**3GPP TSG-CT WG1 Meeting #128-eC1-210686\_r1**

**Electronic meeting, 25 February – 5 March 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.282** | **CR** | **0206** | **rev** | **1** | **Current version:** | **17.1.0** |  |
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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:***  | Reference to clause 4.9 |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | MCProtoc17 |  | ***Date:*** | 2021-02-02 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Handling of a Warning header field is specified in clause 4.9 of this specification.However, clause 4.4 which describes MCData emergency alerts and clause 4.9.2 which describes warning text are referenced instead of clause 4.9 for the Warning header field. |
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| ***Summary of change:*** | For description of a Warning header field references to clause 4.4 and clause 4.9.2 are replaced with reference to clause 4.9. |
|  |  |
| ***Consequences if not approved:*** | Incorrect specification. |
|  |  |
| ***Clauses affected:*** | 6.3.3, 6.5.2.4.2, 6.5.3.4.2, 7.2.5, 9.2.3.3.4, 9.2.4.3.4, 10.2.5.3.4, 12.2.3, 19.3.2, 19.3.4, 20.3.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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

### 6.3.3 Retrieving a group document

This subclause describes how an MCData server accesses a group document from a group management server.

NOTE 1: The group document for a user or group regroup based on a preconfigured group is the group document for the preconfigured group restricted to the users or groups included in the regroup stored by the MCData server at the time of the regroup creation and does not include a <preconfigured-group-use-only> element.

Upon receipt of a SIP request:

1) if the MCData server is not yet subscribed to the group document for the group identity in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the SIP request, the MCData server shall subscribe to the "xcap-diff" event-package for the group document of this group identity as specified in 3GPP TS 24.481 [11];

NOTE 2: As a group document can potentially have a large content, the MCData server can subscribe to the group document indicating support of content-indirection as defined in IETF RFC 4483 [13], by following the procedures in 3GPP TS 24.481 [11].

2) upon receipt of a SIP 404 (Not Found) response as a result of attempting to subscribe to the "xcap-diff" event-package for the group document of the group identity in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the SIP request as specified in 3GPP TS 24.481 [11], the MCData server shall send the SIP 404 (Not Found) response with the warning text set to "113 group document does not exist" in a Warning header field as specified in subclause 4.9. Otherwise, continue with the rest of the steps; and

3) upon receipt of any other SIP 4xx, SIP 5xx or SIP 6xx response as a result of attempting to subscribe to the "xcap-diff" event-package for the group document of the group identity in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the SIP INVITE request as specified in 3GPP TS 24.481 [11], the MCData server shall send the SIP final response with the warning text set to "114 unable to retrieve group document" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps.

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

##### 6.5.2.4.2 Decrypting confidentiality protected content in XML elements

The following procedure shall be performed by an MCData client or an MCData server to decrypt an individual XML element that has a type of "encrypted" within an XML MIME body:

1) if the <EncryptedData> XML element or any of its sub-elements as described in 3GPP TS 33.180 [26] are not present in the MIME body then send a SIP 403 (Forbidden) response with the warning text set to "140 unable to decrypt XML content" in a Warning header field as specified in subclause 4.9, and exit this procedure. Otherwise continue with the rest of the steps;

2) perform decryption on the <EncryptedData> element as specified in W3C: "XML Encryption Syntax and Processing Version 1.1", https://www.w3.org/TR/xmlenc-core1/ [28] subclause 4.4 to decrypt the contents of the <CipherValue> element contained within the <CipherData> element;

3) if the decryption procedure fails, then send a SIP 403 (Forbidden) response with the warning text set to "140 unable to decrypt XML content" in a Warning header field as specified in subclause 4.9. Otherwise continue with the rest of the steps; and

4) return success of this procedure together with the decrypted XML element.

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

##### 6.5.3.4.2 Verification of integrity protected content

The following procedure is used by the MCData client or MCData server to verify the integrity of an XML MIME body:

1) if the required sub-elements of the <Signature> as described in 3GPP TS 33.180 [26] are not present in the MIME body and if not present, are not known to the sender and recipient by other means, then the integrity protection procedure fails and exit this procedure. Otherwise continue with the rest of the steps;

2) perform reference validation on the <Reference> element as specified in W3C: "XML Signature Syntax and Processing (Second Edition)", <http://www.w3.org/TR/xmldsig-core> [29] subclause 3.2.1;

3) if reference validation fails, then send a SIP 403 (Forbidden) response towards the functional entity with the warning text set to: "139 integrity protection check failed" in a Warning header field as specified in subclause 4.9, and do not continue with the rest of the steps in this subclause;

4) obtain the XPK using the XPK-ID in the received XML body and use it to perform signature validation of the value of the <SignatureValue> element as specified in W3C: "XML Signature Syntax and Processing (Second Edition)", <http://www.w3.org/TR/xmldsig-core> [29] subclause 3.2.2;

5) if signature validation fails, then send a SIP 403 (Forbidden) response towards the functional entity with the warning text set to: "139 integrity protection check failed" in a Warning header field as specified in subclause 4.9, and do not continue with the rest of the steps in this subclause; and

6) return success of the integrity protection of the XML document passes the integrity protection procedure.

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

### 7.2.5 Receiving a CSK key download message

When the MCData client receives a SIP MESSAGE request containing:

1) a P-Asserted-Service header field containing the "urn:urn-7:3gpp-service.ims.icsi.mcdata"; and

2) an application/mikey MIME body;

Then, if the key identifier within the CSB-ID of the MIKEY payload is a CSK-ID (4 most-significant bits have the value '2'), the MCData client:

1) shall follow the security procedures in subclause 9.2.1 of 3GPP TS 33.180 [26] to extract the CSK. The client:

a) if the initiator field (IDRi) has type 'URI' (identity hiding is not used), the client:

i) shall extract the initiator URI from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [26]. If the initiator URI deviates from the public service identity of the participating MCData function serving the MCData user, shall reject the SIP MESSAGE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and include warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps; and

ii) shall convert the initiator URI to a UID as described in 3GPP TS 33.180 [26];

b) if the initiator field (IDRi) has type 'UID' (identity hiding in use), the client:

i) shall convert the public service identity of participating MCData function serving the MCData user to a UID as described in 3GPP TS 33.180 [26]; and

ii) shall compare the generated UID with the UID in the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [26]. If the two initiator UIDs deviate from each other, shall reject the SIP MESSAGE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and include warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

c) shall use the UID to validate the signature of the I\_MESSAGE as described in 3GPP TS 33.180 [26];

d) if authentication verification of the I\_MESSAGE fails, shall reject the SIP MESSAGE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and include warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

e) shall extract and decrypt the encapsulated CSK using the participating MCData function's (KMS provisioned) UID key as described in 3GPP TS 33.180 [26];

f) shall extract and store the algorithm to be used to protect the MCData signalling fields; and

g) shall extract the CSK-ID, from the payload as specified in 3GPP TS 33.180 [26]; and

2) Upon successful extraction, the client shall replace the existing CSK and CSK-ID associated with the participating MCData function, with the extracted CSK and CSK-ID in the 'key download' message.

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

##### 9.2.3.3.4 Terminating participating MCData function procedures

Upon receipt of a "SIP INVITE request for standalone SDS over media plane for terminating participating MCData function", the participating MCData function:

1) if unable to process the request, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The participating MCData function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [4] and skip the rest of the steps;

2) shall check the presence of the isfocus media feature tag in the URI of the Contact header field and if it is not present then the participating MCData function shall reject the request with a SIP 403 (Forbidden) response with the warning text set to "104 isfocus not assigned" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

3) shall use the MCData ID present in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request to retrieve the binding between the MCData ID and public user identity of the terminating MCData user;

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

4A) if the <IncomingOne-to-OneCommunicationList> element exists in the MCData user profile document with one or more <One-to-One-CommunicationListEntry> elements (see the MCData user profile document in 3GPP TS 24.484 [12]) and:

i) if the <mcdata-calling-user-id> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request does not match with the <entry> element of any of the <One-to-One-CommunicationListEntry> elements in the <IncomingOne-to-OneCommunicationList> element of the MCData user profile document (see the MCData user profile document in 3GPP TS 24.484 [12]); and

ii) if configuration is not set in the MCData user profile document that allows the MCData user to receive one-to-one MCData communication from any user (see <allow-one-to-one-communication-from-any-user> element in MCData user profile document in 3GPP TS 24.484 [12]);

 then:

i) shall reject the SIP INVITE request with a SIP 403 (Forbidden) response including warning text set to "230 one-to-one MCData communication not authorised from this originating user" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

5) shall generate a SIP INVITE request accordance with 3GPP TS 24.229 [5];

6) should include the Session-Expires header field according to IETF RFC 4028 [38]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

7) shall include the option tag "timer" in the Supported header field;

8) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.sds media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of “urn:urn-7:3gpp-service.ims.icsi.mcdata.sds”;

c) the isfocus media feature tag;

d) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the incoming SIP INVITE request; and

e) any other uri-parameter provided in the Contact header field of the incoming SIP INVITE request;

9) shall include in the SIP INVITE request all Accept-Contact header fields and all Reject-Contact header fields, with their feature tags and their corresponding values along with parameters according to rules and procedures of IETF RFC 3841 [8] that were received (if any) in the incoming SIP INVITE request;

10) shall set the Request-URI of the outgoing SIP INVITE request to the public user identity associated to the MCData ID of the terminating MCData user;

11) shall populate the outgoing SIP INVITE request with the MIME bodies that were present in the incoming SIP INVITE request;

12) shall copy the contents of the P-Asserted-Identity header field of the incoming SIP INVITE request to the P-Asserted-Identity header field of the outgoing SIP INVITE request;

13) shall include in the SIP INVITE request an SDP offer based on the SDP offer in the received "SIP INVITE request for standalone SDS over media plane for terminating participating MCData function" as specified in subclause 9.2.3.3.1; and

14) shall send the SIP INVITE request as specified in 3GPP TS 24.229 [5].

Upon receipt of a SIP 200 (OK) response in response to the above SIP INVITE request, the participating MCData function:

1) shall generate a SIP 200 (OK) response as specified in 3GPP TS 24.229 [5];

2) shall include in the SIP 200 (OK) response an SDP answer based on the SDP answer in the received SIP 200 (OK) response as specified in subclause 9.2.3.3.2;

3) shall include the option tag "timer" in a Require header field;

4) shall include the Session-Expires header field according to rules and procedures of IETF RFC 4028 [38], "UAS Behavior". If no "refresher" parameter was included in the SIP INVITE request, the "refresher" parameter in the Session-Expires header field shall be set to "uas";

5) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.sds media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of “urn:urn-7:3gpp-service.ims.icsi.mcdata.sds”; and

c) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the received SIP INVITE request from the controlling MCData function;

6) if the incoming SIP response contained an application/vnd.3gpp.mcdata-info+xml MIME body, shall copy the application/vnd.3gpp.mcdata-info+xml MIME body to the outgoing SIP 200 (OK) response.

7) shall copy the P-Asserted-Identity header field from the incoming SIP 200 (OK) response to the outgoing SIP 200 (OK) response;

8) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [38];

9) shall interact with the media plane as specified in 3GPP TS 24.582 [15] subclause 6.2.1.5; and

10) shall send the SIP 200 (OK) response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

1) shall generate a SIP response according to 3GPP TS 24.229 [5];

2) shall include Warning header field(s) that were received in the incoming SIP response; and

3) shall forward the SIP response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

##### 9.2.4.3.4 Terminating participating MCData function procedures

Upon receipt of a "SIP INVITE request for SDS session for terminating participating MCData function", the participating MCData function:

1) if unable to process the request, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The participating MCData function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [4] and skip the rest of the steps;

2) shall check the presence of the isfocus media feature tag in the URI of the Contact header field and if it is not present then the participating MCData function shall reject the request with a SIP 403 (Forbidden) response with the warning text set to "104 isfocus not assigned" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

3) shall use the MCData ID present in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request to retrieve the binding between the MCData ID and public user identity of the terminating MCData user;

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

4A) if the <IncomingOne-to-OneCommunicationList> element exists in the MCData user profile document with one or more <One-to-One-CommunicationListEntry> elements (see the MCData user profile document in 3GPP TS 24.484 [12]) and:

i) if the <mcdata-calling-user-id> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request does not match with the <entry> element of any of the <One-to-One-CommunicationListEntry> elements in the <IncomingOne-to-OneCommunicationList> element of the MCData user profile document (see the MCData user profile document in 3GPP TS 24.484 [12]); and

ii) if configuration is not set in the MCData user profile document that allows the MCData user to receive one-to-one MCData communication from any user (see <allow-one-to-one-communication-from-any-user> element in MCData user profile document in 3GPP TS 24.484 [12]);

 then:

i) shall reject the SIP INVITE request with a SIP 403 (Forbidden) response including warning text set to "230 one-to-one MCData communication not authorised from this originating user" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

5) shall generate a SIP INVITE request accordance with 3GPP TS 24.229 [5];

6) should include the Session-Expires header field according to IETF RFC 4028 [38]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

7) shall include the option tag "timer" in the Supported header field;

8) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.sds media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of “urn:urn-7:3gpp-service.ims.icsi.mcdata.sds”;

c) the isfocus media feature tag;

d) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the incoming SIP INVITE request; and

e) any other uri-parameter provided in the Contact header field of the incoming SIP INVITE request;

9) shall include in the SIP INVITE request all Accept-Contact header fields and all Reject-Contact header fields, with their feature tags and their corresponding values along with parameters according to rules and procedures of IETF RFC 3841 [8] that were received (if any) in the incoming SIP INVITE request;

10) shall set the Request-URI of the outgoing SIP INVITE request to the public user identity associated to the MCData ID of the terminating MCData user;

11) shall populate the outgoing SIP INVITE request with the MIME bodies that were present in the incoming SIP INVITE request;

12) shall copy the contents of the P-Asserted-Identity header field of the incoming SIP INVITE request to the P-Asserted-Identity header field of the outgoing SIP INVITE request;

13) shall include in the SIP INVITE request an SDP offer based on the SDP offer in the received "SIP INVITE request for SDS session for terminating participating MCData function" as specified in subclause 9.2.4.3.1; and

14) shall send the SIP INVITE request as specified in 3GPP TS 24.229 [5].

Upon receipt of a SIP 200 (OK) response in response to the above SIP INVITE request, the participating MCData function:

1) shall generate a SIP 200 (OK) response as specified in 3GPP TS 24.229 [5];

2) shall include in the SIP 200 (OK) response an SDP answer based on the SDP answer in the received SIP 200 (OK) response as specified in subclause 9.2.4.3.2;

3) shall include the option tag "timer" in a Require header field;

4) shall include the Session-Expires header field according to rules and procedures of IETF RFC 4028 [38], "UAS Behavior". If no "refresher" parameter was included in the SIP INVITE request, the "refresher" parameter in the Session-Expires header field shall be set to "uas";

5) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.sds media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of “urn:urn-7:3gpp-service.ims.icsi.mcdata.sds”; and

c) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the received SIP INVITE request from the controlling MCData function;

6) if the incoming SIP response contained an application/vnd.3gpp.mcdata-info+xml MIME body, shall copy the application/vnd.3gpp.mcdata-info+xml MIME body to the outgoing SIP 200 (OK) response.

7) shall copy the P-Asserted-Identity header field from the incoming SIP 200 (OK) response to the outgoing SIP 200 (OK) response;

8) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [38].

9) shall interact with the media plane as specified in 3GPP TS 24.582 [15] subclause 6.2.2.5; and

10) shall send the SIP 200 (OK) response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

1) shall generate a SIP response according to 3GPP TS 24.229 [5];

2) shall include Warning header field(s) that were received in the incoming SIP response; and

3) shall forward the SIP response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

##### 10.2.5.3.4 Terminating participating MCData function procedures

Upon receipt of a "SIP INVITE request for file distribution for terminating participating MCData function", the participating MCData function:

1) if unable to process the request, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The participating MCData function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [4] and skip the rest of the steps;

2) shall check the presence of the isfocus media feature tag in the URI of the Contact header field and if it is not present then the participating MCData function shall reject the request with a SIP 403 (Forbidden) response with the warning text set to "104 isfocus not assigned" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

3) shall use the MCData ID present in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request to retrieve the binding between the MCData ID and public user identity of the terminating MCData user;

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

4A) if the <IncomingOne-to-OneCommunicationList> element exists in the MCData user profile document with one or more <One-to-One-CommunicationListEntry> elements (see the MCData user profile document in 3GPP TS 24.484 [12]) and:

i) if the <mcdata-calling-user-id> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request does not match with the <entry> element of any of the <One-to-One-CommunicationListEntry> elements in the <IncomingOne-to-OneCommunicationList> element of the MCData user profile document (see the MCData user profile document in 3GPP TS 24.484 [12]); and

ii) if configuration is not set in the MCData user profile document that allows the MCData user to receive one-to-one MCData communication from any user (see <allow-one-to-one-communication-from-any-user> element in MCData user profile document in 3GPP TS 24.484 [12]);

 then:

i) shall reject the SIP INVITE request with a SIP 403 (Forbidden) response including warning text set to "230 one-to-one MCData communication not authorised from this originating user" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

5) shall generate a SIP INVITE request accordance with 3GPP TS 24.229 [5];

6) should include the Session-Expires header field according to IETF RFC 4028 [38]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

7) shall include the option tag "timer" in the Supported header field;

8) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.fd media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd";

c) the isfocus media feature tag;

d) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the incoming SIP INVITE request; and

e) any other uri-parameter provided in the Contact header field of the incoming SIP INVITE request;

9) shall include in the SIP INVITE request all Accept-Contact header fields and all Reject-Contact header fields, with their feature tags and their corresponding values along with parameters according to rules and procedures of IETF RFC 3841 [8] that were received (if any) in the incoming SIP INVITE request;

10) shall set the Request-URI of the outgoing SIP INVITE request to the public user identity associated to the MCData ID of the terminating MCData user;

11) shall populate the outgoing SIP INVITE request with the MIME bodies that were present in the incoming SIP INVITE request;

12) shall copy the contents of the P-Asserted-Identity header field of the incoming SIP INVITE request to the P-Asserted-Identity header field of the outgoing SIP INVITE request;

13) shall include in the SIP INVITE request an SDP offer based on the SDP offer in the received "SIP INVITE request for file distribution for terminating participating MCData function" as specified in subclause 10.2.5.3.1; and

14) shall send the SIP INVITE request as specified in 3GPP TS 24.229 [5].

Upon receipt of a SIP 200 (OK) response in response to the above SIP INVITE request, the participating MCData function:

1) shall generate a SIP 200 (OK) response as specified in 3GPP TS 24.229 [5];

2) shall include in the SIP 200 (OK) response an SDP answer based on the SDP answer in the received SIP 200 (OK) response as specified in subclause 10.2.5.3.2;

3) shall include the option tag "timer" in a Require header field;

4) shall include the Session-Expires header field according to rules and procedures of IETF RFC 4028 [38], "UAS Behavior". If no "refresher" parameter was included in the SIP INVITE request, the "refresher" parameter in the Session-Expires header field shall be set to "uas";

5) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.fd media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"; and

c) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the received SIP INVITE request from the controlling MCData function;

6) if the incoming SIP response contained an application/vnd.3gpp.mcdata-info+xml MIME body, shall copy the application/vnd.3gpp.mcdata-info+xml MIME body to the outgoing SIP 200 (OK) response.

7) shall copy the P-Asserted-Identity header field from the incoming SIP 200 (OK) response to the outgoing SIP 200 (OK) response;

8) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [38];

9) shall interact with the media plane as specified in 3GPP TS 24.582 [15] subclause 7.2.2; and

10) shall send the SIP 200 (OK) response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

1) shall generate a SIP response according to 3GPP TS 24.229 [5];

2) shall include Warning header field(s) that were received in the incoming SIP response; and

3) shall forward the SIP response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

### 12.2.3 Controlling MCData function procedures

Upon receipt of a:

- "SIP MESSAGE request for SDS disposition notification for MCData server"; or

- "SIP MESSAGE request for FD disposition notification for MCData server";

the controlling MCData function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The controlling MCData function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [4]. Otherwise, continue with the rest of the steps;

2) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if an Accept-Contact header field does not include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" or "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd";

3) if the incoming SIP MESSAGE request does not contain an application/resource-lists MIME body or contains an application/resource-lists MIME body with more than one <entry> element, shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

4) shall attempt to correlate the disposition notification to the original SDS or FD request using the values contained in the Conversation ID and Message ID of the SDS NOTIFICATION message or FD NOTIFICATION message contained in the application/vnd.3gpp.mcdata-signalling MIME body of the SIP MESSAGE;

5) if unable to correlate the disposition notification as determined by step 4), shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "216 unable to correlate the disposition notification" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

6) if:

a) a "SIP MESSAGE request for FD disposition notification for MCData server" has been received;

b) the FD disposition notification type IE in the FD NOTIFICATION message is set to "FILE DOWNLOAD REQUEST REJECTED"; and

c) the SIP MESSAGE does not contain an application/vnd.3gpp.mcdata-info+xml MIME body with an <mcdata-calling-group-id> element, or the SIP MESSAGE contains an application/vnd.3gpp.mcdata-info+xml MIME body with an <mcdata-calling-group-id> element and all other FD disposition notifications have been received from the invited group members and were all set to "FILE DOWNLOAD REQUEST REJECTED";

then:

a) shall delete the file stored in the media storage function that is associated with the Conversation ID and Message ID that was included in the FD NOTIFICATION message if no other file availability timers are running for a file;and

b) shall stop the running timer TDC2 (file availability timer), which is associated to the Conversation ID, Message ID, Application ID (if associated), and Extended application ID (if associated) that is included in the FD NOTIFICATION message;

7) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [5] and IETF RFC 3428 [6];

8) if sending an SDS disposition notification:

a) shall include an Accept-Contact header field containing the g.3gpp.mcdata.sds media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [8] in the outgoing SIP MESSAGE request;

b) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" along with parameters "require" and "explicit" according to IETF RFC 3841 [8] ] in the outgoing SIP MESSAGE request;

9) if sending an FD disposition notification:

a) shall include an Accept-Contact header field containing the g.3gpp.mcdata.fd media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [8];

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

10) shall set the Request-URI to the public service identity of the terminating participating MCData function associated to the MCData user to be invited;

NOTE 1: How the controlling MCData function finds the address of the terminating MCData participating function is out of the scope of the current release.

11) if sending an SDS disposition notification, shall include a P-Asserted-Service header field with the value "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds";

12) if sending an FD disposition notification, shall include a P-Asserted-Service header field with the value "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd";

13) shall copy the public user identity of the calling MCData user from the P-Asserted-Identity header field of the incoming SIP MESSAGE request into the P-Asserted-Identity header field of the outgoing SIP MESSAGE request;

14) shall copy the MCData ID of the MCData user listed in the MIME resources body of the incoming SIP MESSAGE request, into the <mcdata-request-uri> element in the application/vnd.3gpp.mcdata-info+xml MIME body of the outgoing SIP MESSAGE request;

15) if the incoming SIP MESSAGE request contains an application/vnd.3gpp.mcdata-info+xml MIME body with an <mcdata-calling-group-id> element:

a) shall retrieve the group document for the MCData group id contained in the <mcdata-calling-group-id> element from the group management server, if not already cached, and identify the group members;

b) shall verify that the MCData ID contained in the <mcdata-calling-user-id> element matches to a group member. If there is no match, the controlling MCData function shall reject the SIP request with a SIP 403 (Forbidden) response including warning text set to "116 user is not part of the MCData group" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

c) if MCData disposition notifications need to be aggregated and an aggregated disposition notification has not yet been sent:

i) if timer TDC1 (disposition aggregation timer) is not running, shall start timer TDC1 (disposition aggregation timer) with the timer value as specified in subclause F.2.2;

ii) shall copy the application/vnd.3gpp.mcdata-signalling MIME body in the received SIP MESSAGE request to the outgoing SIP MESSAGE request;

NOTE 2: If the aggregated MCData disposition notifications do not fit into one SIP MESSAGE request, then the controlling MCData function needs to generate a new SIP MESSAGE request for the remaining disposition notifications.

iii) on expiry of timer TDC1 (disposition aggregation timer) shall continue with step 16; and

iv) if all MCData disposition notifications have been received from all group members shall continue with step 16; and

d) if MCData disposition notifications do not need to be aggregated, shall copy the application/vnd.3gpp.mcdata-signalling MIME body in the received SIP MESSAGE request to the outgoing SIP MESSAGE request and shall continue with step 16;

16) if the incoming SIP MESSAGE request contains an application/vnd.3gpp.mcdata-info+xml MIME body without an <mcdata-calling-group-id> element shall copy the application/vnd.3gpp.mcdata-signalling MIME body in the received SIP MESSAGE request to the outgoing SIP MESSAGE request;

17) shall send the SIP MESSAGE request according to according to rules and procedures of 3GPP TS 24.229 [5];

18) shall generate a SIP 202 (Accepted) response in response to the

- "SIP MESSAGE request for SDS disposition notification for MCData server"; or

- "SIP MESSAGE request for FD disposition notification for MCData server"; and

19) shall send the SIP 202 (Accepted) response towards the originating participating MCData function according to 3GPP TS 24.229 [5].

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

### 19.3.2 Receiving an MBMS bearer announcement

The MCData client associates each received application/sdp MIME body and each received security key with a general purpose MBMS subchannel announced in the same MBMS Bearer Announcement message. When receiving a Map Group To Bearer message, the MCData client interprets its content (e.g. the m= line number) in the context of the application/sdp MIME body associated with the general purpose MBMS subchannel on which the Map Group To Bearer message was received.

When the MCData client receives a SIP MESSAGE request containing:

1) a P-Asserted-Service header field containing the "urn:urn-7:3gpp-service.ims.icsi.mcdata"; and

2) an application/vnd.3gpp.mcdata-mbms-usage-info+xml MIME body containing one or more an <announcement> element(s);

then the MCData client for each <announcement> element in the application/vnd.3gpp.mcdata-mbms-usage-info+xml MIME body:

1) if the <mbms-service-areas> element is present:

a) if an <announcement> element with the same value of the <TMGI> element is already stored:

i) shall replace the old <announcement> element with the <announcement> element received in the application/vnd.3gpp.mcdata-mbms-usage-info+xml MIME body;

b) if there is no <announcement> element with the same value of the <TMGI> element stored:

i) shall store the received <announcement> element;

c) shall associate the received announcement with the received application/sdp MIME body;

d) shall associate the received announcement with the received <GPMS> element;

e) shall store the MBMS public service identity of the participating MCData function received in the P‑Asserted‑Identity header field and associate the MBMS public service identity with the new <announcement> element;

f) if a "a=key-mgmt" media-level attribute with the "mikey" key management and protocol identifier and a MIKEY-SAKKE I\_MESSAGE is included for the general purpose MBMS subchannel defined in the "m=application" media line in the application/sdp MIME body in the received SIP MESSAGE request,

i) shall extract the initiator URI from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [26]. If the initiator URI deviates from the public service identity of the participating MCData function serving the MCData user, shall reject the SIP MESSAGE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and include warning text set to "136 authentication of the MIKEY-SAKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

ii) shall convert the initiator URI to a UID as described in 3GPP TS 33.180 [26];

iii) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [26];

iv) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails, shall reject the SIP MESSAGE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and include warning text set to "136 authentication of the MIKEY-SAKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

v) shall extract and decrypt the encapsulated MSCCK using the participating MCData function's (KMS provisioned) UID key as described in 3GPP TS 33.180 [26]; and

vi) shall extract the MSCCK-ID, from the payload as specified in 3GPP TS 33.180 [26];

NOTE: With the MSCCK successfully shared between the participating MCData function and the served UEs, the participating MCData function is able to securely send MBMS subchannel control messages to the MCData clients.

g) shall listen to the general purpose MBMS subchannel defined in the "m=application" media line in the application/sdp MIME body in the received SIP MESSAGE request when entering an MBMS service area where the announced MBMS bearer is available; and

h) shall check the condition for sending a listening status report as specified in the subclause 19.3.3; and

2) if no <mbms-service-areas> element is present:

a) shall discard a previously stored <announcement> element identified by the value of the <TMGI>;

b) shall remove the association with the stored application/sdp MIME body and stop listening to the general purpose MBMS subchannel;

c) if no more <announcement> elements associated with the stored application/sdp MIME body are stored in the MCData client, shall remove the stored application/sdp MIME body; and

d) check the condition for sending a listening status report as specified in the subclause 19.3.3.

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

### 19.3.4 Receiving a MuSiK download message

When the MCData client receives a SIP MESSAGE request containing:

1) a P-Asserted-Service header field containing the "urn:urn-7:3gpp-service.ims.icsi.mcdata"; and

2) with one of the following:

a) an application/vnd.3gpp.mcdata-mbms-usage-info+xml MIME body containing an <mbms-explicitMuSiK-download> element with at least one <group> subelement; or

b) an application/vnd.3gpp.mcdata-mbms-usage-info+xml MIME body containing an <mbms-defaultMuSiK-download> element with zero or more <group> subelements;

the MCData client shall:

1) if the received message contains an <mbms-explicitMuSiK-download> element, set the impacted groups to be those groups identified by the <group> subelements;

2) if the received message contains an <mbms-defaultMuSiK-download> element without <group> subelements, set the impacted groups to be all groups not associated with currently valid explicit MuSiK downloads; and

3) if the received message contains an <mbms-defaultMuSiK-download> element with <group> subelements, first dissociate those groups identified by the <group> subelements from currently valid associations with explicit MuSiK downloads and then set the impacted groups to be all groups not associated with currently valid explicit MuSiK downloads.

If the key identifier within the CSB-ID of the MIKEY payload is a MuSiK-ID (4 most-significant bits have the value '6'), the MCData client:

1) shall process the MIKEY payload according to 3GPP TS 33.180 [26], as follows:

a) if the initiator field (IDRi) has type 'URI' (identity hiding is not used), the client:

i) shall extract the initiator URI from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [26]. If the initiator URI deviates from the public service identity of the participating MCData function serving the MCData client, shall reject the SIP MESSAGE request by sending a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and including warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps; and

ii) shall convert the initiator URI to a UID as described in 3GPP TS 33.180 [26];

b) otherwise, if the initiator field (IDRi) has type 'UID' (identity hiding in use), the client:

i) shall convert the public service identity of participating MCData function serving the MCData user to a UID as described in 3GPP TS 33.180 [26]; and

ii) shall compare the generated UID with the UID in the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [26]. If the two initiator UIDs deviate from each other, shall reject the SIP MESSAGE request by sending a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and including warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

c) otherwise, shall reject the SIP MESSAGE request by sending a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and including warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps;

d) shall use the UID to validate the signature of the I\_MESSAGE as described in 3GPP TS 33.180 [26];

e) if authentication verification of the I\_MESSAGE fails or the I\_MESSAGE does not contain a Status attribute, shall reject the SIP MESSAGE request by sending SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [45], and including warning text set to "136 authentication of the MIKEY-SAKKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.9 and shall not continue with the rest of the steps; and

f) shall examine the Status attribute and shall either mark the associated security functions as "not in use" or shall extract and store the encapsulated MuSiK and the corresponding MuSiK-ID from the payload as specified in 3GPP TS 33.180 [26]; and

2) for each of the impacted groups, shall either associate the status 'security not in use' or shall add/replace in the storage associated with the group the MuSiK‑ID and the MuSiK, for use (decrypted) as security key.

NOTE: It is expected that the MCData client is capable of storing a different MuSiK for each MCData group of interest.

The MCData client shall respond with SIP 200 OK only if it finds the message syntactically correct and recognizes it as a valid and error-free MuSiK download (default or explicit) message.

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

### 20.3.2 Terminating participating MCData function procedures

Upon receipt of a "SIP INVITE request for IP Connectivity session for terminating participating MCData function", the participating MCData function:

1) if unable to process the request, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The participating MCData function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [4] and skip the rest of the steps;

2) shall check the presence of the isfocus media feature tag in the URI of the Contact header field and if it is not present then the participating MCData function shall reject the request with a SIP 403 (Forbidden) response with the warning text set to "104 isfocus not assigned" in a Warning header field as specified in subclause 4.9, and shall not continue with the rest of the steps;

3) shall use the MCData ID present in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request to retrieve the binding between the MCData ID and public user identity of the terminating MCData user;

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

5) shall generate a SIP INVITE request accordance with 3GPP TS 24.229 [5];

6) should include the Session-Expires header field according to IETF RFC 4028 [38]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

7) shall include the option tag "timer" in the Supported header field;

8) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.ipconn media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of “urn:urn-7:3gpp-service.ims.icsi.mcdata.ipconn”;

c) the isfocus media feature tag;

d) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the incoming SIP INVITE request; and

e) any other uri-parameter provided in the Contact header field of the incoming SIP INVITE request;

9) shall include in the SIP INVITE request all Accept-Contact header fields and all Reject-Contact header fields, with their feature tags and their corresponding values along with parameters according to rules and procedures of IETF RFC 3841 [8] that were received (if any) in the incoming SIP INVITE request;

10) shall set the Request-URI of the outgoing SIP INVITE request to the public user identity associated to the MCData ID of the terminating MCData user;

11) shall populate the outgoing SIP INVITE request with the MIME bodies that were present in the incoming SIP INVITE request;

12) shall copy the contents of the P-Asserted-Identity header field of the incoming SIP INVITE request to the P-Asserted-Identity header field of the outgoing SIP INVITE request;

13) shall include in the SIP INVITE request an SDP offer according to 3GPP TS 24.229 [5] with the clarifications given in subclause 20.1.2; and

14) shall send the SIP INVITE request as specified in 3GPP TS 24.229 [5].

Upon receipt of a SIP 200 (OK) response in response to the above SIP INVITE request, the participating MCData function:

1) shall generate a SIP 200 (OK) response as specified in 3GPP TS 24.229 [5];

2) shall include the option tag "timer" in a Require header field;

3) shall include the Session-Expires header field according to rules and procedures of IETF RFC 4028 [38], "UAS Behavior". If no "refresher" parameter was included in the SIP INVITE request, the "refresher" parameter in the Session-Expires header field shall be set to "uas";

4) shall include the following in the Contact header field:

a) the g.3gpp.mcdata.ipconn media feature tag;

b) the g.3gpp.icsi-ref media feature tag containing the value of “urn:urn-7:3gpp-service.ims.icsi.mcdata.ipconn”; and

c) an MCData session identity mapped to the MCData session identity provided in the Contact header field of the received SIP INVITE request from the controlling MCData function;

5) if the incoming SIP response contained an application/vnd.3gpp.mcdata-info+xml MIME body, shall copy the application/vnd.3gpp.mcdata-info+xml MIME body to the outgoing SIP 200 (OK) response.

6) shall copy the P-Asserted-Identity header field from the incoming SIP 200 (OK) response to the outgoing SIP 200 (OK) response;

7) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [38];

8) shall interact with the media plane as specified in 3GPP TS 24.582 [15]; and

9) shall send the SIP 200 (OK) response to the controlling MCData function according to 3GPP TS 24.229 [5].

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

1) shall generate a SIP response according to 3GPP TS 24.229 [5];

2) shall include Warning header field(s) that were received in the incoming SIP response; and

3) shall forward the SIP response to the controlling MCData function according to 3GPP TS 24.229 [5].

\*\*\* End of Changes \*\*\*