

Layered HLR AUC Subscription Repair and Remove Actions over CAI3G

Ericsson Dynamic Activation 1

INTERFACE DESCRIPTION

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1 Introduction

This section is an introduction to this document. It contains information about the prerequisites, purpose, scope, and target group for the document. This section also contains explanations of typographic conventions used in this document.

This document refers to the CAI3G corresponding to MML family interface, which is deprecated from Ericsson Multi Activation (EMA) 15.0 and onwards. It is only to be considered in case the CAI3G corresponding to MML family parameter in the Ericsson Dynamic Activation (EDA) GUI has been enabled and provisioning is to be conducted over this interface.

Note: The previous statement does not apply for:

- Identifier Namespace:

```
Identifier@http://schemas.ericsson.com/pg/cudb/1.0/
```

- MultiServiceConsumer Namespace:

```
MultiServiceConsumer@http://schemas.ericsson.com/pg/cudb/1.0/
```

1.1 Purpose and Scope

The Dynamic Activation User Data Consolidation (UDC) Activation and Provisioning interfaces are designed to handle temporary faults, such as communication problems or busy responses from network elements. Not all problems are temporary though, and these cannot be possible to solve by resending the operation. These faults must be analyzed manually and one or several actions can be necessary to repair or remove the operation. This document holds information about the different CAI3G operation that can be used for removing or repairing these persisting faults.

1.2 Target Group

The target group for this document is as follows:

- System Integrator

For more information about the different target groups, refer to *Library Overview*, Reference [3].



1.3 Typographic Conventions

Typographic conventions are described in *Library Overview*, Reference [3].

In addition, this document uses the following to indicate operations:

C	Create
S	Set
G	Get
D	Delete

1.4 Prerequisites

To use this document fully, users must meet the following prerequisites:

- Basic knowledge about the Dynamic Activation product
- Knowledge about *Generic CAI3G Interface 1.2*, Reference [2]
- Knowledge about the CUDB data model (refer to Reference [4])

1.5 Namespaces

This document refers to the following namespaces:

- CAI3G 1.2 Namespace:
`http://schemas.ericsson.com/cai3g1.2/`
- Association Namespace:
`Association@http://schemas.ericsson.com/pg/cudb/1.0/`
- Identifier Namespace:
`Identifier@http://schemas.ericsson.com/pg/cudb/1.0/`
- IMSIChangeOverData Namespace:
`IMSIChangeOverData@http://schemas.ericsson.com/pg/cudb/1.0/`
- MultipleSubscriptionAssociation Namespace:
`MultipleSubscriptionAssociation@http://schemas.ericsson.com/pg/cudb/1.0/`
- MultipleSubscriptionData Namespace:



MultipleSubscriptionData@http://schemas.ericsson.com/pg/cudb/1.0/

- MultipleSubscriptionPrimaryMSISDN Namespace:

MultipleSubscriptionPrimaryMSISDN@http://schemas.ericsson.com/pg/cudb/1.0/

- MultipleSubscriptionSecondaryMSISDN Namespace:

MultipleSubscriptionSecondaryMSISDN@http://schemas.ericsson.com/pg/cudb/1.0/

- MultiServiceConsumer Namespace:

MultiServiceConsumer@http://schemas.ericsson.com/pg/cudb/1.0/

- Subscription Namespace:

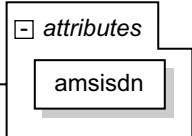


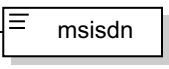

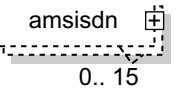
Subscription@http://schemas.ericsson.com/pg/cudb/1.0/

1.6


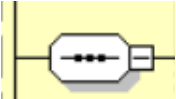
Legends

The following table shows the legends used in XML schema figures in this specification.

Table 1 Legends Used in XML Schema Figures in This Specification

Legend	Description
	XML attribute
	Optional XML element
	Choice icon
	Mandatory XML element
	Structured element
	Subobject element The occurrence of this element is 0–15.



Legend	Description
	User-defined type This is not a standard XML schema type. It is introduced to describe MO schema structure more clearly. In practice, this type is to be replaced by the corresponding elements.
	Sequence icon A list of elements, the sequence order must be followed.

1.7 Operations

See the following table for the operations or Managed Objects (MOs), and valid operations covered in this document.

Table 2 Subscription Repair or Remove CSOs

MO	Operation			
	Create	Get	Set	Delete
Association ⁽¹⁾				x
Identifier	x		x	x
ImsiChangeOverData			x	x
MultipleSubscriptionAssociationData ⁽¹⁾				x
MultipleSubscriptionData ⁽¹⁾				x
MultipleSubscriptionPrimaryMSISDN ⁽¹⁾			x	
MultipleSubscriptionSecondaryMSISDN ⁽¹⁾				x
MultiServiceConsumer				x
Subscription				x

(1) This MO is related to Multiple Subscription provisioning.

1.8 Web Service Interface

The Web Services Definition Language (WSDL) and XML Schema Definition Language (XSD) files that describe the provisioning interface can be found in /home/dveinstaller/ma/. It is also possible to download the files and view or store them in an appropriate area by following below instruction:

1. Save the zip file, [Dynamic Activation WSDL and XSD files.zip](#), to a local folder.
2. Unpack the zip file.



1.9 MOType

MOType is a plain text string based on the type `xs:string`. An MO type consists of two parts. One is the namespace of the MO, and the other is the MO name string that is always starting with an alphabetical character in either upper or lower case, followed by zero or more alphabetical characters, digits or underscores.

Those two parts are connected with symbol @. The syntax of the MOType string is `MO_Name@MO_Namespace`. The name string of an MO type must follow the regular expression: `[A-Za-z][A-Za-z0-9]*`

The MO name together with the MO namespace must be globally unique.

1.10 MOId

MOId is an Extensible Markup Language (XML) fragment containing the MOId parameter-value pairs that are used to identify an MO instance in the interface data model. CAI3G 1.2 standard supports compound MO identifiers or multiple MO identifier. The following is an example of an MOId:

```
<MOId>
  <msisdn>46455395000</msisdn>
  <imsi>46234563545000</imsi>
</MOId>
```

Example 1 Example of MOId

The MOId is defined as a sequence of `xs:any` element in CAI3G schema file. It is the developers responsibility to define the real schema for this parameter.

The MOId is also the key attributes that must be defined in the top-level element, `CreateMODefinition` or `SetMODefinition`, within `MOAttributes` parameter.

Each implementation of CAI3G interface is to define own logic relationship of MOId. It is also the CAI3GAgents responsibility to interpret this parameter correctly by either the hard-coded logic or the dynamic parsing of the schema.





2 Delete Association

This section covers the command `DeleteAssociation`.

`DeleteAssociation` deletes an association and its sub entries in the CUDB.

MOType

`Association@http://schemas.ericsson.com/pg/cudb/1.0/`

2.1 Request Data

2.1.1 Parameters

MOId

Table 3 Delete Association MOId

Parameter	Type	Occurrence	Description
assocId	String 32 characters. Allowed characters are digits 0-9, and letters a-f.	Mandatory	Unique ID for an Association in the CUDB.

MOAttributes

N/A

2.2 Examples

Request Example

This section gives an example of a `DeleteAssociation` request message, as shown in Example 2.



```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
  xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>Association@http://schemas.ericsson.com/pg/
      cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:assocId>00000000001111111111222222222233</ns:assocId>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 2 Delete Association Request Message

The assocId 00000000001111111111222222222233 is deleted.

Response Example

This section gives an example of a DeleteAssociation response message, as shown in Example 3.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
    </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse
      xmlns:ns2="http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>
```

Example 3 Delete Association Response Message



3 Create Identifier

This section covers the command `CreateIdentifier`.

`CreateIdentifier` creates an identifier that is connected to the specified service in the CUDb.

MOType

Identifier@http://schemas.ericsson.com/pg/cudb/1.0/

3.1 Request Data

3.1.1 Parameters

MOId

Table 4 Create Identifier MOId

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits.	Optional	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)
imsi	Digit string 6-15 digits	Optional	The IMSI number of the subscriber
imsiAux	Digit string 6-15 digits	Optional	The IMSIAux number of the subscriber
service	enumeration ⁽¹⁾ For example HLR AUC	Mandatory ⁽²⁾	The service ID, for example HLR or AUC

(1) All available serviceTypes can be found in: `webservice_provisioning/schemas/cudb_r1.0/types/cudb_types.xsd`

(2) Service parameter is mandatory and one of the `msisdn`, `imsi`, or `imsiAux` parameters must be used.

MOAttributes

The parameters that are used in the operation are shown in Figure 1.

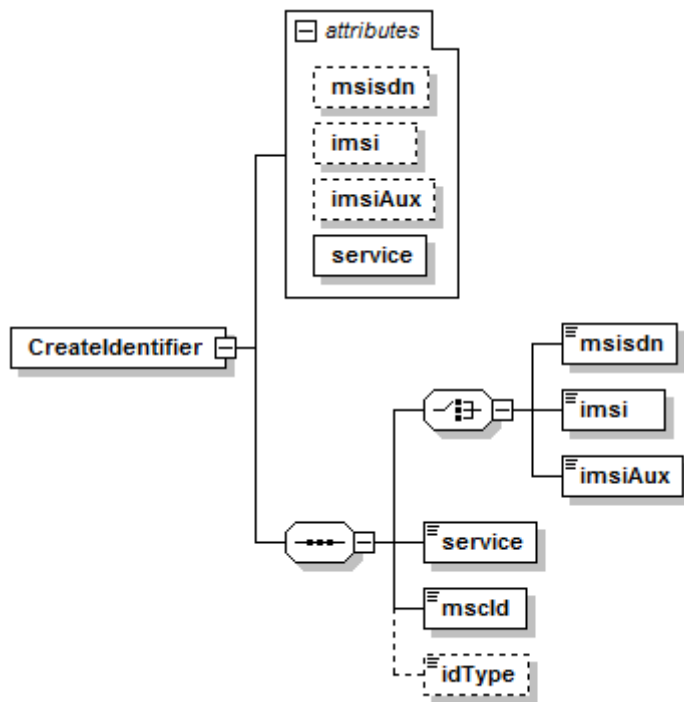


Figure 1 Parameters in Create Identifier

The following table covers the parameters that can be used in a CreateIdentifier request.

Table 5 Create Identifier Parameters

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits.	Optional	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)
imsi	Digit string 6-15 digits	Optional	The IMSI number of the subscriber
imsiAux	Digit string 6-15 digits	Optional	The IMSIAux number of the subscriber
service	enumeration ⁽¹⁾ For example HLR AUC	Mandatory ⁽²⁾	The service ID, for example HLR or AUC



Table 5 Create Identifier Parameters

Parameter	Type	Occurrence	Description
mscId	String 32 characters. Allowed characters are digits 0-9, and letters a-f.	Mandatory	Unique ID for the multiServiceCumsumer.
idType	enumeration SHARED NOSHARE	Optional ⁽³⁾	States whether an MSISDN is of type shared or non-shared (additional MSISDN).

(1) All available serviceTypes can be found in: *webservice_provisioning/schemas/cudb_r1.0/types/cudb_types.xsd*.

(2) Service parameter is mandatory and one of the *msisdn*, *imsi*, or *ismisAux* parameters must be used.

(3) Only applicable when the MOId is of type *msisdn*.

3.2 Examples

Request Example

This section gives an example of a *CreateIdentifier* request message, as shown in Example 4.

```
<soapenv:Envelope xmlns:soapenv=
"http://schemas.xmlsoap.org/soap/envelope/" xmlns:cai3=
"http://schemas.ericsson.com/cai3gl.2/"
xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Create>
      <cai3:MOType>Identifier@http://schemas.ericsson.com/
pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:imsi>222222</ns:imsi>
        <ns:service>AUC</ns:service>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:CreateIdentifier imsi="222222" service="AUC">
          <ns:imsi>222222</ns:imsi>
          <ns:service>AUC</ns:service>
          <ns:mscId>0000000000111111111222222222233</ns:mscId>
        </ns:CreateIdentifier>
      </cai3:MOAttributes>
    </cai3:Create>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 4 Create Identifier Request Message

A new IMSI identifier 222222 pointing to an existing AUC service below the mscId 0000000000111111111222222222233 has been created.

Response Example

This section gives an example of a *CreateIdentifier* response message, as shown in Example 5.



```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
    </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:CreateResponse xmlns:ns2=
    "http://schemas.ericsson.com/cai3g1.2/">
      <ns2:MOId>
        <ns:imsi xmlns:ns="http://schemas.ericsson.com/pg
        /cudb/1.0/">222222</ns:imsi>
        <ns:service xmlns:ns="http://schemas.ericsson.com
        /pg/cudb/1.0/">AUC</ns:service>
      </ns2:MOId>
    </ns2:CreateResponse>
  </S:Body>
</S:Envelope>
```

Example 5 *Create Identifier Response Message*



4 Set Identifier

This section covers the AUC Subscription command `SetIdentifier`.

`SetIdentifier` changes the marker that describes if a service is activated or not for a specific identifier in the CUDb.

MOType

Identifier@<http://schemas.ericsson.com/pg/cudb/1.0/>

4.1 Request Data

4.1.1 Parameters

MOId

Table 6 Set Identifier MOId

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Optional	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)
imsi	Digit string 6-15 digits	Optional	The IMSI number of the subscriber
imsiAux	Digit string 6-15 digits	Optional	The IMSIAux number of the subscriber
service	enumeration ⁽¹⁾ For example HLR AUC	Mandatory ⁽²⁾	The service ID, for example HLR or AUC

(1) All available serviceTypes can be found in: webservice_provisioning/schemas/cudb_r1.0/types/cudb_types.xsd.

(2) Service parameter is mandatory and one of the `msisdn`, `imsi`, or `imsiAux` parameters must be used.

MOAttributes

The parameters that are used in the operation are shown in Figure 2.

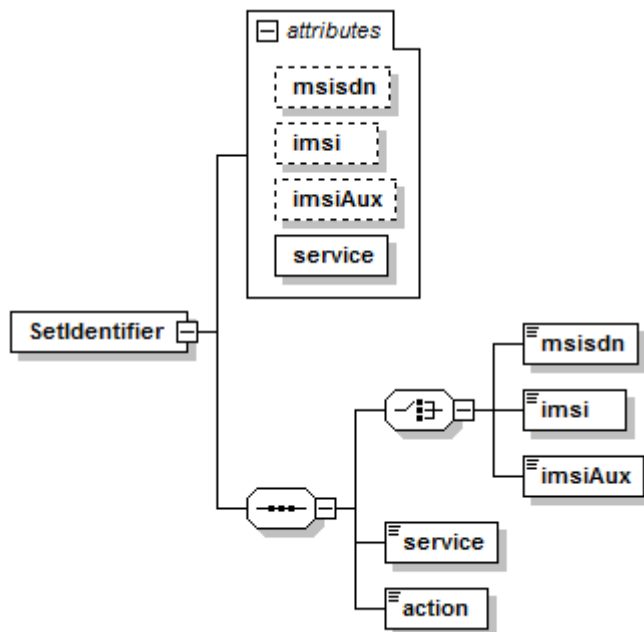


Figure 2 Parameters in Set Identifier

The following table covers the parameters that can be used in a SetIdentifier request.

Table 7 Set Identifier Parameters

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Optional	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)
imsi	Digit string 6-15 digits	Optional	The IMSI number of the subscriber
imsiAux	Digit string 6-15 digits	Optional	The IMSIAux number of the subscriber
service	enumeration ⁽¹⁾ For example HLR AUC	Mandatory ⁽²⁾	The service ID, for example HLR or AUC
action	enumeration INSERT WITHDRAW	Mandatory	Determines if the service is to be added or removed for the identifier.

(1) All available serviceTypes can be found in: [webservice_provisioning/schemas/cudb_r1.0/types/cudb_types.xsd](#)

(2) Service parameter is mandatory and one of the msisdn, imsi, or ismisAux parameters must be used.



4.2 Examples

Request Example

This section gives an example of a `SetIdentifier` request message, as shown in Example 6.

```
<soapenv:Envelope xmlns:soapenv=
"http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Set>
      <cai3:MOType>Identifier@http://schemas.ericsson.com/pg/
      cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:imsiAux>222222</ns:imsiAux>
        <ns:service>HLR</ns:service>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:SetIdentifier imsiAux="222222" service="HLR">
          <ns:imsiAux>222222</ns:imsiAux>
          <ns:service>HLR</ns:service>
          <ns:action>WITHDRAW</ns:action>
        </ns:SetIdentifier>
      </cai3:MOAttributes>
    </cai3:Set>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 6 Set Identifier Request Message

This request removed the HLR service from the `IMSIAux` mask for the Identities pointed to by the `IMSIAux` 222222. It did not touch the identifier aliases at all.

If the HLR service is the last service in the mask, the request fails. In that case `DeleteIdentifier` is to be used instead.

Response Example

This section gives an example of a `SetIdentifier` response message, as shown in Example 7.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
    </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:SetResponse xmlns:ns2=
      "http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>
```

Example 7 Set Identifier Response Message





5 Delete Identifier

This section covers the AUC Subscription command `DeleteIdentifier`.

`DeleteIdentifier` deletes an identifier in the CUDb.

MOType

`Identifier@http://schemas.ericsson.com/pg/cudb/1.0/`

5.1 Request Data

5.1.1 Parameters

MOId

Table 8 Delete Identifier MOId

Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits	Optional	The IMSI number of the subscriber
imsiAux	Digit string 6-15 digits	Optional	The IMSIAux number of the subscriber
msisdn	Digit string 5-15 digits	Optional	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)
service	enumeration ⁽¹⁾ For example HLR AUC	Mandatory ⁽²⁾	The service ID, for example HLR or AUC

(1) All available `serviceTypes` can be found in: `webservice_provisioning/schemas/cudb_r1.0/types/cudb_types.xsd`

(2) Service parameter is mandatory and one of the `msisdn`, `imsi`, or `imsiAux` parameters must be used.

MOAttributes

N/A



5.2 Examples

Request Example

This section gives an example of a DeleteIdentifier request message, as shown in Example 8.

```
<soapenv:Envelope xmlns:soapenv=
"http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>Identifier@http://schemas.ericsson.com/pg/
      cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:imsi>222222</ns:imsi>
        <ns:service>AUC</ns:service>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 8 Delete Identifier Request Message

This request deleted the IMSI identifier 222222 completely with masks and alias (if it was the last service to use it) for the AUC service. All other services for the IMSI and msc were left untouched.

Response Example

This section gives an example of a DeleteIdentifier response message, as shown in Example 9.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
    </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse xmlns:ns2=
      "http://schemas.ericsson.com/cai3g1.2/" />
    </S:Body>
</S:Envelope>
```

Example 9 Delete Identifier Response Message



6 Delete MultipleSubscriptionAssociationData

This section covers the command `DeleteMultipleSubscriptionAssociationData`.

`DeleteMultipleSubscriptionAssociationData` can be used to remove `MultipleSubscriptionData` in the association related to the `MultiServiceConsumer` identified by the `msisdn` parameter.

If the `amsisdn` parameter is not present, the `MultiServiceConsumer` is unlinked from the multiple subscription.

If the `MultiServiceConsumer` parameter is master of the multiple subscription, an error code is returned. The complete association must then be removed, see Section 2 on page 7.

If the `amsisdn` parameter is present, the additional `msisdn` that is identified by the `amsisdn` parameter, which belongs to the `MultiServiceConsumer`, is removed from the association.

MOType

`MultipleSubscriptionAssociation@http://schemas.ericsson.com/pg/cudb/1.0/`

6.1 Request Data

6.1.1 Parameters

MOId

Table 9 Delete MultipleSubscriptionAssociationData MOId

Parameter	Type	Occurrence	Description
assocId	String 32 characters. Allowed characters are digits 0-9, and letters a-f.	Mandatory	Unique ID for an Association in the CUDB
msisdn	Digit string 5-15 digits	Mandatory	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)
amsisdn	Digit string 5-15 digits	Optional	Additional Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)

MOAttributes

N/A



6.2 Examples

Request Example

This section gives an example of a DeleteMultipleSubscriptionAssociationData request message, as shown in Example 10.

```
<soapenv:Envelope xmlns:soapenv=
"http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>MultipleSubscriptionAssociationData@http://
schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:assocId>00000000001111111111222222222233
        </ns:assocId>
        <ns:msisdn>1234567890</ns:msisdn>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 10 Delete Multiple Subscription Association Data Request Message

This request deletes the MultipleSubscriptionData in the association 00000000001111111111222222222233 for the msid that belongs to MSIDSN 1234567890.

Response Example

This section gives an example of a DeleteMultipleSubscriptionAssociationData response message, as shown in:

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
    </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse xmlns:ns2=
"http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>
```

Example 11 Delete Multiple Subscription Association Data Response Message



7 Delete MultipleSubscriptionData

This section covers the command `DeleteMultipleSubscriptionData`. `DeleteMultipleSubscriptionData` deletes multiple subscription service for a `MultiServiceConsumer`.

MOType

`MultipleSubscriptionData@http://schemas.ericsson.com/pg/cudb/1.0/`

7.1 Request Data

7.1.1 Parameters

MOId

Table 10 Delete MultipleSubscriptionData MOId

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Mandatory	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN).

MOAttributes

The following table covers the parameters that can be used in a `DeleteMultipleSubscriptionData` request.

Table 11 Delete MultipleSubscriptionData Parameters

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Mandatory	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN).

7.2 Examples

Request Example

This section gives an example of a `DeleteMultipleSubscriptionData` request message, as shown in Example 12.



```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
  xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
  </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>MultipleSubscriptionData@http://
schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>123456</ns:msisdn>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 12 Delete Multiple Subscription Data Request Message

This request removes the MultipleSubscription service from the subscriber with msisdn 123456.

Response Example

This section gives an example of a DeleteMultipleSubscriptionData response message, as shown in Example 13.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
  </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse xmlns:ns2="http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>
```

Example 13 Delete Multiple Subscription Data Response Message



8 Set MultipleSubscriptionPrimaryMSISDN

This section covers the command `SetMultipleSubscriptionPrimaryMSISDN`. `SetMultipleSubscriptionPrimaryMSISDN` redirects a primary MSISDN alias in the CUDb. For a multiple subscription the primary MSISDN alias points to the corresponding MSISDN in the `secondaryMSISDN` branch. After `SetMultipleSubscriptionPrimaryMSISDN` has been successfully executed the primary MSISDN alias points to a `MultiServiceConsumer`.

MOType

`MultipleSubscriptionPrimaryMSISDN@http://schemas.ericsson.com/pg/cudb/1.0/`

8.1 Request Data

8.1.1 Parameters

MOId

Table 12 Set MultipleSubscriptionPrimaryMSISDN MOId

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Mandatory	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN)

MOAttributes

The parameters that are used in the operation are shown in Figure 3.

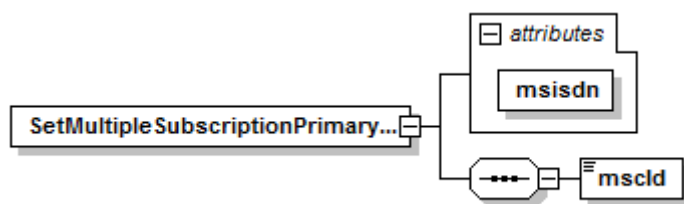


Figure 3 Parameters in Set MultipleSubscriptionPrimaryMSISDN

The following table covers the parameters that can be used in a `SetMultipleSubscriptionPrimaryMSISDN` request.

**Table 13** *Set MultipleSubscriptionPrimaryMSISDN Parameters*

Parameter	Type	Occurrence	Description
mscld	String 32 characters. Allowed characters are digits 0-9, and letters a-f.	Mandatory	Unique ID for a MultiServiceConsumer in the CUDb

8.2 Examples

Request Example

This section gives an example of a SetMultipleSubscriptionPrimaryMSISDN request message, as shown in Example 14.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3="http://schemas.ericsson.com/cai3gl.2/"
  xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef</cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Set>
      <cai3:MOType>
        MultipleSubscriptionPrimaryMSISDN@http://schemas.ericsson.com/pg/cudb/1.0/
      </cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>1234567890</ns:msisdn>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:SetMultipleSubscriptionPrimaryMSISDN
          msisdn="1234567890">
          <ns:mscId>
            00000000001111111111222222222233
          </ns:mscId>
        </ns:SetMultipleSubscriptionPrimaryMSISDN>
      </cai3:MOAttributes>
    </cai3:Set>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 14 Set Multiple Subscription Primary MSISDN Request Message

This request redirect the msisdn alias 1234567890 to point to the mscId 00000000001111111111222222222233.

Response Example

This section gives an example of a SetMultipleSubscriptionPrimaryMSISDN response message, as shown in Example 15.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3g="http://schemas.ericsson.com/cai3gl.2/">
  <S:Header>
    <cai3g:SessionId?></cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:SetResponse xmlns:ns2=
      "http://schemas.ericsson.com/cai3gl.2/" />
  </S:Body>
</S:Envelope>
```

Example 15 Set Multiple Subscription Primary MSISDN Response Message



9 Delete MultipleSubscriptionSecondaryMSISDN

This section covers the command `DeleteMultipleSubscriptionSecondaryMSISDN`. `DeleteMultipleSubscriptionSecondaryMSISDN` deletes the SecondaryMSISDN structure and its sub elements.

MOType

`MultipleSubscriptionSecondaryMSISDN@http://schemas.ericsson.com/pg/cudb/1.0/`

9.1 Request Data

9.1.1 Parameters

MOId

Table 14 Delete MultipleSubscriptionSecondaryMSISDN MOId

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Mandatory	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN).

MOAttributes

The following table covers the parameters that can be used in a `DeleteMultipleSubscriptionSecondaryMSISDN` request.

Table 15 Delete MultipleSubscriptionSecondaryMSISDN Parameters

Parameter	Type	Occurrence	Description
msisdn	Digit string 5-15 digits	Mandatory	Mobile Subscriber Integrated Services Digital Network (ISDN) (MSISDN).

9.2 Examples

Request Example

This section gives an example of a `DeleteMultipleSubscriptionSecondaryMSISDN` request message, as shown in Example 16.



```

<soapenv:Envelope xmlns:soapenv=
"http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>MultipleSubscriptionSecondaryMSISDN@http://
schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>1234567890</ns:msisdn>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>

```

Example 16 *Delete Multiple Subscription Secondary MSISDN Request Message*

This request deletes the whole SecondaryMSISDN structure for the subscriber with msisdn 1234567890.

Response Example

This section gives an example of a DeleteMultipleSubscriptionSecondaryMSISDN response message, as shown in Example 17.

```

<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>0123456789abcdef0123456789abcdef
    </cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse xmlns:ns2=
"http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>

```

Example 17 *Delete Multiple Subscription Secondary MSISDN Response Message*



10 Delete MultiServiceConsumer

This section covers the command `DeleteMultiServiceConsumer`. `DeleteMultiServiceConsumer` deletes a `MultiServiceConsumer` in the CUDb.

MOType

`MultiServiceConsumer@http://schemas.ericsson.com/pg/cudb/1.0/`

10.1 Request Data

10.1.1 Parameters

MOId

Table 16 Delete MultiServiceConsumer MOId

Parameter	Type	Occurrence	Description
mscId	String 32 characters. Allowed characters are digits 0-9, and letters a-f.	Mandatory	Unique ID for a MultiServiceConsumer in the CUDb

MOAttributes

The following table covers the parameters that can be used in a Delete MultiServiceConsumer request.

Table 17 Delete MultiServiceConsumer Parameters

Parameter	Type	Occurrence	Description
mscId	String 32 characters. Allowed characters are digits 0-9, and letters a-f.	Mandatory	Unique ID for a MultiServiceConsumer in the CUDb

10.2 Examples

Request Example

This section gives an example of a `DeleteMultiServiceConsumer` request message, as shown in Example 18.



```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
  xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
  <soapenv:Header>
    <cai3:SessionId>0123456789abcdef0123456789abcdef
    </cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>MultiServiceConsumer@http://
        schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:mscId>000000000011111111122222222233
        </ns:mscId>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 18 Delete Multi Service Consumer Request Message

This request deletes the `msc` with id `000000000011111111122222222233` as long as it is empty or only contains the `serv=AAA` entry.

Response Example

This section gives an example of a `DeleteMultiServiceConsumer` response message, as shown in Example 19.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId?></cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse xmlns:ns2="http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>
```

Example 19 Delete Multi Service Consumer Response Message



11 Faults and Errors

The generic structure for fault responses is covered in *Generic CAI3G Interface 1.2*, Reference [2]. That document also covers the generic fault codes, which are applicable to all CAI3G operations.

This section covers the subordinate CAI3G errors. They can appear in the `errorcode` element in the error message.

Only HLR AUC Subscription specific error codes are described in this section. These error codes are included in the Fault type `PGFault`.

For generic error codes, and information about the different Fault types, see *CAI3G Implementation*, Reference [5].

11.1 Subordinate HLR AUC Subscription Error Codes

The following table covers subordinate error codes for HLR AUC Subscription commands over the CAI3G interface.

Table 18 Subordinate HLR AUC Subscription Error Codes

Error Code	Error Message	MO	Operation
10463	Subscription does not belong to the multiple subscription	MultipleSubscriptionData	D
12001	Identifier not defined	Identifier	S/D
12002	MultiServiceConsumer not defined	Subscriber	D
		MultipleSubscriptionPrimaryMSISDN	S
12003	Identifier in use	Identifier	D
12004	Identifier already exist	Identifier	C
12007	MultiServiceConsumer used by application	Subscriber	D
12008	Association not defined	Association	D
		MultipleSubscriptionAssociationData	D
12009	MSISDN not defined	MultipleSubscriptionAssociationData	D
		MultipleSubscriptionData	D
		MultipleSubscriptionPrimaryMSISDN	S
		MultipleSubscriptionSecondaryMSISDN	D



Error Code	Error Message	MO	Operation
12010	AMSISDN not defined	MultipleSubscriptionAssociationData	D
12011	Not allowed to remove master MSISDN	MultipleSubscriptionAssociationData	D
12012	MSISDN in use by MultiServiceConsumer	MultipleSubscriptionPrimaryMSISDN	S

11.2 CAI3G Error Message Example

The following, shown in Example 20, is an example of a CAI3G error message.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>904c49ba0c19417e9d9d8ffa202c1b6f</cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:Fault xmlns:ns2="http://schemas.xmlsoap.org/soap/envelope/"
      xmlns:ns3="http://www.w3.org/2003/05/soap-envelope">
      <faultcode>ns2:Server</faultcode>
      <faultstring>This is a server fault</faultstring>
      <detail>
        <Cai3gFault:Cai3gFault xmlns="http://schemas.ericsson.com/cai3g1.2/"
          xmlns:Cai3gFault="http://schemas.ericsson.com/cai3g1.2/">
          <faultcode>4006</faultcode>
          <faultreason>
            <reasonText>External error.</reasonText>
          </faultreason>
          <faultrole>MF</faultrole>
          <details>
            <PGFault:PGFault xmlns="http://schemas.ericsson.com/pg/1.0"
              xmlns:PGFault="http://schemas.ericsson.com/pg/1.0">
              <errorcode>12002</errorcode>
              <errormessage>MULTISERVICECONSUMER NOT DEFINED</errormessage>
              <errordetails>MultiServiceConsumer not defined -
                [Processed by PG Node: vmx1771]</errordetails>
            </PGFault:PGFault>
          </details>
        </Cai3gFault:Cai3gFault>
      </detail>
    </ns2:Fault>
  </S:Body>
</S:Envelope>
```

Example 20 CAI3G Error Message



Reference List

Ericsson Documents

- [1] *Glossary of Terms and Acronyms*, 0033-CSH 109 628 Uen
- [2] *Generic CAI3G Interface 1.2 Specification*, 2/155 19-FAY 302 00 03 Uen
- [3] *Library Overview*, 18/1553-CSH 109 628 Uen
- [4] *CUDB LDAP Interwork Description*, 155 19-HDA 104 03/1 Uen
- [5] *CAI3G Implementation*, 26/155 19-CSH 109 628 Uen