' state.

##### 6.2.4.5.4 Receive Floor Revoke message (R: Floor Revoke)

Upon receiving a Floor Revoke message, the floor participant:

1. shall inform the user that the permission to send RTP media is being revoked;

2. may give information to the user about the reason for revoking the permission to send media;

3. shall request the media mixer in the MCPTT client discard any remaining buffered RTP media packets and to stop forwarding encoded voice to the MCPTT server;

4 if the G-bit in the Floor Indicator is set to '1' (Dual floor):

a. shall send a Floor Release message. In the Floor Release message:

i. shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

ii. may set the first bit in the subtype to '1' (Acknowledgment is required) as described in clause 8.2.2; and

iii. if the controlling function is in the interconnected system, shall include the User ID field;

5 if the G-bit in the Floor Indicator is set to '0' (not Dual floor):

a. shall send a Floor Release message. In the Floor Release message:

i. shall include the Floor Indicator with the G-bit set to '0' (not Dual floor);

ii. may set the first bit in the subtype to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

iii. if the controlling function is in the interconnected system, shall include the User ID field;

6. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and

7. shall enter the 'U: pending Release' state.

##### 6.2.4.5.5 Receive Floor Granted message (R: Floor Granted)

Upon receiving a Floor Granted message from the floor control server, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '1' (Floor Granted);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field; and

2. shall remain in the 'U: has permission' state.

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

##### 6.2.4.5.7 Receive Floor Idle message (R: Floor Idle)

Upon receiving a Floor Idle message from the floor control server, the floor participant:

1. if an indication that the participant is overriding without revoke is stored:

a. if the first bit in the subtype of the Floor Idle message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

i. shall include the Message Type field set to '1' (Floor Idle);

ii. shall include the Source field set to '0' (the floor participant is the source); and

iii. if the controlling function is in an interconnected system, shall include the User ID field;

b. shall remove the indication that the participant is overriding without revoke; and

c. shall remain in the 'U: has permission' state; and

2. if the G-bit in the Floor Indicator is set to '1' (Dual Floor) and an indication that the participant is overridden without revoke is stored:

a. if the first bit in the subtype of the Floor Idle message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

i. shall include the Message Type field set to '1' (Floor Idle);

ii. shall include the Source field set to '0' (the floor participant is the source); and

iii. if the controlling function is in an interconnected system, shall include the User ID field;

b. shall remove the indication that the participant is overridden without revoke; and

c. shall remain in the 'U: has permission' state.

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

##### 6.2.4.6.2 Timer T100 (Floor Release) expired

On expiry of timer T100 (Floor Release) less than the configurable number of the upper limit of counter C100 (Floor Release) times, the floor participant:

1. shall send a Floor Release message towards the floor control server;

a. may set the first bit in the subtype of the Floor Release message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

b. if the controlling function is in the interconnected system, shall include the User ID field;

2. shall restart timer T100 (Floor Release) and increment counter C100 (Floor Release) by 1; and

3. shall remain in state 'U: pending Release'.

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

##### 6.2.4.6.4 Receive Floor Idle message (R: Floor Idle)

Upon receiving a Floor Idle message, the floor participant:

1. if the first bit in the subtype of the Floor Idle message to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '5' (Floor Idle);

b. shall include the Source field set to '0' (the floor participant is the source);

c. if the controlling function is in an interconnected system, shall include the User ID field; and

2. may provide a floor idle notification to the MCPTT user;

3. if the Floor Indicator field is included and the type of call bit is set, may provide a notification to the user indicating the type of call;

4. shall stop timer T100 (Floor Release);

5. if the session is not a broadcast group call or if the A-bit in the Floor Indicator field is set to '1' (Normal call), shall enter the 'U: has no permission' state; and

6. if the session was initiated as a broadcast group call:

a. shall indicate to the MCPTT client the media transmission is completed; and

b shall enter the 'Releasing' state.

##### 6.2.4.6.5 Receive Floor Taken message (R: Floor Taken)

Upon receiving a Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '2' (Floor Taken);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. may provide floor taken notification to the user;

3. if the Floor Indicator field is included and the type of call bit is set, may provide a notification to the user indicating the type of call;

4. if the Floor Indicator field is included and the I-bit is set to '1' (multi-talker), shall provide a notification to the user indicating the type of call and may provide a list of current talkers;

5. should start the optional timer T103 (End of RTP media) for each new talker as received in Floor Taken message;

6. if the identity of the floor participant is not included in the List of Granted Users, shall stop timer T100 (Floor Release); and

7. shall enter the 'U: has no permission' state.

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

##### 6.2.4.6.8 Receive Floor Granted message (R: Floor Granted)

Upon receiving a Floor Granted message, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '1' (Floor Granted);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field; and

2. shall remain in the 'U: pending Release' state.

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

##### 6.2.4.7.6 Receive Queued Floor Requests message (R: Queued Floor Requests)

Upon receiving a Queued Floor Requests message, including a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '1' (Cancel Result), the floor participant:

1. if the first bit in the subtype of the Queued Floor Requests message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '14' (Queued Floor Requests);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. may provide the result of a message for cancellation of a queued floor request to the MCPTT user;

3. shall stop the timer T134 (Queued Floor Requests), if running; and

4. shall remain in the current state.

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

##### 6.2.4.9.3 Receive Floor Taken message (R: Floor Taken)

Upon receiving a Floor Taken message, the floor participant:

1. may provide a floor taken notification to the MCPTT user;

2. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '2' (Floor Taken);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

3. if the Floor Indicator field is included and the I-bit is set to '1' (multi-talker), shall provide a notification to the user indicating the type of call and may provide a list of current talkers;

4. should start the optional timer T103 (End of RTP media); and

5. shall remain in the 'U: queued' state.

##### 6.2.4.9.4 Receive Floor Granted message (R: Floor Granted)

Upon receiving a Floor Granted message, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '1' (Floor Granted);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. shall provide a floor granted notification to the MCPTT user;

3. if the Floor Indicator field is included and the type of call bit is set, may provide a notification to the user indicating the type of call;

4. shall stop timer T104 (Floor Queue Position Request), if running;

5. shall start timer T132 (Queued granted user action);

6. shall stop the optional timer T103 (End of RTP media), if running, and if associated to a participant for whichthe previously received Floor Taken did not include a Floor Indicator field with the G-bit set to '1' (Dual floor);

7. shall indicate the user that the floor is granted; and

8. shall remain in the 'U: queued' state.

##### 6.2.4.9.5 Receive Floor Deny message (R: Floor Deny)

Upon receiving a Floor Deny message, the floor participant:

1. if the first bit in the subtype of the Floor Deny message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '3' (Floor Deny);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. shall provide floor deny notification to the MCPTT user;

3. may display the deny reason to the user using information in the Reject Cause field;

4. shall stop timer T104 (Floor Queue Position Request), if running; and

5. shall enter the 'U: has no permission' state.

##### 6.2.4.9.6 Send Floor Release message (PTT button released)

Upon receiving an indication from the MCPTT user to release the queued floor request, the floor participant:

1. shall send a Floor Release message: The Floor Release message:

a. void; and

b. if the controlling function is in the interconnected system, shall include the User ID field;

2. may set the first bit in the subtype of the Floor Release message to '1' (Acknowledgment is required) as described in clause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3. shall start timer T100 (Floor Release) and initialise counter C100 (Floor Release) to 1;

4. shall stop timer T104 (Floor Queue Position Request), if running;

5. shall stop timer T132 (queued request granted user action); and

6. shall enter the 'U: pending Release' state.

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

##### 6.2.4.9.9 Send Floor Queue Position Request message (S: Floor Queue Position Request)

Upon receipt of an indication from the MCPTT client to request the queue position and timer T132 is not running (i.e. a Floor Granted message has not been received), the floor participant:

1. shall send the Floor Queue Position Request message:

a. if the controlling function is in the interconnected system, shall include the User ID field;

2. shall start timer T104 (Floor Queue Position Request) and initialize counter C104 (Floor Queue Position Request) to 1; and

3. shall remain in the 'U: queued' state.

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

##### 6.2.4.9.10 Timer T104 (Floor Queue Position Request) expired

On expiry of timer T104 (Floor Queue Position Request) less than the upper limit of C104 (Floor Queue Position Request) times, the floor participant:

1. shall send a Floor Queue Position Request message towards the floor control server:

a. if the controlling function is in the interconnected system, shall include the User ID field;

2. shall restart timer T104 (Floor Queue Position Request) and increment counter C104 (Floor Queue Position Request) by 1; and

3. shall remain in the 'U: queued' state.

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

##### 6.2.4.9.11 Timer T104 (Floor Queue Position Request) expired N times

When timer T104 (Floor Queue Position Request) expires by the upper limit of counter C104 (Floor Queue Position Request) times, the floor participant:

1. shall provide a floor queued timeout to the MCPTT client;

2. shall send a Floor Release message; The Floor Release message:

a. may set the first bit in the subtype of the Floor Release message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

b. if the controlling function is in the interconnected system, shall include the User ID field;

3. void

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3a. shall start timer T100 (Floor Release) and initialise counter C100 (Floor Release) to 1; and

4. shall enter the 'U: pending Release' state.

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

##### 6.2.4.9.13 Timer T132 (Queued granted user action) expires

Upon expiry of timer T132 (Queued granted user action) the floor participant:

1. shall send Floor Release message:

a. if the controlling function is in the interconnected system, shall include the User ID field;

2. may indicate the user that the floor is no more available;

3. may set the first bit in the subtype of the Floor Release message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

4. shall enter 'U: has no permission' state.

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

##### 6.2.4.9.15 Receive Queued Floor Requests message (R: Queued Floor Requests)

Upon receiving a Queued Floor Requests message including a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '2' (Cancel Notification), the floor participant:

1. if the first bit in the subtype of the Queued Floor Requests message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '14' (Queued Floor Requests);

b. shall include the Source field set to '0' (the floor participant is the source); and

c. if the controlling function is in an interconnected system, shall include the User ID field;

2. shall provide a queued floor requests cancellation notification to the MCPTT user;

3. may display the requesting user for a cancellation of a queued floor request to the user using information in the Requested Party's Identity field;

4. shall stop timer T104 (Floor Queue Position Request), if running; and

5. shall enter the 'U: has no permission' state.

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

##### 6.3.4.3.3 Receive Floor Request message (R: Floor Request)

Upon receiving a floor request message (from a floor participant that is permitted to make a floor request) the floor control arbitration logic in the floor control server:

1. shall reject the request if one of the following conditions is fulfilled:

a. if there is only one MCPTT client in the MCPTT call; and

b. <on-network-recvonly> element is present in the <entry> element as specified 3GPP TS 24.481 [12] for the associated floor participant;

2. if the floor request is rejected the floor control server:

a. shall send the Floor Deny message. The Floor Deny message:

i. shall include in the Reject Cause field the <Reject Cause> value:

A. cause #3 (Only one participant), if there is only one MCPTT client in the MCPTT call; or

B. cause #5 (Receive only), if the <on-network-recvonly> element is present in the <entry> element as specified in 3GPP TS 24.481 [12] for the associated floor participant;

ii. may include an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value of the Reject Cause field;

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if the requesting user is in an interconnected system, shall include the User ID field;

b. shall remain in the 'G: Floor Idle' state; and

3. if the floor request is granted the floor control server:

a. shall stop timer T4 (Inactivity);

b. shall stop timer T7 (Floor Idle);

c. shall store the SSRC of floor participant granted the permission to send media until the floor is released associated to that floor request;

d. if a Track Info field is included in the Floor Request message, shall store the received Track Info field, and

e. shall enter the 'G: Floor Taken' state as specified in the clause 6.3.4.4.2.

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

##### 6.3.4.3.6 Receive an implicit floor request (R: Implicit floor request)

Upon receiving an implicit floor request due to an upgrade to an emergency group call or due to an upgrade to imminent peril call, the floor control arbitration logic in the floor control server:

1. shall reject the request if there is only one MCPTT client in the MCPTT call;

2. if the floor request is rejected the floor control server:

a. shall send the Floor Deny message. The Floor Deny message:

i. shall include in the Reject Cause field the <Reject Cause> value cause #3 (Only one participant);

ii. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and

iii. if the requesting user is in an interconnected system, shall include the User ID field; and

b. shall remain in the 'G: Floor Idle' state; and

3. if the floor request is granted the floor control server:

a. shall stop the timer T4 (Inactivity);

b. shall stop the timer T7 (Floor Idle);

c. shall store the SSRC of floor participant granted the permission to send media until the floor is released associated to that floor request; and

d. shall enter the 'G: Floor Taken' state as specified in the clause 6.3.4.4.2.

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

##### 6.3.4.4.2 Enter the 'G: Floor Taken' state

When entering this state the floor control arbitration logic in the floor control server:

1. shall send a Floor Granted message to the floor participant to which the floor is granted. The Floor Granted message:

a. shall include the value of timer T2 (Stop talking)in the Duration field;

b. shall include the granted priority in the Floor priority field;

c. if a Track Info field associated with the floor control server state transition diagram for 'general floor control operation' is stored, shall include the stored Track Info field;

d. if a group call is a broadcast group call, system call, emergency call, an imminent peril call or a temporary group session, shall include the Floor Indicator field with appropriate indications;

e. if the call is a remotely initiated ambient listening call, shall set the first bit in the subtype of the Floor Granted message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: If the call is an ambient listening call and the ambient listening call type is remote-initiated, then the floor participant to which the floor is granted is the terminating floor participant of the call. Otherwise the floor is granted to the participant which requested the floor.

f. if the granted user is in an interconnected system, shall include the User ID field.

2. shall start timer T20 (Floor Granted) if the floor request was queued for the participant to which the floor is granted and initialise the counter C20 (Floor Granted) to 1;

3. shall send Floor Taken message to all other floor participants. The Floor Taken message:

a. if the floor is currently granted only to one particpant:

i shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field, if privacy is not requested;

ii. may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested; and

iii. shall include the location of the user as specified in clause 6.2.4.3.5;

b. if multi-talker is supported and the floor is currently granted to multiple participants:

i. shall include the Floor Indicator field with the I-bit set to '1' (Multi-talker);

ii. shall include the list of granted users in the multi-talker group in List of Granted Users field, including a new granted talker;

iii. shall include the list of SSRCs of granted floor participants;

iv) may include the list of functional aliases of the granted floor participants in the List of Functional Aliases field; and

v. shall include the List of Locations of granted floor participants;

c. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1;

d. if the session is a broadcast group call or an ambient listening call, shall include the Permission to Request the Floor field set to '0';

e. if the session is not a broadcast group call, may include the Permission to Request the Floor field set to '1'; and

f. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

4. shall start timer T1 (End of RTP media) for the participant to which the floor is granted;

5. shall set the general state to 'G: Floor Taken' state; and

6. if configured to support multi-talker floor control the group is configured to shall add the MCPTT identity of the participant to which the floor is granted to the list of currently granted talkers.

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

##### 6.3.4.4.7 Receive Floor Request message with pre-emptive priority (R: pre-emptive Floor Request)

NOTE 1: This procedure is also invoked from the clause 6.3.5.4.4.

If the group is not configured to support multi-talker feature control, on receipt of a floor request message with effective priority indicating pre-emptive priority, and if the effective priority of the floor participant with permission to send media is not the pre-emptive priority, or if the group is configured for audio cut-in, the floor control arbitration logic in the floor control server:

1. based on local policy, select one of the following options:

a. revoke the current speaker; or

b. allow media from both the current speaker and from the participant now requesting floor with a pre-emptive floor priority;

NOTE 2: If the group is configured for audio cut-in, media is allowed only for the participant now requesting the floor.

2. if revoking current speaker is selected:

a. shall stop timer T1 (End of RTP media), if running;

b. shall stop timer T20 (Floor Granted), if running;

c. shall include a Reject Cause field with the <Reject Cause> value set to #4 (Media Burst pre-empted) in the Floor Revoke message sent in clause 6.3.4.5.2;

d. shall enter the 'G: pending Floor Revoke' state as specified in the clause 6.3.4.5.2;

e. shall insert the floor participant into the active floor request queue to the position in front of all queued requests, if not inserted yet or update the position of the floor participant in the active floor request queue to the position in front of all other queued requests, if already inserted; and

f. shall send a Floor Queue Position Info message to the requesting floor participant, if negotiated support of queueing of floor requests as specified in clause 14. The Floor Queue Position Info message:

i. include the queue position and floor priority in the Queue Info field;

ii. if the Floor Request message included a Track Info field, shall include the received Track Info field; and

iii. if the requesting floor participant is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting floor participant; and

3. if allow media from both the current speaker and from the participant now requesting floor with a pre-emptive priority is selected:

a. shall perform the actions specified in the clause 6.3.6.2.2

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

##### 6.3.4.4.7a Receive Floor Request message multi-talker (R: multi-talker Floor Request)

On receipt of a floor request message and if the group is configured as multi-talker group the floor control arbitration logic in the floor control server:

1. shall select one of the following options:

a. if the maximum number of simultaneous talkers applicable for multi-talker control is reached and if the floor request message has effective priority indicating pre-emptive priority, determine from all participants having permission to send media, the one with the lowest priority and revoke the floor from the participant with the lowest priority; or

b. if the maximum number of simultaneous talkers applicable for multi-talker control is not reached, allow media from both the current speaker(s) and from the participant now requesting floor;

2. if revoking is selected:

a. shall stop timer T1 (End of RTP media) for the participant from which the floor is revoked, if running;

b. shall stop timer T20 (Floor Granted) for the participant from which the floor is revoked, if running;

c. shall include a Reject Cause field with the <Reject Cause> value set to #4 (Media Burst pre-empted) in the Floor Revoke message sent in clause 6.3.4.5.2;

d. shall enter the 'G: pending Floor Revoke' state as specified in the clause 6.3.4.5.2;

e. shall insert the floor participant into the active floor request queue to the position in front of all queued requests, if not inserted yet or update the position of the floor participant in the active floor request queue to the position in front of all other queued requests, if already inserted;

f. shall send a Floor Queue Position Info message to the requesting floor participant, if negotiated support of queueing of floor requests as specified in clause 14. The Floor Queue Position Info message:

i. shall include the queue position and floor priority in the Queue Info field;

ii. if the Floor Request message included a Track Info field, shall include the received Track Info field; and

iii. if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user; and

3. if allow media from both the current speaker(s) and from the participant now requesting floor is selected:

a. shall send a Floor Granted message to the requesting floor participant. The Floor Granted message:

i. shall include the value of the T2 (Stop talking) timer in the Duration field;

ii. shall include the granted priority in the Floor priority field;

iii. if a Track Info field associated with the floor control server state transition diagram for 'multe-talker floor control operation' is stored, shall include the stored Track Info field;

iv. shall include the Floor Indicator field with the I-bit set to '1' (Multi-talker);

v. shall include the SSRC of granted floor participant; and

vi. if the granted user is in an interconnected system, shall include the User ID field;

b. shall add the MCPTT ID of the user to which the floor is granted to the list of currently granted talkers;

c. shall send a Floor Taken message to any non-controlling MCPTT functions involved and to floor participants controlled by the controlling MCPTT function that will listen to the RTP media from the multi-talker MCPTT client according to local policy. The Floor Taken message:

i. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the associated functional alias in the Functional Alias field, if privacy is not requested;

ii. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

iii. shall include the Floor Indicator field with the I-bit set to '1' (Multi-talker);

iv. shall include the list of granted users in the multi-talker group in List of Granted Users field;

v. shall include the list of SSRCs of granted floor participants; and

vi) may include the list of functional aliases of the granted floor participants in the List of Functional Aliases field.

d. shall start the T1 (End of RTP media) timer for the particpant to which the floor is granted;

e. shall start timer T20 (Floor Granted) for the particpant to which the floor is granted, if the floor request was queued and initialise the counter C20 (Floor Granted) to 1;

f. shall stay in the state to 'G: Floor Taken' state.

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

##### 6.3.4.4.8 Receive Floor request message from permitted floor participant (R: Floor Request)

Upon receiving a floor request message from the floor participant that has been granted permission to send media, the floor control arbitration logic in the floor control server:

1. shall send a Floor Granted message to the previously granted floor participant. The Floor Granted message:

a. shall include the value of timer T2 (Stop talking) running for this floor participant in the Duration field;

b. shall include the granted priority in the Floor priority field;

c. if the Floor Request message included a Track Info field, shall include the received Track Info field; and

d. if the granted user is in an interconnected system, shall include the User ID field; and

2. shall remain in the 'G: Floor Taken' state.

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

##### 6.3.4.4.9 Timer T20 (Floor Granted) expired

On expiry of timer T20 (Floor Granted), the floor control arbitration logic in the floor control server:

1. shall send a Floor Granted message to the granted floor participant if counter C20 (Floor Granted) has not reached its upper limit: The Floor Granted message:

a. shall include the value of timer T2 (Stop talking) in the Duration field;

b. shall include the granted priority in the Floor priority field;

c. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

d. if the granted user is in an interconnected system, shall include the User ID field;

2. shall start timer T20 (Floor Granted) and increment counter C20 (Floor Granted) by 1 if counter C20 (Floor Granted) has not reached its upper limit; and

3. shall remain in the 'G: Floor Taken' state.

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

##### 6.3.4.4.12 Receive an implicit floor request (R: Implicit floor request)

Upon receiving an implicit floor request due to an upgrade to an emergency group call or due to an upgrade to imminent peril call, the floor control arbitration logic in the floor control server:

1. shall stop timer T1 (End of RTP media), if running;

2. shall stop timer T20 (Floor Granted), if running;

3. shall set the Reject Cause field in the Floor Revoke message to #4 (Media Burst pre-empted);

4. shall enter the 'G: pending Floor Revoke' state as specified in the clause 6.3.4.5.2;

5. shall insert the floor participant into the active floor request queue to the position in front of all queued requests, if not inserted yet or update the position of the floor participant in the active floor request queue to the position in front of all other queued requests, if already inserted; and

6. shall send a Floor Queue Position Info message to the requesting floor participant, if negotiated support of queueing floor requests as specified in clause 14. The Floor Queue Position Info message:

a. shall include the queue position and floor priority in the Queue Info field; and

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

c. if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user.

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

##### 6.3.4.4.13 Receive Queued Floor Requests message (R: Queued Floor Requests)

Upon receiving a Queued Floor Requests message, including a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '0' (Cancel Request), from the associated floor participant, the floor control arbitration logic in the floor control server:

1. if the active floor request queue is empty:

a. shall send a Queued Floor Requests message to the associated floor participant as described in clause 8.2.15. The Queued Floor Requests message:

i. shall include a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '1' (Cancel Result);

ii. shall include a Queued Floor Requests Result field with Queued Floor Requests Result Value set to '2' (The floor request queue is already empty);

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if the associated floor participant is in an interconnected system, shall include the User ID field; and

b. may set the first bit in the subtype of the Queued Floor Requests message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

c. shall remain in the 'G: Floor Taken' state; and

2. if the active floor request queue is not empty:

a. shall remove the queued floor requests of the users indicated in the List of Queued Userss field from the active floor request queue if the List of Queued Users field is present. Otherwise, shall remove all the queued floor requests from the active floor request queue;

b. shall send a Queued Floor Requests message:

i. including a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '2' (Cancel Notification); and

ii. if the queued user is in an interconnected system, shall include the User ID field;

to the associated floor participants whose floor requests have been removed from the queue;;

c. shall send a Queued Floor Requests message to the associated floor participant as described in clause 8.2.15. The Queued Floor Requests:

i. shall include a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '1' (Cancel Result);

ii. shall include a Queued Floor Requests Result field with the Queued Floor Requests Result Value set to:

A. '0' (Successfully removed the queued floor requests of all users specified in the List of Queued Users field in a message or all the queued floor requests from the floor request queue);

B. '3' (The queued floor requests of all users specified in the List of Queued Users field in a message do not exist in the floor request queue);

C. '4' (Unable to remove some of the queued floor requests of the users specified in the List of Queued Users field in a message);

D. '5' (The queued floor requests of some of the users specified in the List of Queued Users field in a message do not exist in the floor request queue); or

E. '255' (Unknown reason);

iii. if the Floor Request included a Track Info field, shall include the received Track Info field;

iv. if the List of Queued Users field was present in the received message, shall include into the List of Queued Users field the list of users whose queued floor requests were not possible to remove and their queued requests still exist in the active floor request queue; and

v. if the associated floor participant is in an interconnected system, shall include the User ID; and

d. may send a Floor Queue Position Info message to the remaining users whose queued floor request position has changed in the active floor request queue, and if negotiated support of queueing of floor requests as specified in clause 14. The Floor Queue Position Info message:

i. shall include the queue position and floor priority in the Queue Info field;

ii. if the Floor Request message included a Track Info field, shall include the received Track Info field; and

iii. if the requesting user is in an interconnected system, shall include the Queued User ID field; and

e. shall remain in the 'G: Floor Taken' state.

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

##### 6.3.4.5.2 Enter the 'G: pending Floor Revoke' state

When entering this state the floor control arbitration logic in the floor control server:

1. shall send the Floor Revoke message to the permitted floor participant. The Floor Revoke message:

a. shall include the reason for sending the Floor Revoke message in the <Reject Cause> value in the Reject Cause field;

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, group is configured as multi-talker group, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

c. if the revoked user is in an interconnected system, shall include the User ID field;

2. shall start timer T3 (Stop talking grace) for which a Floor Revoke message has been sent; and

3. shall set the general state to 'G: pending Floor Revoke'.

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

##### 6.3.4.8.4 All final SIP responses received (R: final SIP responses)

Upon receiving an indication from the application and signalling plane that all invited constituent MCPTT groups have sent a final SIP response, the floor control arbitration logic:

1. if at least one application/vnd.3gpp.mcptt-floor-request+xml MIME body exists with the <floor-type> element set to "general":

a. shall select the floor participant with the highest priority as described in clause 4.1.1.4:

i. among the cached application/vnd.3gpp.mcptt-floor-request+xml MIME bodies with the <floor-type> element set to "general"; and

ii. the floor participant initialising the temporary group session as described in clause 4.1.1.4, if the floor participant initialising the temporary group session negotiated implicit floor request as specified in clause 14;

b. shall send a Floor Revoke message to all floor participants in the cached application/vnd.3gpp.mcptt-floor-request+xml MIME body with the <floor-type> element set to "general" that are not granted the permission to send media. The Floor Revoke message:

i. shall include the <Reject Cause> value set to '4' (Media Burst pre-empted) in the Reject Cause field;

ii. shall include information taken from the <track-info> element in the cached application/vnd.3gpp.mcptt-floor-request+xml MIME body with the <floor-type> element set to "general" in the Track Info field;

iii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

iv. if the revoked user is in an interconnected system, shall include the User ID field; and

c. if the floor participant selected to be granted the floor is one of invited constituent MCPTT groups:

i. shall convert the <track-info> element to a format of a Track Info field and cache the Track Info field associated with the floor control server state transition diagram for 'general floor control operation'; and

ii. shall enter the 'G: Taken' state as specified in the clause 6.3.4.4.2 using the selected floor participant as the requesting floor participant;

2. if at least one application/vnd.3gpp.mcptt-floor-request+xml MIME body exists with the <floor-type> element set to "dual":

a. shall select the floor participant with the highest priority as described in clause 4.1.1.4 among the cached application/vnd.3gpp.mcptt-floor-request+xml MIME bodies with the <floor-type> element set to "dual"; and

b. shall send a Floor Revoke message to all floor participants in the cached application/vnd.3gpp.mcptt-floor-request+xml MIME body with the <floor-type> element set to "dual" that are not granted the permission to send media. The Floor Revoke message:

i. shall include the <Reject Cause> value set to '4' (Media Burst pre-empted) in the Reject Cause field;

ii. shall include information taken from the <track-info> element in the cached application/vnd.3gpp.mcptt-floor-request+xml MIME body with the <floor-type> element set to "general" in the Track Info field;

iii. shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

iv. shall convert the <track-info> element to a format of a Track Info field and cache the Track Info field associated with floor control server state transition diagram for 'dual floor control operation';

v. shall enter the 'D: Floor Taken' state as specified in the clause 6.3.6.3.2 using the selected floor participant as the requesting floor participant; and

vi. if the revoked user is in an interconnected system, shall include the User ID field; and

3. if no cached application/vnd.3gpp.mcptt-floor-request+xml MIME with the <floor-type> element set to "general" body exists:

a. if an implicit floor request is negotiated as described in clause 14 when the temporary group session was established, shall enter the 'G: Taken' state as specified in the clause 6.3.4.4.2; and

b. if an implicit floor request is not negotiated as described in clause 14 when the temporary group session was established, shall enter the 'G: Idle' state as specified in the clause 6.3.4.3.2.

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

##### 6.3.5.2.2 SIP Session initiated

When a SIP Session is established and if:

1. the session is not a temporary group call session;

2. the session is a temporary group call session and the associated floor participant is an invited MCPTT client (i.e. not a constituent MCPTT group); or

3. the session is not an ambient listening call;

then:

NOTE 1: A MCPTT group call is a temporary group session when the <on-network-temporary> element is present in the <list-service> element as specified in 3GPP TS 24.481 [12].

1. if an MCPTT client initiates an MCPTT call with an implicit floor request, and the MCPTT call does not exist yet, the floor control interface towards the MCPTT client in the floor control server:

a. shall initialize a general state machine as specified in clause 6.3.4.2.2; and

NOTE 2: In the clause 6.3.4.2.2 the 'general floor control operation' state machine will continue with the initialization of the 'general floor control operation' state machine.

b. shall enter the state 'U: permitted' as specified in the clause 6.3.5.5.2;

2. if the associated MCPTT client rejoins an ongoing MCPTT call without an implicit floor request or initiates or joins a chat group call without an implicit floor request or attempts to initiate an already existing MCPTT call without an implicit floor request, and

a. if an MCPTT call already exists but no MCPTT client has the permission to send a media, the floor control interface towards the MCPTT client in the floor control server:

i. should send a Floor Idle message to the MCPTT client. The Floor Idle message:

A. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1; and

B. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

C. if the MCPTT client is in an interconnected system, shall include the User ID field; and

ii. shall enter the state 'U: not permitted and Floor Idle' as specified in the clause 6.3.5.5.2;

b. if an MCPTT call is initiated, the floor control interface towards the MCPTT client in the floor control server:

i. shall enter the state 'U: not permitted and Floor Idle' as specified in the clause 6.3.5.5.2; and

ii. shall initialize a general state machine as specified in clause 6.3.4.2.2; and

NOTE 3: In the clause 6.3.4.2.2 the general state machine will continue with the initialization of the general state machine.

c. if another MCPTT client has the permission to send a media, the floor control interface towards the MCPTT client in the floor control server:

i. should send a Floor Taken message to the MCPTT client. The Floor Taken message:

A. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

B. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

C. if the session is a broadcast group call, shall include the Permission to Request the floor field set to '0';

D. if the session is not a broadcast group call, may include the Permission to Request the floor field set to '1'; and

E. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications

ii. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2;

3. if the associated floor participant attempts to initiate an already existing MCPTT call with an implicit floor request, and

a. if no MCPTT client has the permission to send media, the floor control interface towards the MCPTT client in the floor control server:

i. shall process the implicit floor request as if a Floor Request message was receive as specified in clause 6.3.4.3.3; and

ii. shall enter the state 'U: permitted' as specified in the clause 6.3.5.5.2;

b. if the MCPTT client negotiated support of queueing floor requests as specified in clause 14 and if another MCPTT client has the permission to send media, the floor control interface towards the MCPTT client in the floor control server:

i. shall set the priority level to the negotiated maximum priority level that the MCPTT client is permitted to request, except for pre-emptive priority, when high priority is used;

NOTE 4: The maximum floor priority the floor participant is permitted to request is negotiated in the "mc\_priority" fmtp attribute as specified in clause 14.

NOTE 5: The initial implicit floor request will not result in pre-emption when an MCPTT client is joining an ongoing MCPTT call. If the MCPTT client wants to pre-empt the current MCPTT client that is sending media, an explicit floor request with pre-emptive floor priority is required.

ii. shall insert the MCPTT client into the active floor request queue to the position immediately following all queued floor requests with the same floor priority;

iii. shall send a Floor Queue Position Info message to the MCPTT client. The Floor Queue Position Info message:

A shall include the queue position and floor priority in the Queue Info field;

B. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

C. if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user;

iv. should send a Floor Queue Position Info message with the updated status to the MCPTT clients in the active floor request queue which negotiated queueing of floor requests as specified in clause 14, which have requested the queue status, whose queue position has been changed since the previous Floor Queue Position Info message and which is not the joining MCPTT client. The Floor Queue Position Info message:

A shall include the queue position and floor priority in the Queue Info field;

B. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

C. if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user; and

v. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2; and

c. if the MCPTT client did not negotiate queueing of floor requests and if another MCPTT client has the permission to send a media, the floor control interface towards the MCPTT client in the floor control server:

i. shall send a Floor Taken message to the MCPTT client. The Floor Taken message:

A. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

B. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1;

C. if the session is a broadcast group call, shall include the Permission to Request the floor field set to '0';

D. if the session is not a broadcast group call, may include the Permission to Request the floor field set to '1'; and

E. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

ii. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2; and

4. if the MCPTT client is invited to the MCPTT call and

a. if another MCPTT client has permission to send a media, the floor control interface towards the MCPTT client in the floor control server:

i. should send a Floor Taken message to the MCPTT client. The Floor Taken message:

A. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

B. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1;

C. if the session is a broadcast group call, shall include the Permission to Request the floor field set to '0';

D. if the session is not a broadcast group call, may include the Permission to Request the floor field set to '1'; and

E. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

ii. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2; and

b. if no other MCPTT client has the permission to send a media; the floor control interface towards the MCPTT client in the floor control server:

i. should send a Floor Idle message to the MCPTT client. The Floor Idle message:

A. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

B. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

C. if the MCPTT client is in an interconnected system, shall include the User ID field; and

ii. shall enter the 'U: not permitted and Floor Idle' state as specified in the clause 6.3.5.3.2.

When a SIP Session is established and if the session is a temporary group call session and,

1. if the associated floor participant is a constituent MCPTT group; or

2. if the associated floor participant is the initiator of the temporary group session;

then the floor control interface towards the MCPTT client:

1. shall initialize a general state machine as specified in clause 6.3.4.2.2, if not already initiated; and

2. shall enter the 'U: not permitted and initiating' state as specified in clause 6.3.5.10.2.

When a SIP Session is established and if the session is an ambient listening call session then the floor control interface towards the MCPTT client:

1. if the floor is granted to the associated floor participant

a. shall forward the "Floor Granted" message to the associated floor participant; and

b. shall enter the state 'U: permitted' as specified in the clause 6.3.5.5.2; and

2. if the floor is not granted to the associated floor participant

a. shall forward the "Floor Taken" message to the associated floor participant; and

b. shall enter the state 'U: not permitted Floor Taken' as specified in the clause 6.3.5.4.2.

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

##### 6.3.5.3.4 Receive Floor Request message (R: Floor Request)

Upon receiving a Floor Request message from the associated floor participant, the floor control interface towards the MCPTT client in the floor control server:

1. if the session is not a broadcast group call or if the session is a broadcast group call and the associated floor participant is the initiator of the broadcast group call, shall forward the Floor Request message to the floor control server arbitration logic;

NOTE 1 Initiating a broadcast group call is done in the application and signalling plane using SIP. Initiating or upgrading a call to an emergency call or an imminent peril call is done in the application and signalling plane using SIP.

2. if the session is a broadcast group call and the associated floor participant is not the initiator of the broadcast group call, shall send a Floor Deny message to the associated floor participant. The Floor Deny message:

a. shall include in the Reject Cause field the <Reject Cause> value cause #5 (Receive only);

b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value;

c. may set the first bit in the subtype of the Floor Deny message to '1' (Acknowledgment is required) as described in clause 8.2.2;

NOTE 2: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

d. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

e. if the requesting user is in an interconnected system, shall include the User ID field set to the MCPTT ID of the requesting user; and

3. shall remain in the 'U: not permitted and Floor Idle' state.

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

##### 6.3.5.3.7 Receive Floor Release message (R: Floor Release)

Upon receiving a Floor Release message from the associated floor participant, the floor control interface towards the MCPTT client in the floor control server:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. shall send a Floor Idle message to the associated floor participant. The Floor Idle message:

a. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

b. may set the first bit in the subtype of the Floor Idle message to '1' (Acknowledgment is required) as described in clause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

c. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

d. if the MCPTT client is in an interconnected system, shall include the User ID field;

3. if a Track Info field is included in the Floor Release message, shall use the topmost <Participant Reference> value and the SSRC in the received Floor Release message to check if the floor participant has a queued floor request;

4. if a no Track Info field is included in the Floor Release message, shall use the SSRC in the received Floor Release message to check if the floor participant has a queued floor request;

5 if the floor participant has a floor request in the queue, shall remove the queued floor request from the queue; and

6. shall remain in the state 'U: not permitted and Floor Idle' state.

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

##### 6.3.5.3.8 Receive RTP media packets (R: media)

Upon receiving an indication from the network media interface that RTP media packets are received with payload from the associated floor participant and if Floor Release message was received in the previous 'U: permitted' state, the floor control interface towards the MCPTT client in the floor control server:

NOTE: Reception of unauthorized RTP media packets can only happen if the associated floor participant is in an MCPTT client. If the associated floor participant is a floor control server interface in a non-controlling MCPTT function of an MCPTT group, the unauthorized RTP media packets are handled in the non-controlling MCPTT function.

1. shall request the network media interface in the MCPTT server to not forward the received RTP media packets to the media distributor in the MCPTT server;

2. shall send a Floor Revoke message to the associated floor participant. The Floor Revoke message:

a. shall include the Reject Cause field with the <Reject Cause> value set to #3 (No permission to send a Media Burst);

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

c. if the revoked user is in an interconnected system, shall include the User ID field; and

3. shall enter the 'U: not permitted but sends media' state as specified in the clause 6.3.5.7.2.

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

##### 6.3.5.4.4 Receive Floor Request message (R: Floor Request)

Upon receiving a Floor Request message from the associated floor participant, if the group is configured for audio cut-in floor control, the floor control interface towards the MCPTT client in the floor control server:

1. shall forward the Floor Request message to the floor control server arbitration logic; and

2. shall remain in the 'U: not permitted and Floor Taken' state.

Upon receiving a Floor Request message from the associated floor participant, if the group is configured for multi-talker floor control, if the number of granted floor participants is below the configured maximum; and the MCPTT ID of the associated floor participants is in the list of allowed configured multi-talkers, the floor control interface towards the MCPTT client in the floor control server:

1. shall forward the Floor Request message to the floor control server arbitration logic; and

2. shall remain in the 'U: not permitted and Floor Taken' state.

If the group is not configured for multi-talker floor control, upon receiving a Floor Request message, without a Floor Indicator field or with the Floor Indicator field included where the D-bit (Emergency call) and the E-bit (Imminent peril call) are set to '0', from the associated floor participant, and if the MCPTT client did not negotiate queueing of floor requests or did not include a priority in the "mc\_priority" fmtp attribute as specified in clause 14, the floor control interface towards the MCPTT client in the floor control server:

1. shall send a Floor Deny message to the associated floor participant. The Floor Deny message:

a. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);

b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value;

c. if the Floor Request included a Track Info field, shall include the received Track Info field; and

d. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

2. may set the first bit in the subtype of the Floor Deny message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE 1: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3. shall remain in the 'U: not permitted and Floor Taken' state.

Upon receiving a Floor Request message from the associated floor participant and the session is a broadcast group call or an ambient listening call, the floor control interface towards the MCPTT client in the floor control server:

1. shall send a Floor Deny message to the associated floor participant. The Floor Deny message:

a. shall include in the Reject Cause field the <Reject Cause> value cause #5 (Receive only);

b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and

c. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

2. may set the first bit in the subtype of the Floor Deny message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE 2: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3. shall remain in the 'U: not permitted and Floor Taken' state.

Upon receiving a Floor Request message from the associated floor participant and if the MCPTT client negotiated support of queueing of floor requests or included a floor priority in the "mc\_priority" or both as described in specified in clause 14 and according to local policy, the floor control interface towards the MCPTT client in the floor control server:

NOTE 3: In case the group is configured for multi-talker floor control, then the following steps are only carried out in case the maximum number of allowed talkers is reached.

1. shall determine the effective priority level as described in clause 4.1.1.4 by using the following parameters:

a. the floor priority shall be:

i. the lower of the floor priority included in Floor Request message and the negotiated maximum floor priority that the MCPTT client is permitted to request, if the MCPTT client negotiated floor priority "mc\_priority" and floor priority is included in the Floor Request message;

ii. the receive only floor priority, if the MCPTT client negotiated floor priority in the "mc\_priority" fmtp attribute and if the negotiated maximum floor priority that the MCPTT client is permitted to request is "receive only";

iii. the default priority, if the MCPTT client negotiated floor priority in the "mc\_priority" fmtp attribute, if the negotiated maximum floor priority that the MCPTT client is permitted to request is not receive only and if the floor priority is not included in the Floor Request message; and

iv. the default priority, if the MCPTT client did not negotiate floor priority in the "mc\_priority" fmtp attribute; and

b. the type of the call shall be

i. if the Floor Indicator field is included in the message and the D-bit (Emergency call bit) is set to '1', determined to be an emergency call;

ii. if the Floor Indicator field is included in the message and the E-bit (Imminent peril call) is set to '1', determined to be an imminent peril call; and

iii. if the Floor Indicator field is not included in the message or the Floor Indicator field is included and neither the D-bit (Emergency call bit) nor the E-bit (Imminent peril call) is set to '1', determined to be a normal call;

2. if the effective priority is "receive only", the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Floor Deny message to the floor participant. The Floor Deny message:

i. shall include in the Reject Cause field the <Reject Cause> value cause #5 (Receive only);

ii. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value;

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

b. shall remain in the 'U: not permitted and Floor Taken' state;

3. if

a. a Track Info field is included in the Floor Request message, shall use the topmost <Participant Reference> value and the SSRC in the received Floor Request message to check if the floor participant has a queued floor request; or

b. a Track Info field is not included in the Floor Request message, shall use the SSRC in the received Floor Request message to check if the floor participant has a queued floor request;

4. if the floor participant already has a queued floor request with the same effective priority level, the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Floor Queue Position Info message to the requesting MCPTT client, if the MCPTT client negotiated support of queueing of floor requests as specified in clause 14. The Floor Queue Position Info message:

i. shall include the queue position and floor priority in the Queue Info field;

ii. if the Floor Request included a Track Info field, shall include the received Track Info field;

iii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

iv if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user; and

b. shall remain in the 'U: not permitted and Floor Taken' state

5. if the effective priority level is pre-emptive and there are no other pre-emptive requests in the active floor request queue and the effective priority level of the current MCPTT client with permission to send a media is not the pre-emptive priority, the floor control interface towards the MCPTT client in the floor control server:

a. shall forward the Floor Request message to the floor control server arbitration logic indicating that a Floor Request message with pre-emptive priority is received; and

b. shall remain in the 'U: not permitted and Floor Taken' state

NOTE 4: The Floor control server arbitration logic initiates revoking the permission to send media towards the current MCPTT client with the permission to send media as specified in the clause 6.3.4.4.7;

6. if the MCPTT client did not negotiate support of queueing of floor requests as specified in clause 14, the effective priority level is pre-emptive and either other pre-emptive request is queued or the effective priority level of the current MCPTT client with permission to send a media is the pre-emptive priority, the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Floor Deny message to the associated floor participant. The Floor Deny message:

i. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);

ii. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value;

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

b. shall remain in the 'U: not permitted and Floor Taken' state;

7. if the MCPTT client did not negotiate "queueing" and the effective priority level is not pre-emptive, the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Floor Deny message to the associated floor participant. The Floor Deny message:

i. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);

ii. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value;

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

b. shall remain in the 'U: not permitted and Floor Taken' state;

8. if the MCPTT client negotiated support of queueing of floor requests as specified in clause 14 and the effective priority level is not pre-emptive and the maximum queue length has not been reached, the floor control interface towards the MCPTT client in the floor control server:

a. shall insert the MCPTT client into the active floor request queue, if not inserted yet, or update the position of the MCPTT client in the active floor request queue, if already inserted, to the position immediately following all queued requests at the same effective priority level;

b. the floor control server shall send a Floor Queue Position Info message to the floor participant. The Floor Queue Position Info message:

i. shall include the queue position and floor priority in the Queue Info field;

ii. if the Floor Request included a Track Info field, shall include the received Track Info field;

iii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

iv if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user;

c. shall remain in the 'U: not permitted and Floor Taken' state; and

d. may set the first bit in the subtype of the Floor Queue Position message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE 5: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

9. if the MCPTT client negotiated support of queueing of floor requests as specified in clause 14 and the effective priority level is not pre-emptive and the maximum queue length has been reached, the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Floor Deny message to the associated floor participant. The Floor Deny message:

i. shall include in the Reject Cause field the <Reject Cause> value cause #7 (Queue Full);

ii. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value;

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if the group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

b. shall remain in the 'U: not permitted and Floor Taken' state.

##### 6.3.5.4.5 Receive Floor Release message (R: Floor Release)

Upon receiving a Floor Release message from the associated floor participant and if the MCPTT client did not negotiate support of queueing of floor requests or included a floor priority in the "mc\_priority" fmtp attribute as specified in clause 14, the floor control interface towards the MCPTT client in the floor control server:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. shall send a Floor Taken message to the associated floor participant. The Floor Taken message:

a. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

b. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

c. shall include the Permission to Request the floor field set to '0', if the floor participants are not allowed to request the floor;

d. if the Floor Release message included a Track Info field, shall include the received Track Info field;

e. may set the first bit in the subtype of the Floor Taken message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE 1: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

f. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

3. shall remain in the 'U: not permitted and Floor Taken' state.

Upon receiving a Floor Release message from the associated floor participant and if the MCPTT client negotiated support of queueing of floor requests as specified in clause 14, the floor control interface towards the MCPTT client in the floor control server:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. if

a. a Track Info field is included in the Floor Release message, shall use the topmost <Participant Reference> value and the SSRC in the received Floor Release message to check if the floor participant has a queued floor request; or

b. if a Track Info field is not included in the Floor Release message, shall use the SSRC in the received Floor Release message to check if the floor participant has a queued floor request;

3. shall remove the MCPTT client from the active floor request queue, if the MCPTT client was in the active floor request queue;

4. shall send a Floor Taken message to the associated floor participant. The Floor Taken message:

a. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

b. if the session is a broadcast group call, shall include the Permission to Request the floor field set to '0';

c. if the session is not a broadcast group call, may include the Permission to Request the floor field set to '1';

d. if a Track Info field is included in the Floor Release message, shall include the received Track Info field;

e. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1; and

f. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

5. may set the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE 2: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

6. shall remain in the 'U: not permitted and Floor Taken' state.

##### 6.3.5.4.6 Receive RTP media packets (R: media)

Upon receiving an indication from the network media interface in the MCPTT server that RTP media packets with payload are received from the associated floor participant, the floor control interface towards the MCPTT client in the floor control server:

NOTE: Reception of unauthorized RTP media packets can only happen if the associated floor participant is in an MCPTT client. If the associated floor participant is a floor control server interface in a non-controlling MCPTT function of an MCPTT group, the unauthorized RTP media packets are handled in the non-controlling MCPTT function.

1. shall request the network media interface to not forward the RTP media packets to the media distributor in the MCPTT server;

2. shall send a Floor Revoke message to the associated floor participant. The Floor Revoke message:

a. shall include the Reject Cause field with the Reject Cause value set to #3 (No permission to send a Media Burst);

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

c. if the revoked user is in an interconnected system, shall include the User ID field; and

3. shall enter the 'U: not permitted but sends media' state as specified in the clause 6.3.5.7.2.

##### 6.3.5.4.7 Send Floor Queue Position Info message (R: Floor Queue Position Request)

Upon receiving a Floor Queue Position Request message from the associated floor participant, the floor control interface towards the MCPTT client in the floor control server:

1. shall send the Floor Queue Position Info message. The Floor Queue Position Info message:

a. shall include the queue position and floor priority in the Queue Info field;

b. if a Track Info field is included in the Floor Queue Position Info message, shall include the received Track Info field;

c. may include the first bit in the subtype of the Floor Queue Position Info message set to '1' (Acknowledgment is required) as described in clause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

d. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

e. if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user; and

3. shall remain in the 'U: not permitted and Floor Taken' state.

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

##### 6.3.5.4.12 Receive Queued Floor Requests message (R: Queued Floor Requests)

Upon receiving a Queued Floor Requests message, including a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '0' (Cancel Request), from the associated floor participant:

1. if the MCPTT ID of the associated floor participant is an authorized user (e.g dispatcher) to cancel the queued floor requests of other MCPTT users (the list of users specified in a request or all the users), the floor control interface towards the MCPTT client in the floor control server:

a. shall forward the Queued Floor Requests message to the floor control server arbitration logic; and

b. shall remain in the 'U: not permitted and Floor Taken' state; and

2. if the MCPTT ID of the associated floor participant is not an authorized user (participant type is not dispatcher, dispatch supervisor or MC service administrator) to cancel the queued floor requests of other MCPTT users (the list of specified users in a request or all the users), the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Queued Floor Requests message to the associated floor participant as described in clause 8.2.15. The Queued Floor Requests message:

i. shall include a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '1' (Cancel Result);

ii. shall include a Queued Floor Requests Result field with the Value set to '1' (Not authorized to remove the queued floor requests of all users specified in the List of Queued Users field in a message or all the queued floor requests from the floor request queue);

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if the associated floor participant is in an interconnected system, shall include the User ID field set to the MCPTT ID of the associated floor participant;

b. may set the first bit in the subtype of the Queued Floor Requests message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

c. shall remain in the 'U: not permitted and Floor Taken' state.

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

##### 6.3.5.5.3 Receive Floor Release message (R: Floor Release)

Upon receiving a Floor Release message from the associated floor participant, the floor control interface towards the MCPTT client in the floor control server:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. if an indication that the participant is overriding without revoke is stored,

a. shall forward the Floor Release message to the 'dual floor control operation' state machine of the floor control arbitration logic in the MCPTT server with the first bit in the subtype of the Floor Release message set to '0' (Acknowledgment is not required), if not already set;

b. shall remove the indication that the participant is overriding without revoke; and

c. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2;

3. if an indication that the participant is overridden without revoke is stored,

a. shall forward the Floor Release message to the general floor control operation state machine of the floor control arbitration logic in the MCPTT server with the first bit in the subtype of the Floor Release message set to '0' (Acknowledgment is not required), if not already set;

b. shall remove the indication that the participant is overridden without revoke; and

c. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2; and

4. if no indication is stored:

a. shall forward the Floor Release message to the general floor control operation state machine of the floor control arbitration logic in the MCPTT server with the first bit in the subtype of the Floor Release message set to '0' (Acknowledgment is not required), if not already set; and

b. shall remain in the 'U: permitted' state.

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

##### 6.3.5.5.11 Receive Queued Floor Requests message (R: Queued Floor Requests)

Upon receiving a Queued Floor Requests message, including a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '0' (Cancel Request), from the associated floor participant:

1. if the MCPTT ID of the associated floor participant is an authorized user (e.g dispatcher) to cancel the queued floor request of other MCPTT users (the list of specified users in a request or all the users), the floor control interface towards the MCPTT client in the floor control server:

a. shall forward the Queued Floor Requests message to the floor control server arbitration logic; and

b. shall remain in the 'U: permitted' state; and

2. if the MCPTT ID of the associated floor participant is not an authorized user (If participant type is not dispatcher, dispatch supervisor or MC service administrator) to cancel the queued floor request of other MCPTT users (the list of specified users in a request or all the users), the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Queued Floor Requests message to the associated floor participant as described in clause 8.2.15. The Queued FloorRequests message:

i. shall include a Queued Floor Requests Purpose field with the Queued Floor Requests Purpose value set to '1' (Cancel Result);

ii. shall include in the Queued Floor Requests Result Value set to '1' (Not authorized to remove the queued floor requests of all users specified in the List of Queued Users field in a message or all the queued floor requests from the floor request queue);

iii. if the Floor Request included a Track Info field, shall include the received Track Info field; and

iv. if the associated floor participant is in an interconnected system, shall include the User ID field set to the MCPTT ID of the associated floor participant;

b. may set the first bit in the subtype of the Queued Floor Requests message to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

c. shall remain in the 'U: permitted' state.

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

##### 6.3.5.6.5 Receive Floor Release message (R: Floor Release)

Upon receiving a Floor Release message from the associated floor participant, the floor control interface towards the MCPTT client in the floor control server:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. if the G-bit in the Floor Indicator is set to '1' (Dual floor):

a. if the state in the 'general floor control operation' state machine is 'G: Taken':

i. shall send a Floor Taken message to the associated floor participant. The Floor Taken message:

A. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field of the permitted MCPTT client and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested; and

B. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

ii. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2; and

b. if the state in the 'general floor control operation' state machine is 'G: Idle':

i. shall send a Floor Idle message to the associated floor participant;

ii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

C. if the floor participant is in an interconnected system, shall include the User ID field set to the MCPTT ID of the floor participant; and

iii. shall enter the 'U: not permitted and Floor Idle' state as specified in the clause 6.3.5.3.2; and

3. if the G-bit in the Floor Indicator is set to '0':

a. shall forward the Floor Release message to the floor control server arbitration logic; and

b. shall remain in the state 'U: pending Floor Revoke'.

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

##### 6.3.5.7.3 Timer T8 (Floor Revoke) expired

On expiry of timer T8 (Floor Revoke), the floor control interface towards the MCPTT client in the floor control server:

1. shall send a Floor Revoke message to the associated floor participant. The Floor Revoke message:

a. shall include in the Rejection Cause field the <Rejection Cause> value set to #3 (No permission to send a Media Burst);

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

c. if the revoked user is in an interconnected system, shall include the User ID field;

2. shall restart timer T8 (Floor Revoke); and

3. shall remain in the 'U: not permitted but sends media' state.

NOTE: The number of times the floor control server retransmits the Floor Revoke message and the action to take when the floor control server gives up is an implementation option. However, the recommended action is that the MCPTT client is disconnected from the MCPTT call.

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

##### 6.3.5.7.4 Receive Floor Release message (R: Floor Release)

Upon receiving a Floor Release message, the floor control interface towards the MCPTT client in the floor control server:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. if the general state is 'G: Floor Idle', the floor control interface towards the MCPTT client in the floor control server:

a. shall send the Floor Idle message. The Floor Idle message:

i. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1;

ii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

iii. if the MCPTT client is in an interconnected system, shall include the User ID field; and

b. shall enter the 'U: not permitted and Floor Idle' state as specified in the clause 6.3.5.3.2; and

3. if the general state is 'G: Floor Taken', the floor control interface towards the MCPTT client in the floor control server:

a. shall send a Floor Taken message. The Floor Taken message:

i. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

ii. if the session is a broadcast group call, shall include the Permission to Request the floor field set to '0';

iii. if the session is not a broadcast group call, may include the Permission to Request the floor field set to '1';

iv. may include the first bit in the subtype of the Floor Taken message set to '1' (Acknowledgment is required) as described in clause 8.2.2; and

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

v. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

b. shall enter the 'U: not permitted and Floor Taken' state as specified in the clause 6.3.5.4.2.

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

##### 6.3.5.10.5 Receive Floor Request message (R: Floor Request)

Upon receipt of a Floor Request message, the floor control interface towards the MCPTT client:

1. shall determine the effective priority level as described in clause 4.1.1.4;

2. shall put the Floor Request message in the active floor request queue according to the determined effective priority level;

3. if the <Queueing Capability> value in the Track Info field is set to '1' (the floor participant in the MCPTT client supports queueing), shall send a Floor Queue Position Info message to the requesting non-Controlling MCPTT function, The Floor Queue Position Info message:

a. shall include the queue position and floor priority in the Queue Info field;

b. shall include the received Track Info field;

c. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

d. if the requesting user is in an interconnected system, shall include the Queued User ID field set to the MCPTT ID of the requesting user;

4 if the <Queueing Capability> value in the Track Info field is set to '0' (the floor participant in the MCPTT client does not support queueing), shall send the Floor Deny message. The floor Deny message:

NOTE: A Floor Request from a MCPTT client in a constituent group can be received without the queueuing capability if a floor participant in an ongoing constituent MCPTT group request floor while the floor was idle during the merging process.

a. shall include in the Reject Cause field the <Reject Cause> value cause '1' (Another MCPTT client has permission);

b. shall include the received Track Info field; and

c. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

5. shall remain in the 'U: not permitted and initiating' state.

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

##### 6.3.5.10.7 Receive a Floor Release message (S: Floor Release)

Upon receiving a Floor Release message from the associated floor participant, the floor control interface towards the MCPTT client:

1. if the first bit in the subtype of the Floor Release message is set to '1' (Acknowledgment is required) as described in clause 8.2.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '4' (Floor Release);

b. shall include the Source field set to '2' (the controlling MCPTT function is the source); and

c. if the associated floor participant is in an interconnected system, shall include the User ID field;

2. shall use the topmost <Participant Reference> value and the SSRC in the Track Info field of the received Floor Release message to check if the floor participant has a queued floor request and if not, check if there is a floor request in one of the cached application/vnd.3gpp.mcptt-floor-request+xml MIME bodies;

3. shall remove the MCPTT client from the active floor request queue or the cached application/vnd.3gpp.mcptt-floor-request+xml MIME body, if the MCPTT client was in the active floor request queue or in the application/vnd.3gpp.mcptt-floor-request+xml MIME body; and

4. shall remain in the 'U: not permitted and initiating' state.

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

##### 6.3.6.3.2 Enter state 'D: Floor Taken'

When entering this state the floor control arbitration logic in the floor control server:

1. shall send a Floor Granted message to the requesting floor participant. The Floor Granted message:

a. shall include the value of the T12 (Stop talking dual) timer in the Duration field;

b. shall include the granted priority in the Floor priority field;

c. if a Track Info field associated with the floor control server state transition diagram for 'dual floor control operation' is stored, shall include the stored Track Info field;

d. shall include the Floor Indicator field with the G-bit set to '1' (Dual floor);

e. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

f. if non-controlling MCPTT functions are involved, shall include the SSRC of granted floor participant; and

g. if the granted user is in an interconnected system, shall include the User ID field;

2. shall send a Floor Idle message to any non-controlling MCPTT functions involved in the session and to those floor participants controlled by the controlling MCPTT function that will only listen to RTP media from the overriding MCPTT client according to local policy. The Floor Idle message:

NOTE 1: The non-controlling MCPTT function will send the Floor Idle message to those floor participants controlled by the non-controlling MCPTT function that will only listen to RTP media from the overriding MCPTT client according to local policy when the non-controlling MCPTT function receives the Floor Taken with the G-bit set to '1' (Dual floor) in the Floor Indicator field.

i. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1; and

ii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

3. shall send a Floor Taken message to any non-controlling MCPTT functions involved and to floor participants controlled by the controlling MCPTT function that will listen to the RTP media from the overriding MCPTT client according to local policy. The Floor Taken message:

NOTE 2: The MCPTT client overridden by the overriding MCPTT client is still sending voice (overridden). The list of floor participants that receive the overriding, overridden, or both transmissions is based on configuration.

a. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

b. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

c. shall include the Floor Indicator field with the G-bit set to '1' (Dual floor); and

d. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

4. shall start the T11 (End of RTP dual) timer; and

5. shall enter the state to 'D: Floor Taken' state.

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

##### 6.3.6.3.4 Timer T12 (Stop talking dual) expired

On expiry of the T12 (Stop talking dual) timer the floor control arbitration logic in the floor control server:

1. shall stop the T11 (End of RTP dual) timer;

2. shall request the media distributor in the MCPTT server to stop distributing RTP media packets to other MCPTT client;

3. shall send the Floor Revoke message to the permitted participant. The Floor Revoke message:

a. shall include the Reject Cause field with the <Reject Cause> value set to #2 (Media burst too long) in the Floor Revoke message sent in clause 6.3.4.5.2;

b. shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

c. if a Track Info field associated with the dual floor is stored, shall include the stored Track Info field;

d. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

e. if the revoked user is in an interconnected system, shall include the User ID field;

4. shall remove the stored Track info field associated with the dual floor;

5. if the state in the 'general floor control operation' state machine is 'G: Taken';

a. shall send a Floor Taken message to all non-controlling functions (if the session is a temporary group session involving non-controlling MCPTT functions) and to those floor participants that only received RTP media from the overriding MCPTT client. The Floor Taken message:

i. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field of the permitted MCPTT client and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested; and

ii shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1;

6. if the state in the 'general floor control operation' state machine is 'G: Idle', shall send a Floor Idle message to all floor participants. The Floor Idle message:

a. shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1; and

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

7. shall release all resources reserved in the media plane including the instances used for the Floor control server state transition diagram for 'dual floor control operation'; and

8. shall enter the 'Start-stop' state.

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

##### 6.3.6.3.6 Receive Floor Release message (R: Floor Release)

Upon receiving a Floor Release message the floor control arbitration logic in the floor control server:

1. shall request the media distributor in the MCPTT server to stop distributing RTP media packets received from the overriding MCPTT client to other MCPTT client;

2. shall stop the T12 (Stop talking dual) timer, if running;

3. shall stop the T11 (End of RTP dual) timer;

4. shall release all resources reserved in the media plane including the instances used for the Floor control server state transition diagram for 'dual floor control operation' and any running timers associated with the state machine;

5. if the first bit in the subtype of the Floor Release message is set to '1' (acknowledgement is required) as specified in clause 8.2.2:

a. shall send a Floor Ack message. The Floor Ack message:

i. shall set the Source field to the value '2' (the controlling MCPTT function is the source);

ii. shall set the Message Type field to the value '4'( Floor Release); and

iii. if the associated floor participant is in an interconnected system, shall include the User ID field;

6. shall send a Floor Idle message to any non-controlling MCPTT functions, to the overridden floor participant and to those floor participants controlled by the controlling MCPTT functions receiving RTP media from the overriding MCPTT client. The Floor Idle message:

a. shall include an Floor Indicator field with the G-bit set to '1' (Dual floor);

b shall include a Message Sequence Number field with a <Message Sequence Number> value increased with 1; and

c. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications;

7. if the state in the 'general floor control operation' state machine is 'G: Taken',

a. shall send a Floor Taken message to any non-controlling MCPTT functions and to those floor participants that only received RTP media from the overriding MCPTT client. The Floor Taken message:

i. shall include the granted MCPTT user's MCPTT ID in the Granted Party's Identity field of the permitted MCPTT client and may include the functional alias of the granted MCPTT user in the Functional Alias field, if privacy is not requested;

ii. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1; and

iii. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

8. if the state in the 'general floor control operation' state machine is 'G: Idle', shall send a Floor Idle message to all floor participants;. The Floor Idle message:

a. shall include a Message Sequence Number field with a Message Sequence Number value increased with 1; and

b. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

9. shall enter the 'Start-stop' state.

##### 6.3.6.3.7 Receive Floor request message from permitted floor participant (R: Floor Request)

Upon receiving a Floor Request message from the floor participant that has been granted permission to send overriding media, the floor control arbitration logic in the floor control server:

1. shall send a Floor Granted message to the previously granted floor participant. The Floor Granted message:

a. shall include the value of the T12 (Stop talking dual) timer in the Duration field;

b. shall include the granted priority in the Floor priority field;

c. if the Floor Request message included a Track Info field, shall include the received Track Info field;

d. if a group call is a broadcast group call, a system call, an emergency call, an imminent peril call, or a temporary group session, shall include the Floor Indicator field with appropriate indications; and

e. if the granted user is in an interconnected system, shall include the User ID field; and

2. shall remain in the 'D: Floor Taken' state.

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

##### 6.5.2.3.3 Start acting as a non-controlling MCPTT function (Step 2)

When receiving a request from the application and signalling plane to finalize the switch to non-controlling MCPTT function behaviour, the floor control server:

1. shall start acting as a floor control server interface;

2. if an active floor request queue exists, for each queued floor request in the active floor request queue:

NOTE: The active floor request queue was built up when the non-controlling MCPTT function was acting as a floor control server.

a. shall send a Floor Request message to the floor control server. The Floor Request:

i. shall include all fields included by the floor participant;

ii. if a Track Info field is included, shall include the temporary identifier at the end of the <Floor Participant Reference> value item;

iii. if a Track Info field is not included, shall include a Track Info field populated as follows:

A. shall include the "mc\_queueing" fmtp attribute value negotiated as specified in clause 14 in the <Queueing Capability> value;

B. shall include a <Participant Type> value based on the <participant-type> element specified in 3GPP TS 24.481 [12], if value in the <participant-type> element is available, otherwise set the <Participant Type> value to "unknown"; and

C. shall include the temporary identifier as the first <Floor Participant Reference> value; and

iv. if the controlling function is in an interconnected system, shall include the User ID field set to the MCPTT ID of the queued user;

3. if an active floor request queue exists, shall move the active floor request queue to a passive floor request queue; and

4. shall perform the actions in the clause 6.5.4.

When receiving an indication from the application and signalling plane that an MCPTT client has joined the session, the floor participant interface shall perform the actions in clause 6.5.5.

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

### 8.2.5 Floor Granted message

The Floor Granted message is sent by the floor control server to inform the requesting floor participant that it has been granted the permission to send media.

The Floor Granted message is used in the off-network mode and in the on-network mode. In the on-network mode the Floor Granted message is only used over the unicast bearer.

Table 8.2.5-1 shows the content of the Floor Granted message.

Table 8.2.5-1: Floor Granted message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor control server/floor arbitrator |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Duration field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of granted floor participant field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Priority field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queue Size field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of queued floor participant field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queued User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queue Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant. However, any set of Queue size field, SSRC of queued floor participant field, Queued User ID field and the Queue Info field shall be kept together.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor control server for on-network and floor arbitrator for off-network.

The content of the SSRC field is coded as specified in IETF RFC 3550 [3].

**Duration:**

The Duration field is coded as specified in clause 8.2.3.3.

**SSRC of granted floor participant:**

The SSRC of granted floor participant is coded as specified in clause 8.2.3.16.

**Floor Priority:**

The Floor Priority field contains the granted floor priority and is coded as specified in clause 8.2.3.2.

**User ID:**

The User ID field carries the MCPTT ID of the floor participant granted the floor. The User ID field is coded as described in clause 8.2.3.8.

**Queue Size:**

The Queue Size field is only applicable in off-network and contains the numbers of queued MCPTT clients in the MCPTT call.

The Queue Size field is coded as specified in clause 8.2.3.9.

For each waiting floor participant the following set of fields are included:

1. the SSRC of queued floor participant;

2. the Queued User ID field; and

3. the Queue info field.

The set occurs as many times as the <Queue size> value in the Queue size field.

**SSRC of queued floor participant:**

The SSRC of queued floor participant is only applicable in off-network and carries the SSRC of the floor participant in the queue.

The content of the SSRC of queued floor participant is coded as the SSRC specified in IETF RFC 3550 [3].

**Queued User ID:**

The Queued User ID field is only applicable in off-network and contains the MCPTT ID of the floor participant in the queue.

The Queued User ID field is coded as specified in clause 8.2.3.11.

**Queue Info:**

The Queue Info field is only applicable in off-network and defines the queue position and granted floor priority in the queue.

The Queue Info field is coded as specified in clause 8.2.3.5.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

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

#### 8.2.6.1 General

The Floor Deny message is sent as an action from the floor control server to the requesting floor participant to inform that the floor request was rejected.

The Floor Deny message is used in the off-network mode and in the on-network mode. In the on-network mode the Floor Deny message is only used over the unicast bearer.

Table 8.2.6.1-1 shows the content of the Floor Deny message.

Table 8.2.6.1-1: Floor Deny message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor control server/floor arbitrator |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Reject Cause field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor control server for on-network and floor arbitrator for off-network.

The content of the SSRC field is coded as specified in IETF RFC 3550 [3].

**Reject Cause:**

The Reject Cause field includes the reason for the rejecting the floor request and can be followed by a text-string explaining why the floor request was rejected. Therefore the length of the packet will vary depending on the size of the application dependent field.

The Reject Cause field contains:

1. a <Reject Cause> value; and

2. a <Reject Phrase> value.

Available <Reject Cause> values are listed in clause 8.2.6.2. The Reject Cause field is coded as described in clause 8.2.3.4.

**User ID:**

The User ID carries the MCPTT ID of the requesting floor participant to which the Floor Deny message is sent.

The User ID field is coded as specified in clause 8.2.3.8.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

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

### 8.2.7 Floor Release message

The Floor Release message is sent as an action from the floor participant to the floor control server to inform that the floor can be released.

The Floor Release message can also be sent if the floor participant has a request in the floor request queue. In this case, the Floor Release message is sent to cancel the floor request in the queue.

The Floor Release message is used in the off-network mode and in the on-network mode. In the on-network mode the Floor Release message is only used on the unicast bearer.

Table 8.2.7-1 shows the content of the Floor Release message.

Table 8.2.7-1: Floor Release message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor participant with permission to send media |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor participant with permission to send media.

The content of the SSRC field is coded as specified in IETF RFC 3550 [3].

**User ID:**

The User ID field carries the MCPTT ID of the floor participant sending the floor release message.

The User ID field is coded as specified in clause 8.2.3.8.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

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

### 8.2.8 Floor Idle message

The Floor Idle message is sent as an action from the floor control server to the floor participant indicating that no floor participant has permission to send media.

The Floor Idle message is only used in the on-network mode. The Floor Idle message is used over both the unicast and MBMS bearer.

Table 8.2.8-1 shows the content of the Floor Idle message.

Table 8.2.8-1: Floor Idle message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length=2 |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor control server |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Message Sequence Number field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor control server.

The content of the SSRC field is coded as specified in IETF RFC 3550 [3].

**Message Sequence Number:**

The Message Sequence Number field is coded as specified in to clause 8.2.3.10.

**Track Info:**

The Track Info field shall be included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**User ID:**

The User ID field carries the MCPTT ID of the floor participant being informed about the idle floor.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

### 8.2.9 Floor Taken message

The Floor Taken message is sent as an action from the floor control server to inform non-requesting floor participant(s) that someone has been granted permission to send media.

The Floor Taken message is used in the off-network mode and in the on-network mode. In the on-network mode the Floor Taken message is used over both the unicast and MBMS bearer.

Table 8.2.9-1 shows the content of the Floor Taken message.

Table 8.2.9-1: Floor Taken message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor control server/floor arbitrator |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Granted Party's Identity field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Permission to Request the Floor field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Message Sequence Number field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of granted floor participant field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| List of Granted Users field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| List of SSRCs of granted floor participants field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| List of Functional Aliases field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Location field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| List of Locations of granted floor participants field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor control server for on-network and floor arbitrator for off-network.

The content of the SSRC field is coded as specified in IETF RFC 3550 [3].

**Granted Party's Identity:**

The Granted Party's Identity field is coded as specified in clause 8.2.3.6.

**Permission to request the floor:**

The Permission to Request the Floor field is coded as specified in clause 8.2.3.7.

**User ID:**

The User ID field is used in off-network only. The User ID field carries the MCPTT user ID of the floor participant sending the Floor Taken message.

The User ID field is coded as specified in clause 8.2.3.8.

**Message Sequence Number:**

The Message Sequence Number field is coded as specified in to clause 8.2.3.10.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**SSRC of granted floor participant:**

The SSRC of granted floor participant is coded as specified in clause 8.2.3.16. The field is not used in multi-talker control scenario.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

**List of Granted Users:**

The List of Granted Users field is used in a multi-talker scenario. The List of Granted Users field is coded as specified in clause 8.2.3.17 and indicates the list of users that have permission to send media.

**List of SSRCs of granted floor participants:**

The List of SSRCs field is used in a multi-talker scenario. The List of SSRCs of granted floor participants is coded as specified in clause 8.2.3.18. The list contains the SSRCs in the same order as the corresponding user IDs in the List of Granted Users field.

**List of Functional Aliases:**

The List of Functional Aliases field is used in multi-talker scenario. The List of Functional Aliases field is coded as specified in clause 8.2.3.20 and indicates the list of Functional Aliases that have permission to send media. The list contains the Functional Aliases in the same order as the corresponding user IDs in the List of Granted Users field.

**Location:**

The Location field is coded as specified in clause 8.2.3.21 and contains the location of the granted party.

**List of Locations of granted floor participants:**

The List of Locations field is used in a multi-talker scenario. The List of Locations of granted floor participants is coded as specified in clause 8.2.3.22. The list contains the Locations of granted floor participants in the same order as the corresponding user IDs in the List of Granted Users field.

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

#### 8.2.10.1 General

The Floor Revoke message is sent from the floor control server to the floor participant with the permission to send media to inform that the permission to send media is revoked.

The Floor Revoke message is used in the on-network mode. The Floor Revoke message is only used over the unicast bearer.

Table 8.2.10.1-1 shows the content of the Floor Revoke message.

Table 8.2.10.1-1: Floor Revoke message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor control server |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Reject Cause value |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor control server.

The content of the SSRC field is coded as specified in IETF RFC 3550 [3].

**Reject Cause:**

The Reject Cause field for the Floor Revoke message includes <Reject Cause> cause value in the Reject Cause field explaining why the floor control server wants the floor participant to stop sending media and can be followed by additional information. Therefore the length of the packet can vary depending on the value of the rejection cause.

The coding of the <Reject Cause> value is specified in clause 8.2.3.4.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**User ID:**

The revoked user's MCPTT ID is included in the User ID field, coded as specified in clause 8.2.3.8.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

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

### 8.2.11 Floor Queue Position Request message

The Floor Queue Position Request message is a request from a floor participant to get information about the floor participant's position in the floor request queue.

The Floor Queue Position Request message is used in the off-network mode and in the on-network mode. In the on-network mode the Floor Queue Position Request message is only used over the unicast bearer.

Table 8.2.11-1 shows the content of the Floor Queue Position Request message.

Table 8.2.11-1: Floor Queue Position Request message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor participant requesting floor queue status info |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor participant that is requesting information about its position in the floor request queue.

The SSRC field is coded as specified in IETF RFC 3550 [3].

**User ID:**

The User ID field carries the MCPTT user ID of the floor participant sending the Floor Queue Position Request message.

The User ID field is coded as specified in clause 8.2.3.8.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

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

### 8.2.12 Floor Queue Position Info message

The Floor Queue Position Info message is sent by the floor control server to notify the floor participant of its position in the floor request queue.

The Floor Queue Position Info message is used in off-network and in on-network mode. In the on-network mode the Floor Queue Position Info message is only used over the unicast bearer.

Table 8.2.12-1 shows the content of the Floor Queue Position Info message.

Table 8.2.12-1: Floor Queue Position Info message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor control server/floor arbitrator |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of queued floor participant field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queued User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queue Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Floor Indicator field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields are irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor control server for on-network and floor arbitrator for off-network.

The SSRC field is coded as specified in IETF RFC 3550 [3].

**User ID:**

The User ID field is used in off-network only. The User ID field carries the MCPTT ID of the floor participant sending the Floor Queue Position Info message.

The User ID value is coded as specified in clause 8.2.3.8.

**SSRC of queued floor participant:**

The SSRC of queued floor participant is only applicable in off-network and shall carry the SSRC of the queued floor participant.

The SSRC field shall be coded as specified in clause 8.2.3.16.

**Queued User ID:**

The Queued User ID field carries the MCPTT ID of the queued floor participant.

The Queued User ID value is coded as specified in clause 8.2.3.8.

**Queue Info:**

The Queue Info field defines the queue position and granted floor priority in the queue.

The Queue Info field is coded as specified in clause 8.2.3.5.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Floor Indicator:**

The Floor Indicator field is coded as described in clause 8.2.3.15.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

### 8.2.13 Floor Ack message

The Floor Ack message is used to acknowledge any floor control message that included the first bit (marked as x in the subtype) set to 1 (see clause 8.2.2).

The Floor Ack message is only used in the on-network mode. The Floor Ack message is only used over the unicast bearer.

Table 8.2.13-1 shows the content of the Floor Ack message.

Table 8.2.13-1: Floor Ack message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of the sender |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Source field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Message Type field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Location field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the source identified by the Source field.

The SSRC field is coded as specified in IETF RFC 3550 [3].

**Source:**

The Source field is coded as specified in clause 8.2.3.12.

**Message Type:**

The Message Type field contains the floor control message that is acknowledged by the Floor Ack message. The Message Type field is coded as specified in clause 8.2.3.14.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**Location:**

The Location field is coded as described in clause 8.2.3.21 and contains the location information of the granted floor user. This field shall be omitted when location information of the granted floor user is not allowed by the granted floor user's MCPTT profile, or alternatively may be included with the location type field set to '0' (Not provided).

**User ID:**

In the direction from client to server the User ID field contains the MCPTT ID of the user sending the Floor Ack.

In the direction from server to client, the User ID field contains the MCPTT ID of the targeted user.

The User ID field is coded as specified in clause 8.2.3.6.

**Functional Alias:**

The Functional Alias field contains the functional alias of the granted party and is coded as specified in clause 8.2.3.19.

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

### 8.2.15 Queued Floor Requests message

The Queued Floor Requests message represents a set of purposes (e.g. Cancel request, Cancel result, Cancel notification) that supports an authorized user (e.g dispatcher) to cancel the queued floor request of other MCPTT users; to notify other MCPTT users of their queued requests is being cancelled and to the originator of the request to indicate the status of cancellation of queued floor request.

The Queued Floor Requests message is used in the on-network mode. In the on-network mode the Queued Floor Requests message is only used over the unicast bearer.

Table 8.2.15-1 shows the content of the Queued Floor Requests message.

Table 8.2.15-1: Queued Floor Requests message

0 1 2 3

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

|V=2|P| Subtype | PT=APP=204 | length |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| SSRC of floor participant/floor control server/arbitrator |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| name=MCPT |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Functional Alias field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Track Info field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| List of Queued Users field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Requested Party's Identity field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queued Floor Requests Purpose field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| Queue Floor Rquests Result field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

| User ID field |

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

With the exception of the three first 32-bit words the order of the fields is irrelevant.

**Subtype:**

The subtype is coded according to table 8.2.2-1.

**Length:**

The length is coded as specified in clause 8.1.2.

**SSRC:**

The SSRC field carries the SSRC of the floor participant / floor control server / floor arbitrator.

If the message is for cancellation of a queued floor request, then the SSRC shall be that of the floor participant who is requesting cancellation.

If the message is for notifying the cancellation of a queued floor request to the other floor participants or is a response to a message for cancellation of a queued floor request originated by a floor participant, then the SSRC shall be that of the floor control server / floor arbitrator.

The SSRC field is coded as specified in IETF RFC 3550 [3].

**Functional Alias:**

This field shall be included if the message is for a cancellation of a queued floor request from a floor participant or is a response to a message for cancellation of a queued floor request originated by a floor participant. The Functional Alias field is coded as described in clause 8.2.3.19.

**Track Info:**

The Track Info field is included when an MCPTT call involves a non-controlling MCPTT function. The coding of the Track Info field is described in clause 8.2.3.13.

**List of** Queued **Users:**

The List of Queued Users field is used only in sending a message for cancellation of a queued floor request of other MCPTT users and for sending a response message to the cancellation of a queued floor request. The List of Queued Users field is coded as specified in clause 8.2.3.24 and indicates the list of users whose request for permission to send media is queued.

In the case of sending a Queued Floor Requests message with a Cancel Result, the List of Queued Users field indicates the list of users whose queued floor requests were not possible to remove and their queued requests still exist in the active floor request queue.

If the request is for clearing all the users queued floor requests, this field is neither included in the request nor the response.

**Requested Party's Identity field:**

The Requested Party's Identity field shall be added only when the Floor Queue Cancel message is originated by a floor participant user. This field shall not be added if the Floor Queue Cancel message is originated by the floor control server (due to local policies). This field is also included when the Queued Floor Requests message is a response to the cancellation of a queued floor request originated by a floor participant. The Requested Party's Identity field is coded as specified in clause 8.2.3.8.

**Queued Floor Requests Purpose field:**

The Queued Floor Requests Purpose field is coded as specified in clause 8.2.3.23.

**Queued Floor Request Result field:**

The Queued Floor Request Result field is included only when sending a response message to the cancellation of a queued floor request originated by a floor participant. The Queued Floor Request Result field is coded as specified in clause 8.2.3.25.

**User ID:**

If the User ID field contains the Queued Floor <Queued Floor RequestsPurpose> value set to '0', the User ID is set to the MCPTT ID of the requesting user.

If the User ID field contains the Queued Floor <Queued Floor RequestsPurpose> value set to '1', the User ID is set to the MCPTT ID of the requesting user.

If the User ID field contains the Queued Floor <Queued Floor RequestsPurpose> value set to '2', the User ID is set to the MCPTT ID of the queued user.

The User ID field is coded as specified in clause 8.2.3.6.

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