**3GPP TSG-CT WG1 Meeting #137-eC1-224584**

**E-Meeting, , 18th – 26th August 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.282** | **CR** | **0328** | **rev** | **-** | **Current version:** | **17.7.0** |  |
|  |
| *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:***  | Adding support for using a functional alias as target of an IP connectivity communication |
|  |  |
| ***Source to WG:*** | , Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | eMONASTERY2 |  | ***Date:*** | 2022-08-03 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***Release:*** | 7 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | In Rel-17, the support of calling a FA has been implemented for most call types and services. However, MCData IP connectivity still does not support using a functional alias to address the target MC service user. This CR adds the necessary changes to support using a functional alias to address the target MC service user. The proposed changes are the necessary alignment of IP connectivity with other services. |
|  |  |
| ***Summary of change:*** | - Add to the client origination procedure 20.2.1 the option to initiate a communication using a functional alias as destination address, and adding the handling of an incoming SIP 300 (Multiple Choices) response that triggers the creation and sending of a SIP invite message with the MCData ID received in the SIP 300 (Multiple Choices) response.- Some corrections in the client termination procedure 20.2.2.- Add functional alias resolution to the controlling terminating procedure 20.4.2. Consists of determining the MCData ID that has the functional alias activated, and sending the MCData ID in a SIP 300 (Multiple Choices) response. |
| ***To***  |  |
| ***Consequences if not approved:*** | No support for using a functional alias as target of an IP connectivity communication. |
|  |  |
| ***Clauses affected:*** | 20.2.1, 20.2.2, 20.4.2, D.1.2 D.1.3 |
|  |  |
|  | **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 \* \* \* \*

### 20.2.1 MCData client originating procedures

When a MCData client receives the request by a user or user application to establish a IP Connectivity session with another MCData client the MCData client shall generate a SIP INVITE request in accordance with 3GPP TS 24.229 [5] with the clarifications given below. The MCData ID or the functional alias of the target MCData client may be explicitly included in the request from the user or user application. If the target MCData ID or functional alias is not included in the request, the MCData client may implicitly determine the target MCData ID by using the target IP Information included in the request to find a match in the One-to-One communication list of the MCData user profile document as specified in 3GPP TS 24.484 [12]. If the MCData ID of the target MCData client is determined implicitly by the target IP Information included in the request, the client searches in leaves below /<x>/<x>/Common/OnetoOne/UserList/<x>/Entry/IPInformation/<x>/Entry/ for a match in the IP Information. The MCData ID is given by matching the user entry.

The MCData client:

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

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

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

4) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcdata.ipconn" (coded as specified in 3GPP TS 24.229 [5]), in a P-Preferred-Service header field according to IETF RFC 6050 [7] in the SIP INVITE request;

5) should include the "timer" option tag in the Supported header field;

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 insert in the SIP INVITE request a MIME resource-lists body with the MCData ID of the invited MCData user or the functional alias, according to rules and procedures of IETF RFC 5366 [18];

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

a) the <request-type> element set to a value of "one-to-one-ipconn";

b) with the <call-to-functional-alias-ind> set to "true" if the functional alias is used as a target of the communication request; and

c) if the MCData client is aware of active functional aliases and if an active functional alias is to be included in the SIP INVITE request, the <functional-alias-URI> element set to the URI of the used functional alias;

9) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCData function serving the MCData user;

NOTE 2: The MCData client is configured with public service identity identifying the participating MCData function serving the MCData user.

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

11) shall include an SDP offer according to 3GPP TS 24.229 [5] with the clarifications given in clause 20.2.0a; and

12) shall send the SIP INVITE request towards the MCData server according to 3GPP TS 24.229 [5].

On receipt of a SIP 2xx response to the SIP INVITE request, the MCData client:

1) shall send a SIP ACK request as specified in 3GPP TS 24.229 [5];

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

3) shall interact with the media plane as specified in 3GPP TS 24.582 [15] clause 13.1.2.

Upon receiving a SIP 300 (Multiple Choices) response to the SIP INVITE request the MCData client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [5], with the clarifications given in this clause and with the following additional clarifications:

1) shall insert in the SIP INVITE request a MIME resource-lists body populated with the MCData ID in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info MIME body in the received SIP 300 (Multiple Choices) response;

2) shall not include a <call-to-functional-alias-ind> element into the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body; and

3) shall include a <called-functional-alias-URI> element into the <mcdata-Params> element of the <mcdatainfo> element of the application/vnd.3gpp.mcdata-info+xml MIME body with the target functional alias used in the initial SIP INVITE request for the IP connectivity session establishment.

On receipt of a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request, the MCData client:

1) shall indicate to the MCData user or user application that the IP Connectivity session could not be established; and

2) shall send a SIP ACK request as specified in 3GPP TS 24.229 [5].

On receipt of an indication from the media plane indicating that the IP Connectivity session could not be established, the MCData client:

1) shall generate a SIP BYE request according to 3GPP TS 24.229 [5] with:

a) Reason code set to "FAILURE\_CAUSE";

b) cause set to "1"; and

c) text set to "Media bearer or QoS lost";

2) shall set the Request-URI to the MCData session identity to release; and

3) shall send a SIP BYE request towards MCData server according to 3GPP TS 24.229 [5].

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

### 20.2.2 MCData client terminating procedures

Upon receipt of a SIP INVITE request for IP Connectivity session for terminating MCData client"request, the MCData client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [5] with the clarifications below.

The MCData client:

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

a) MCData client does not have enough resources to handle the IP Connectivity session; or

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

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCData function either with appropriate reject code as specified in 3GPP TS 24.229 [5] and warning texts as specified in clause 4.9 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure and skip the rest of the steps of this clause;

3) may provide to the MCData user or user application the MCData ID of the inviting MCData user;

3A) may display to the MCData user the functional alias of the inviting MCData user, if provided;

3B) may display to the MCData user the functional alias used in the initil communivation request, if provided;

4) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [5];

5) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

6) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [38]. The "refresher" parameter in the Session-Expires header field shall be set to "uas";

7) shall include the g.3gpp.mcdata.ipconn media feature tag in the Contact header field of the SIP 200 (OK) response;

8) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcdata.ipconn" in the Contact header field of the SIP 200 (OK) response;

9) shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [5] with the clarifications given in clause 20.2.0b; and

10) shall send the SIP 200 (OK) response towards the MCData server according to rules and procedures of 3GPP TS 24.229 [5].

On receipt of an SIP ACK message to the sent SIP 200 (OK) message, the MCData client:

1) shall interact with the media plane as specified in 3GPP TS 24.582 [15] clause 13.1.3.

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

### 20.4.2 Terminating procedures

In the procedures in this clause:

1) MCData ID in an incoming SIP INVITE request refers to the MCData ID of the originating user from the <mcdata-calling-user-id> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the incoming SIP INVITE request;

2) MCData ID in an outgoing SIP INVITE request refers to the MCData ID of the called user in the <mcdata-request-uri> element of the application/vnd.3gpp.mcdata-info+xml MIME body of the outgoing SIP INVITE request;

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

1) if unable to process the request may reject the SIP INVITE 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] and skip the rest of the steps;

2) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if:

a) an Accept-Contact header field does not include the g.3gpp.mcdata.ipconn media feature tag; or

b) 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.ipconn";

3) shall cache SIP feature tags, if received in the Contact header field and if the specific feature tags are supported;

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

5) if the <request-type> element in the application/vnd.3gpp.mcdata-info+xml MIME body of the SIP INVITE request is set to a value of "one-to-one-ipconn" and the SIP INVITE request:

a) does not contain an application/resource-lists MIME body or contains an application/resource-lists MIME body with more than one <entry> element, shall return a SIP 403 (Forbidden) response with the warning text set to "227 unable to determine targeted user for one-to-one IP Connectivity" in a Warning header field as specified in clause 4.9, and skip the rest of the steps below;

a1) contains an <mcdata-Params> element of the <mcdatainfo> element of an application/vnd.3gpp.mcdata-info+xml MIME body with a <call-to-functional-alias-ind> element set to a value of "true":

i) shall identify the MCData ID(s) of the MCData user(s) that have activated the received called functional alias in the MIME resource-lists body of the SIP INVITE request by performing the actions specified in clause 22.2.2.2.8, and:

A) if unable to determine any MCData ID that has activated the received called functional alias in the MIME resource-lists body of the SIP INVITE, shall reject the SIP INVITE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in clause 4.9, and shall not continue with the rest of the steps; and

B) shall select one of the identified MCData IDs, and shall send a SIP 300 (Multiple Choices) response to the SIP INVITE request populated according to 3GPP TS 24.229 [5], IETF RFC 3261 [24] with:

I) a Contact header field containing a SIP URI for the MCData session identity; and

II) an application/vnd.3gpp.mcdata-info MIME body with a <mcdata-request-uri> element set to the selected MCData ID and shall not continue with the rest of the steps in this clause;

NOTE: How the controlling MCData function selects the appropriate MCData ID is implementation-specific.

b) contains an application/resource-lists MIME body with exactly one <entry> element, shall invite the MCData user identified by the <entry> element of the MIME body, as specified in clause 20.4.1; and

c) can interact with the media plane, in case routing or transmission control is necessary.

Upon receiving a SIP 200 (OK) response for a SIP INVITE request as specified in clause 20.4.1 and if the MCData ID in the SIP 200 (OK) response matches to the MCData ID in the corresponding SIP INVITE request, the controlling MCData function:

1) shall invoke the procedure in clause 6.3.7.1.23 with an indication that the applicable MCData subservice is IP Connectivity, in order to generate a SIP 200 (OK) response to the received SIP INVITE request according to 3GPP TS 24.229 [5]; and

2) shall send the generated SIP 200 (OK) response to the inviting MCData client according to 3GPP TS 24.229 [5].

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

## D.1.2 XML schema

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema

 xmlns:xs="http://www.w3.org/2001/XMLSchema"

 targetNamespace="urn:3gpp:ns:mcdataInfo:1.0"

 xmlns:mcdatainfo="urn:3gpp:ns:mcdataInfo:1.0"

 elementFormDefault="qualified"

 attributeFormDefault="unqualified"

 xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">

 <xs:import namespace="http://www.w3.org/2001/04/xmlenc#" schemaLocation="http://www.w3.org/TR/xmlenc-core/xenc-schema.xsd"/>

 <!-- root XML element -->

 <xs:element name="mcdatainfo" type="mcdatainfo:mcdatainfo-Type" id="info"/>

 <xs:complexType name="mcdatainfo-Type">

 <xs:sequence>

 <xs:element name="mcdata-Params" type="mcdatainfo:mcdata-ParamsType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcdatainfo:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="mcdata-ParamsType">

 <xs:sequence>

 <xs:element name="mcdata-access-token" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="request-type" type="xs:string" minOccurs="0"/>

 <xs:element name="mcdata-request-uri" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="mcdata-calling-user-id" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="mcdata-called-party-id" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="mcdata-calling-group-id" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="alert-ind" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="originated-by" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="mcdata-client-id" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:element name="mcdata-controller-psi" type="mcdatainfo:contentType" minOccurs="0"/>

 <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 <xs:element name="anyExt" type="mcdatainfo:anyExtType" minOccurs="0"/>

 </xs:sequence>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

<!-- anyExt elements for MCData-Params-->

 <xs:element name="emergency-alert-area-ind" type="xs:boolean"/>

 <xs:element name="group-geo-area-ind" type="xs:boolean"/>

 <xs:element name="pre-established-session-ind" type="xs:boolean"/>

 <xs:element name="call-to-functional-alias-ind" type="xs:boolean"/>

 <xs:element name="mcdata-communication-state" type="mcdatainfo:mcdataCommunicationStateType"/>

 <xs:simpleType name="mcdataCommunicationStateType">

 <xs:restriction base="xs:string">

 <xs:enumeration value="establish-request"/>

 <xs:enumeration value="establish-success"/>

 <xs:enumeration value="establish-fail"/>

 <xs:enumeration value="terminate-request"/>

 <xs:enumeration value="terminated"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:element name="emergency-ind" type="xs:boolean"/>

 <xs:element name="alert-ind-rcvd" type="xs:boolean"/>

 <xs:element name="mc-org" type="xs:string"/>

 <xs:element name="functional-alias-URI" type="mcdatainfo:contentType"/>

 <xs:element name="multiple-devices-ind" type="mcdatainfo:contentType"/>

 <xs:element name="imminentperil-ind" type="xs:boolean"/>

 <xs:element name="emergency-ind-rcvd" type="xs:boolean"/>

 <xs:element name="binding-ind" type="xs:boolean"/>

 <xs:element name="binding-fa-uri" type="xs:anyURI"/>

 <xs:element name="unbinding-fa-uri" type="xs:anyURI"/>

 <xs:element name="called-functional-alias-URI" type="xs:anyURI"/>

 <xs:element name="store-all-private-comms-in-msgstore" type="xs:boolean"/>

 <xs:element name="store-all-group-comms-in-msgstore" type="xs:boolean"/>

 <xs:element name="store-specific-private-comms-in-msgstore" type="mcdatainfo:storageCtrlType"/>

 <xs:element name="store-specific-group-comms-in-msgstore" type="mcdatainfo:storageCtrlType"/>

 <xs:simpleType name="storageCtrlType">

 <xs:restriction base="xs:string">

 <xs:enumeration value="enable"/>

 <xs:enumeration value="disable"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:simpleType name="protectionType">

 <xs:restriction base="xs:string">

 <xs:enumeration value="Normal"/>

 <xs:enumeration value="Encrypted"/>

 </xs:restriction>

 </xs:simpleType>

 <xs:complexType name="contentType">

 <xs:choice>

 <xs:element name="mcdataURI" type="xs:anyURI"/>

 <xs:element name="mcdataString" type="xs:string"/>

 <xs:element name="mcdataBoolean" type="xs:boolean"/>

 <xs:any namespace="##other" processContents="lax"/>

 <xs:element name="anyExt" type="mcdatainfo:anyExtType" minOccurs="0"/>

 </xs:choice>

 <xs:attribute name="type" type="mcdatainfo:protectionType"/>

 <xs:anyAttribute namespace="##any" processContents="lax"/>

 </xs:complexType>

 <xs:complexType name="anyExtType">

 <xs:sequence>

 <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

 </xs:sequence>

 </xs:complexType>

</xs:schema>

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

## D.1.3 Semantic

The <mcdatainfo> element is the root element of the XML document. The <mcdatainfo> element can contain subelements.

NOTE 1: The subelements of the <mcdata-info> are validated by the <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> particle of the <mcdata-info> element

If the <mcdatainfo> contains the <mcdata-Params> element then:

1) the <mcdata-access-token>, <mcdata-request-uri>, <mcdata-controller-psi>, <mcdata-calling-user-id>, <mcdata-called-party-id>, <mcdata-calling-group-id>, <alert-ind>, <originated-by>, <mcdata-client-id> and <functional-alias-URI> can be included with encrypted content;

2) for each element in 1) that is included with content that is not encrypted:

a) the element has the "type" attribute set to "Normal";

b) if the element is the <mcdata-request-uri>, <mcdata-calling-user-id>, <mcdata-called-party-id>, <mcdata-calling-group-id>, <originated-by> or <functional-alias-URI> then the <mcdataURI> element is included;

c) if the element is the <mcdata-access-token> or <mcdata-client-id>, then the <mcdataString> element is included; and

d) if the element is <alert-ind>, then the <mcdataBoolean> element is included; and

3) for each element in 1) that is included with content that is encrypted:

a) the element has the "type" attribute set to "Encrypted";

b) the <xenc:EncryptedData> element from the "[http://www.w3.org/2001/04/xmlenc#](http://www.w3.org/2001/04/xmlenc)" namespace is included and:

i) can have a "Type" attribute can be included with a value of "<http://www.w3.org/2001/04/xmlenc#Content>";

ii) can include an <EncryptionMethod> element with the "Algorithm" attribute set to value of "http://www.w3.org/2009/xmlenc11#aes128-gcm";

iii) can include a <KeyInfo> element with a <KeyName> element containing the base 64 encoded XPK-ID; and

iv) includes a <CipherData> element with a <CipherValue> element containing the encrypted data.

NOTE 2: When the optional attributes and elements are not included within the <xenc:EncryptedData> element, the information they contain is known to sender and the receiver by other means.

If the <mcdatainfo> contains the <mcdata-Params> element then:

1) the <mcdata-access-token> can be included with the access token received during authentication procedure as described in 3GPP TS 24.482 [24];

2) the <request-type> can be included with:

a) a value of "one-to-one-sds" to indicate that the MCData client wants to initiate a one-to-one SDS request;

b) a value of "group-sds" to indicate the MCData client wants to initiate a group SDS request;

c) a value of "one-to-one-fd" to indicate that the MCData client wants to initiate a one-to-one FD request;

d) a value of "group-fd" to indicate that the MCData client wants to initiate a group FD request;

e) a value of "msf-disc-req" to indicate that the MCData client wishes to discover the absoluteURI of the media storage function for HTTP requests;

f) a value of "msf-disc-res" when the participating MCData function sends the absolute URI to the MCData client;

g) a value of "notify" when the controlling MCData function needs to send a notification to the MCData client;

h) a value of "one-to-one-sds-session" to indicate that the MCData client wants to initiate a one-to-one SDS session;

i) a value of "group-sds-session" to indicate the MCData client wants to initiate a group SDS session;

j) a value of "functional-alias-status-determination" when a client initiates a subscription request to FA status;

k) "fa-group-binding-req" when a client initiates a request for binding of a functional alias with the MCData group(s) for the MCData user; or

l) a value of "store-comms-in-msgstore-ctrl-req" when an MCData client initiates a request to control the storage of MCData communications (private and group) into MCData message store;

3) the <mcdata-request-uri> can be included with an MCData group ID or an MCData user ID;

4) the <mcdata-calling-user-id> can be included, set to MCData ID of the originating user;

5) the <mcdata-called-party-id> can be included, set to the MCData ID of the terminating user;

6) the <mcdata-calling-group-id> can be included to indicate the MCData group identity to the terminating user;

7) the <alert-ind> can be:

a) set to "true" to indicate that an alert is to be sent; or

b) set to "false" to indicate that an alert is to be cancelled;

8) the <originated-by> can be included, set to the MCData ID of the originating user of an MCData emergency alert when being cancelled by another authorised MCData user;

9) the <mcdata-client-id> can be included, set to the MCData client ID of the MCData client that originated a SIP INVITE request, SIP REFER request, SIP REGISTER request, SIP PUBLISH request or SIP MESSAGE request;

10) the <mcdata-controller-psi> can be included, set to the PSI of the controlling MCData function that handled the one-to-one or group MCData data request; and

11) the <anyExt> can be included with the following elements:

a) a <pre-established-session-ind> element :

i) set to the value "true" by the MCData client in a pre-established session setup request to indicate to the MCData participating function about initiation of a pre-established session;

b) an <mcdata-communication-state> element can be included to indicate the state of MCData communication within a pre-established session. The <mcdata-communication-state> can be set to:

i) the value "establish-request" by the MCData participating function to indicate to the MCData client about an MCData communication establishment request within a pre-established session;

ii) the value "establish-success" by the MCData participating function or the MCData client to indicate that the MCData communication is established successfully;

iii) the value "establish-fail" by the MCData participating function or the MCData client to indicate that the MCData communication establishment is failed or rejected;

iv) the value "terminate-request" by the MCData participating function to indicate to the MCData client about an MCData communication termination request within a pre-established session; or

v) the value "terminated" by the MCData participating function or the MCData client to indicate that the MCData communication is terminated;

c) an <emergency-ind> element can be included and set to:

i) "true" to indicate that the communication that the MCData client is initiating is an emergency MCData communication; or

ii) "false" to indicate that the MCData client is cancelling an emergency MCData communication (i.e. converting it back to a non-emergency communication);

d) an <alert-ind-rcvd> element:

i) may be set to "true" and included in a SIP MESSAGE to indicate that the emergency alert or cancellation was received successfully;

e) an <mc-org> element may be:

i) set to the MCData user's Mission Critical Organization and included in an emergency alert sent by the MCData server to terminating MCData clients;

f) a <functional-alias-URI> element set to the value of the functional alias that is used together with the "mcdata-calling-user-id";

g) an <emergency-alert-area-ind> element:

i) set to the value "true" when the MCData client has entered an emergency alert area; or

ii) set to the value "false" when the MCData client has exited an emergency alert area;

h) a <group-geo-area-ind> element:

i) set to the value "true" when the MCData client has entered a group geographic area; or

ii) set to the value "false" when the MCData client has exited a group geographic area;

i) an <imminentperil-ind> element can be included if the <mcdata-request-uri> is also included and set to an MCData group ID, in which case the <imminentperil-ind> element is to be set to:

i) "true" to indicate that the communication that the MCData client is initiating is an imminent peril MCData communication; or

ii) "false" to indicate that the MCData client requests that the communication should no longer be considered an imminent peril MCData communication;

j) an <emergency-ind-rcvd> element:

i) can be set to "true" and included in a SIP MESSAGE to indicate that the in-progress emergency cancellation request was received successfully;

k) a <multiple-devices-ind> element can be included and set to:

i) "true" to indicate to the client that multiple clients are registered for the MCData user; or

ii) "false" to indicate to the client that no other clients are registered for the MCData user;

l) a <binding-ind> element set to:

i) "true" when the user wants to create a binding of a particular functional alias with the specified list of MCData groups for the MCData client; or

ii) "false" when the user wants to remove a binding of a particular functional alias from the specified list of MCData groups for the MCData client;

m) a <binding-fa-uri> element set to:

i) a URI of a functional alias that shall be bound with the specified list of MCData groups for the MCData client;

n) a <unbinding-fa-uri> element set to:

i) a URI of a functional alias that shall be unbound from the specified list of MCData groups for the MCData client;

o) a <store-all-private-comms-in-msgstore> element can be included and set to:

i) "true" when the user wants to store his/her MCData private communications into his/her MCData message store account; or

ii) "false" when the user do not store his/her MCData private communications into his/her MCData message store account;

p) a <store-all-group-comms-in-msgstore> element can be included and set to:

i) "true" when the user wants to store his/her MCData group communications into his/her MCData message store account; or

ii) "false" when the user do not store his/her MCData group communications into his/her MCData message store account;

q) a <store-specific-private-comms-in-msgstore> element can be included and set to:

i) set to a value of "enable" when the user wants to store the specified MCData private communications for which user is authorized to store the communication into the MCData message store; or

ii) set to a value of "disable" when the user do not wants to store the specified MCData private communications for which user is authorized to store the communication into the MCData message store;

r) a <store-specific-group-comms-in-msgstore> element can be included and set to:

i) "enable" when the user wants to store the specified MCData group communications for which user is authorized to store the communication into the MCData message store; or

ii) "disable" when the user do not wants to store the specified MCData group communications for which user is authorized to store the communication into the MCData message store;

s) an <call-to-functional-alias-ind> element can be included and set to:

i) "true" when the MCData client is using a functional alias to identify the MCData IDs of the potential target MCData users; or

ii) "false" when the MCData client is using MCData IDs to identify the potential target MCData users; and

t) a <called-functional-alias-URI> element set set to the value of the functional alias used in the communication request.

Absence of the <emergency-ind>, <alert-ind> and <imminentperil-ind> in a SIP INVITE request indicates that the MCData client is initiating a non-emergency communication.

Absence of the <call-to-functional-alias-ind> in a SIP INVITE or a SIP REFER request indicates the use of the MCData IDs of the potential target MCData users.

The recipient of the XML ignores any unknown element and any unknown attribute.

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