**3GPP TSG-SA WG6 Meeting #62 S6-243387**

**Maastricht, Netherlands, 19th – 23rd August 2024 (revision of S6-243310)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0580** | **rev** | **1** | **Current version:** |  |  |
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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:*** | Migration during Ad hoc group call procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FRMCS\_Ph5 | | | | |  | ***Date:*** | | | 2024-08-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | |  |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | While ad hoc group call is ongoing, any of the participating MC service user can migrate to the partner MC system (migrated MC system) and assigned with the new MC service ID from the partner MC system. Such MC service user’s participation in the ad hoc group call is required even after the migration and the call should be delivered to the migrated MC system. The existing specification do not have way for establishing ad hoc group call with migrated MC service user initiated using MC service ID assigned by primary MC system of the migrated MC service user and route accordingly to migrated MC system using new MC service ID assigned by the migrated MC system. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 10.16.7.1: Provides the general discription of the procedure.  10.16.7.2: An Ad hoc group call redirection notify information flow is defined to indicate the call re-direction to MC service server from another MC server and MC service server to call originating MC service user.  10.16.7.3 and 10.16.7.4: A detailed procedure considering interconnected MC system is specified. The procedures are specified tor the two cases, one for the participants list provided by the Initiator and criteria provided by the Initiator. The primary MC system’s MC service is the focus server and manages to invite all the MC service users to call. The partner MC system uses the Ad hoc group call redirection notify information flow to indicate the call to be delivered to another partner MC system to which mc service user is migrated | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The migration of participating MC service user while in an ongoing ad hoc group call cannot be handled and re-establishing of an ad hoc group call with the migrated MC service user in the partner MC system (migrated MC system) is not possible. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.16.(7 new), 10.16.7.1 (new), 10.16.7.2 (new), 10.16.7.3 (new), 10.16.7.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **Y** |  | Other core specifications | | | | TS 23.379 CR0436, TS 23.281 CR0228, TS 23.282 CR0366 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

### 10.16.7 Migration during Ad hoc group call procedure

#### 10.16.7.1 General

The following clauses specify the generic procedure for MC service user to continue to participate in ad hoc group call when migrated to partner system that is utilised by all the MC services (i.e. MCPTT, MCVideo and MCData) in conjunction with the procedures as specified in the respective MC services in 3GPP TS 23.379 [16], 3GPP TS 23.281 [12], and 3GPP TS 23.282 [13].

The ad hoc group call can be initiated by using the participant list or criteria (along with criteria or local policies at MC service server) provided by an initiator of the call and the ad hoc group call will be hosted in the primary MC system of the initiator of the ad hoc group call. During ongoing call, the participating MC service user can migrate to partner MC system. While migrating to partner MC system, the MC service user will leave the ongoing ad hoc group call by providing the reason for leaving the ad hoc group call is due to migration. After succesful migration, the MC service user will be invited again to continue the participation in an ongoing ad hoc group call. If the ad hoc group call is established using the participant list provided by the initiator of the call, then the MC service server where the ad hoc group call is hosted will invite the migrated MC service user using partner MC system assigned MC service ID. If the ad hoc group call is established using the criteria provided by the initiator of the call, then the MC service server where the ad hoc group call is hosted will invite the migrated MC service user using partner MC system assigned MC service ID only when it is informed about the migrated MC service user meeting the criteria and to be invited for ongoing ad hoc group call by partner MC system (migrated MC system).

#### 10.16.7.2 Information flows

##### 10.16.7.2.1 Ad hoc group call redirection notify

Table 10.16.7.2.1-1 describes the information flow of an ad hoc group call redirection notify, which is sent from the MC service server to MC service server and MC service server to an MC service client initiating an ad hoc group call towards a migrated MC service user.

Table 10.16.7.2.1-1: Ad hoc group call redirection notify

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M | The MC service ID of the MC service user initiating an ad hoc group call, i.e., calling party. The MC service ID can either be MCPTT ID, MCVideo ID, or MCData ID. |
| MC service ID | M | The MC service ID of the target MC service user (i.e., called party), which the MC service user has obtained from its primary MC system before migration. The MC service ID can either be MCPTT ID, MCVideo ID, or MCData ID. |
| MC service ID | M | The MC service ID of the target MC service user, which the MC service user has obtained from its migrated MC system after Migration. The MC service ID can either be MCPTT ID, MCVideo ID, or MCData ID. |
| Redirection reason | O | The called MC service user has migrated. |

#### 10.16.7.3 Procedure for participants list provided by the Initiator

Figure 10.16.7.3-1 presents a generic ad hoc group call procedure in which MC service user 3 using MC service client 3 and MC service user 4 using MC service client 4 migrates during the call, where the MC system A is the primary MC system of MC service user 3 before migration, MC system B is the primary MC system of MC service user 4 before migration, the MC system B is the MC system that the MC service user 3 has migrated and the MC system C is the MC system that the MC service user 4 has migrated. After the migration, the migrated MC service user 3 and MC service user 4 are re-invited to ongoing ad hoc group call and successfully added to the call.

The procedure is based on the following existing procedures:

- The ad hoc group call setup procedures as described in clause 10.19.3.2.1 of 3GPP TS 23.379 [16], in clause 7.19.3.2.4 of 3GPP TS 23.281 [12], or in clause 7.17.3.2.1 of 3GPP TS 23.282 [13].

- The migration of the MC service user to the partner MC system procedures as described in clause 10.6.3.

- The inviting a MC service user and adding to the ongoing ad hoc group call procedures steps (see steps 6 and 7) are as described in clause 10.19.3.2.1 of 3GPP TS 23.379 [16], in clause 7.19.3.2.4 of 3GPP TS 23.281 [12], or in clause 7.17.3.2.1 of 3GPP TS 23.282 [13].

Pre-conditions:

- The MC system A, MC system B and MC system C are interconnected MC systems.

- The MC system A is the primary MC system of MC service user 1, MC service user 2 and the MC service user 3. The MC system B is the MC system that MC service user 3 has migrated.

- The MC system B is the primary MC system of MC service user 4. The MC system C is the MC system that MC service user 4 has migrated.

- An ad hoc group call is ongoing among the MC service users at MC service client 1 (initiator), MC service client 2, MC service client 3 and MC service client 4 using the MC service ID which are obtained from their primary MC system, and the participants list provided by the originating MC service user while initiating the ad hoc group call.

- The ad hoc group call is hosted in the MC service server A of the MC system A.



Figure 10.16.7.3-1: Migration during ongoing ad hoc group call based on participants list.

1. The MC service client 3 determines the need to migrate to the MC system B and MC service user 3 is notified to be prepared for possible service interruption.

2a-2b. The MC service client 3 leaves the ad hoc group call by sending ad hoc group call leave request towards the MC service server A containing the ad hoc group ID and reason for the leaving the call as user migration.

3. The ongoing ad hoc group call is updated by removing MC service client 3 and call continues with remaining MC service clients.

4. The MC service client 3 migrates to the MC system B as described in the clause 10.6.3 and new MC service ID is assigned by the MC system B. The MC service server A of the MC system A, which is the primary MC system of the migrated MC service user 3, is informed about migrated MC service user’s MC service ID obtained from the MC system B (i.e. a migrated MC system) along with successful MC service authorization at the MC system B.

4a. The MC service server A may informs the MC service client 1 that ad hoc group call request towards MC service user 3 is redirected to MC system B (migrated MC system) by sending ad hoc group call redirection notify. The ad hoc group call redirection notify contains the information about MC service ID of the target MC service user 3 assigned by both MC system A and MC system B, and reason for the call redirection as user migration.

5. The MC service server A of the MC system A determines that MC service user 3 has to be re-invited for ongoing ad hoc group call. The MC service server A of the MC system A invites the MC service client 3 to ad hoc group call using MC service ID assigned by the MC system B and successfully establishes the ad hoc group call with the MC service client 3.

NOTE 1: How the MC service server determining to re-invite the migrated MC service user is left to the implementation (e.g. timer, policy, on migration completion with periodically querying for the migration status information etc.).

6. The MC service client 4 determines the need to migrate to the MC system C and MC service user 4 is notified to be prepared for possible service interruption.

7a-7b. The MC service client 4 leaves the ad hoc group call by sending ad hoc group call leave request towards the MC service server A containing the ad hoc group ID and reason for the leaving the call as user migration.

8. The ongoing ad hoc group call is updated by removing MC service client 4 and call continues with remaining MC service clients.

9. The MC service client 4 migrates to the MC system C as described in the clause 10.6.3 and new MC service ID is assigned by the MC system C. The MC service server B of the MC system B, which is the primary MC system of the migrated MC service user 4, is informed about migrated MC service user’s MC service ID obtained from the MC system C (i.e. a migrated MC system) along with successful MC service authorization at the MC system C.

10. The MC service server A of the MC system A determines that MC service user 4 has to be re-invited for ongoing ad hoc group call. The MC service server A of the MC system A initiates an ad hoc group call request towards the MC service client 4 of the MC system B (i.e. interconnected MC system) using MC service ID assigned by the MC system B (i.e. primary MC system). The ad hoc group call request is routed to the MC service client 4 via the MC service server B of the MC system B.

NOTE 2: How the MC service server determining to re-invite the migrated MC service user is left to the implementation (e.g. timer, policy etc).

11. The MC service server B of the MC system B determines that MC service user 4 has to be invited for ad hoc group call is migrated to MC system C with a new MC service ID assigned by MC system C.

12. The MC service server B informs the MC service server A that initiation of ad hoc group call towards the MC service user 4 has migrated and assigned with a new MC service ID by MC system C (migrated MC system) by sending ad hoc group call redirection notify. The ad hoc group call redirection notify contains the information about MC service ID of the target MC service user 4 assigned by both MC system B and MC system C, and reason for the call redirection notify as user migration.

13. The MC service server A may informs the MC service client 1 that ad hoc group call request towards MC service user 4 is redirected to MC system C (migrated MC system) by sending ad hoc group call redirection notify. The ad hoc group call redirection notify contains the information about MC service ID of the target MC service user 4 assigned by both MC system B and MC system C, and reason for the call redirection as user migration.

14. The MC service server A of the MC system A invites the MC service client 4 to ad hoc group call using MC service ID assigned by the MC system C and successfully establishes the ad hoc group call with the MC service client 4.

NOTE 3: The migrated MC system can choose to reject the ad hoc group call request originated towards the migrated MC service user based on the local policy.

NOTE 4: When user added to the ad hoc group call, the authorized users (not shown in figure), who are configured to receive the participants information of ad hoc group call, are notified that the MCPTT user joined the MCPTT ad hoc group call.

#### 10.16.7.4 Procedure for criteria provided by the Initiator

Figure 10.16.7.4-1 presents a generic ad hoc group call procedure in which MC service user 3 using MC service client 3 and MC service user 4 using MC service client 4 migrates during the call, where the MC system A is the primary MC system of MC service user 3 before migration, MC system B is the primary MC system of MC service user 4 before migration, the MC system B is the MC system that the MC service user 3 has migrated and the MC system C is the MC system that the MC service user 4 has migrated. After the migration, the migrated MC service user 3 and MC service user 4 are re-invited to ongoing ad hoc group call based on the criteria in the migrated MC system and successfully added to the call.

The procedure is based on the following existing procedures:

- The ad hoc group call setup procedures as described in clause 10.19.3.2.3 of 3GPP TS 23.379 [16], in clause 7.19.3.2.1 of 3GPP TS 23.281 [12], or in clause 7.17.3.2.3 of 3GPP TS 23.282 [13].

- The migration of the MC service user to the partner MC system procedures as described in clause 10.6.3.

- Inviting a MC service user meeting the criteria to the ongoing ad hoc group call procedure steps are as described in clause 10.19.3.2.4 of 3GPP TS 23.379 [16], in clause 7.19.3.2.2 of 3GPP TS 23.281 [12], or in clause 7.17.3.2.4 of 3GPP TS 23.282 [13].

Pre-conditions:

- The MC system A, MC system B and MC system C are interconnected MC systems.

- The criteria for the ad hoc group call have been shared to all interconnected MC systems, based on the local policy

- The MC system A is the primary MC system of MC service user 1, MC service user 2 and the MC service user 3. The MC system B is the MC system that MC service user 3 has migrated.

- The MC system B is the primary MC system of MC service user 4. The MC system C is the MC system that MC service user 4 has migrated.

- An ad hoc group call is ongoing among the MC service users at MC service client 1 (initiator), MC service client 2, MC service client 3 and MC service client 4 using the MC service ID which are obtained from their primary MC system, and the participants list determined using criteria provided by the originating MC service user while initiating the ad hoc group call.

- The ad hoc group call is hosted in the MC service server A of the MC system A.



Figure 10.16.7.4-1: Migration during ongoing ad hoc group call based on criteria.

1. The MC service client 3 determines the need to migrate to the MC system B and MC service user 3 is notified to be prepared for possible service interruption.

2a-2b. The MC service client 3 leaves the ad hoc group call by sending ad hoc group call leave request towards the MC service server A containing the ad hoc group ID and reason for the leaving the call as user migration.

3. The ongoing ad hoc group call is updated by removing MC service client 3 and call continues with remaining MC service clients.

4. The MC service client 3 migrates to the MC system B as described in the clause 10.6.3 and new MC service ID is assigned by the MC system B. The MC service server A of the MC system A, which is the primary MC system of the migrated MC service user 3, is informed about migrated MC service user’s MC service ID obtained from the MC system B (i.e. a migrated MC system) along with successful MC service authorization at the MC system B.

5. The MC service server B of the MC system B determines that newly migrated MC service user 3 meets the criteria and notify the MC service server A of the MC system A to add the MC service user 3 to an on-going ad hoc group call. The MC service server A of the MC system A invites the MC service client 3 to ad hoc group call using MC service ID assigned by the MC system B and successfully establishes the ad hoc group call with the MC service client 3.

6. The MC service client 4 determines the need to migrate to the MC system C and MC service user 4 is notified to be prepared for possible service interruption.

7a-7b. The MC service client 4 leaves the ad hoc group call by sending ad hoc group call leave request towards the MC service server A containing the ad hoc group ID and reason for the leaving the call as user migration.

8. The ongoing ad hoc group call is updated by removing MC service client 4 and call continues with remaining MC service clients.

9. The MC service client 4 migrates to the MC system C as described in the clause 10.6.3 and new MC service ID is assigned by the MC system C. The MC service server B of the MC system B, which is the primary MC system of the migrated MC service user 4, is informed about migrated MC service user’s MC service ID obtained from the MC system C (i.e. a migrated MC system) along with successful MC service authorization at the MC system C.

10. The MC service server C of the MC system C determines that newly migrated MC service user 4 meets the criteria and notify the MC service server A of the MC system A to add the MC service user 4 to an on-going ad hoc group call. The MC service server A of the MC system A invites the MC service client 4 to ad hoc group call using MC service ID assigned by the MC system C and successfully establishes the ad hoc group call with the MC service client 4.

NOTE: When MC service user is added to the ad hoc group call, the authorized users (not shown in figure), who are configured to receive the participants information of ad hoc group call, are notified that the MCPTT user joined the MCPTT ad hoc group call.

\* \* \* \* End of changes \* \* \* \*