

Layered Identity Changeover Provisioning 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 information about typographic conventions used in this document.

1.1 Purpose and Scope

This document describes a subset of the Customer Administration Interface Third Generation (CAI3G) inbound interface towards Ericsson™ Dynamic Activation (EDA). It covers the layered Identity Changeover commands that support the AUC, HLR, M2M, and EPS services. See Table 2 for an overview of the applicable operations.

1.2 Target Groups

The target group for this document is System Integrators.

For detailed information regarding the different target groups, see *Library Overview*, Reference [1].

1.3 Typographic Conventions

Typographic conventions are described in *Library Overview*, Reference [1].

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].

1.5 Namespaces

The following namespaces are referred to in this document:

- CAI3G 1.2 namespace:

`http://schemas.ericsson.com/cai3g1.2/`

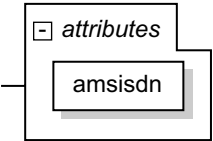



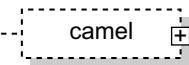
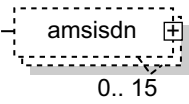
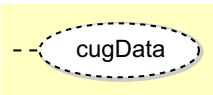
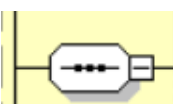
- Provisioning namespace:

`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
	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 commands, or Managed Objects (MOs), and valid operations covered in this document.

Table 2 Provisioning MOs

MO	Operation			
	Create	Get	Set	Delete
IMSI Changeover	X	X	X	X
IMSI Changeover Removal	X	-	-	-
MSISDN Changeover	X	-	-	-

1.8 CAI3G Request and Response

A CAI3G message consists of an MO name, an MOId, and MOAttributes. The MOId is always part of the request message. The MOAttributes can be part of either the request or the response.

For `Create` operations, the MOAttributes are parts of the request.

For `Get` operations, the MOAttributes are parts of the response.

For `Set` operations, the MOAttributes are parts of the request.

`Delete` operations do not have any MOAttributes.

1.9 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.

1.10 MOType

MOType is a plain text string based on the type `xs:string`. An MOType 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 MOType must follow the regular expression: [A-Za-z] [A-Za-z0-9] *

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

1.11 MOld

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

```
<xs:sequence>
  <xs:element name="msisdn" type="msisdnType" />
  <xs:choice>
    <xs:element name="ic" type="icType" />
    <xs:element name="index" type="indexType" />
  </xs:choice>
</xs:sequence>
```

Example 1 Example of MOld

The MOld 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 MOld 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 MOld. 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 Create IMSI Changeover

This section covers the `CreateIMSIChangeover` command.

`CreateIMSIChangeover` initiates an International Mobile Subscriber Identity (IMSI) Changeover procedure. It can be initiated in two ways:

- Force to immediate execution (parameter `DATE` not given or set to today).
- With an expiry date (parameter `DATE` given and is not today date).

After execution of the procedure, in both cases, all attempts to make calls with the old IMSI will be rejected.

Note:

- To initiate IMSI Changeover procedure for the new IMSI without AUC service, the switch `AUTCHOVERMAND` must be enabled. Otherwise the procedure is rejected with error "The IMSI is unknown in Authentication Centre". For more information, see chapter **Activation Logic** in *User Guide for Resource Activation*, Reference [3].
- If the old IMSI contains IMS service, the IMPU derived from old IMSI should be barred by manually setting attribute `sessionBarringInd` to `TRUE` before IMSI Changeover procedure starts. It means the IMPU derived from the old IMSI is only used for IMS registration purpose, not for HSS traffic session. For more information, refer to *Layered IMS Provisioning over CA/3G*, Reference [6]

This command is fault tolerant in the sense that it is always possible to be executed even if a previous `Create IMSI Changeover` has failed.

MOType

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

2.1 Request Data

2.1.1 Parameters

MOld

Table 3 Create IMSI Changeover MOld

Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	Old International Mobile Subscriber Identity (IMSI)
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	Mobile Subscriber ISDN Number (MSISDN)

(1) Either the *imsi* parameter or the *msisdn* parameter must be used.

MOAttributes

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

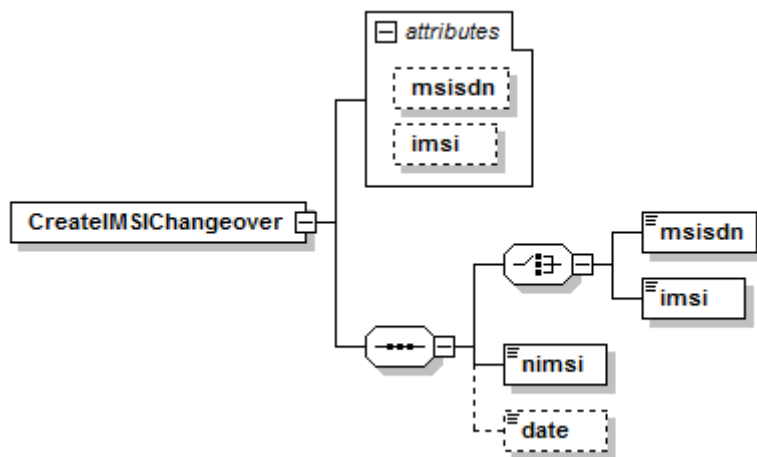


Figure 1 Parameters in Create IMSI Changeover

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

Table 4 Create IMSI Changeover Parameters

Parameter	Type	Occurrence	Description
date	Digit string 6 digits. The date is arranged as YYMMDD.	Optional	Activation date for the new IMSI. The date is not to be earlier than today and not later than a year from today's date.
imsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	International Mobile Subscriber Identity (Old IMSI).
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN
nimsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory	New IMSI.

(1) Either the *imsi* parameter or the *msisdn* parameter must be used.



2.2

Examples

Request Example

This section gives an example of a CreateIMSIChangeover 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?></cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Create>
      <cai3:MOType>IMSIChangeover@http://schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>3417429013</ns:msisdn>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:CreateIMSIChangeover msisdn="3417429013">
          <ns:msisdn>3417429013</ns:msisdn>
          <ns:nimsi>5673334420</ns:nimsi>
          <ns:date>020801</ns:date>
        </ns:CreateIMSIChangeover>
      </cai3:MOAttributes>
    </cai3:Create>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 2 Create IMSI Changeover Request Message

A change to a new IMSI 5673334420 is initiated for the mobile subscriber with MSISDN 3417429013, with expiry date on 1 August 2002.

Response Example

This section gives an example of a CreateIMSIChangeover 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?></cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:CreateResponse xmlns:ns2="http://schemas.ericsson.com/cai3g1.2/">
      <ns2:MOId>
        <ns:msisdn xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">3417429013</ns:msisdn>
      </ns2:MOId>
    </ns2:CreateResponse>
  </S:Body>
</S:Envelope>
```

Example 3 Create IMSI Changeover Response Message





3 Get IMSI Changeover

This section covers the `GetIMSIChangeover` command.

`GetIMSIChangeover` fetches IMSI Changeover data.

MOType

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

3.1 Request Data

3.1.1 Parameters

The following table covers the parameters that can be received in a `GetIMSIChangeover` request.

Either `msisdn` or `nimsi` must be specified in the request. When both `msisdn` and `nimsi` are specified, only `msisdn` is used in the processing of the request; `nimsi` is not validated to verify its reference to the specified `msisdn`.

Table 5 Get IMSI Changeover Parameters

Parameter	Type	Occurrence	Description
<code>msisdn</code>	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN
<code>nimsi</code>	Digit string 6-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	New IMSI

(1) Either the `nimsi` parameter or the `msisdn` parameter must be used

3.2 Response Data

3.2.1 Parameters

MOId

Table 6 Get IMSI Changeover MOId

Parameter	Type	Occurrence	Description
<code>msisdn</code>	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN
<code>nimsi</code>	Digit string 6-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	New IMSI

(1) Either the `nimsi` parameter or the `msisdn` parameter must be used

MOAttributes

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

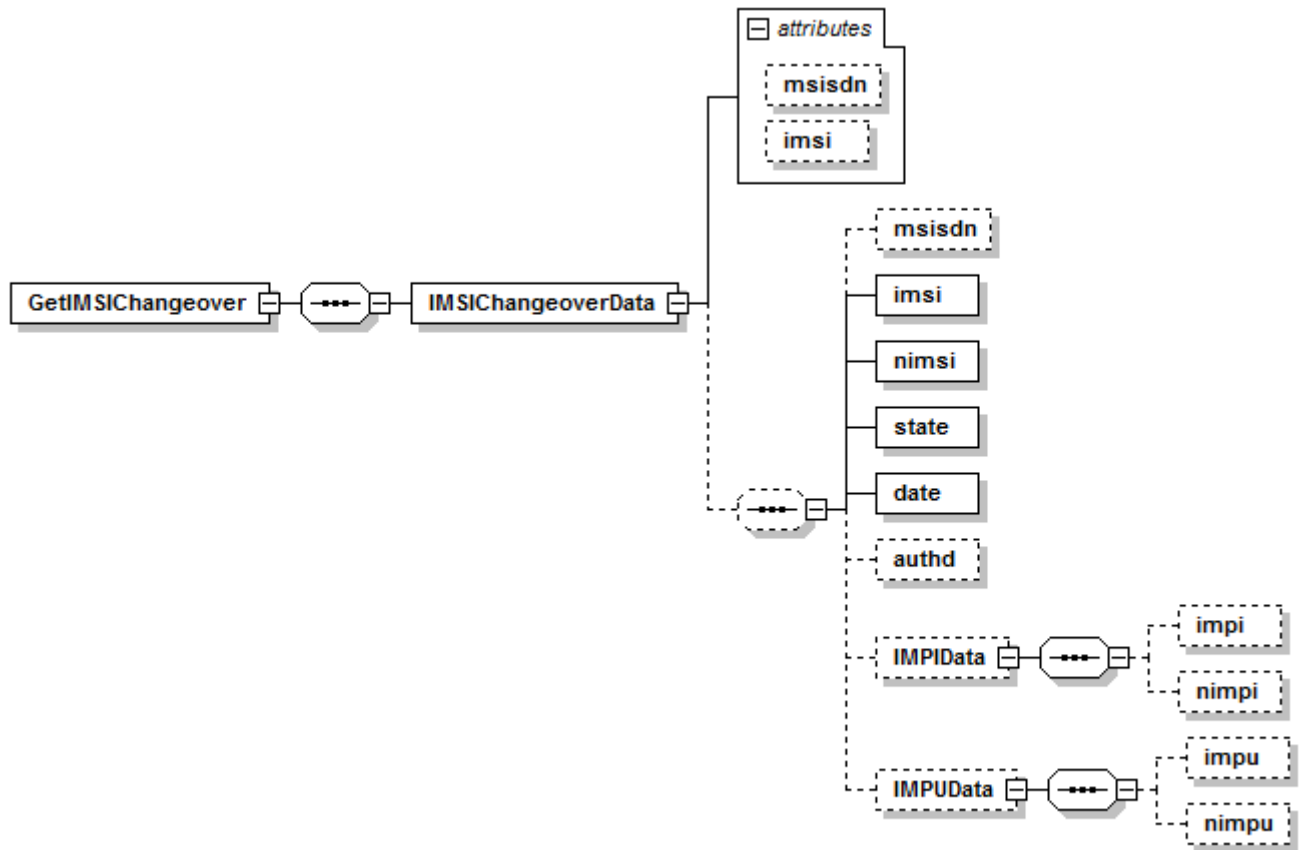


Figure 2 Parameters in Get IMSI Changeover

The following table covers the parameters that can be received in a GetIMSIChangeover response.

Table 7 Get IMSI Changeover Parameters

Parameter	Type	Occurrence	Description
authd	One of the following strings: <ul style="list-style-type: none"> • AVAILABLE • NO IMSI IN AUC • NO ACCESS TO AUC 	Optional	Authentication data. ⁽¹⁾
date	Digit string 6 digits. The date is arranged as YYMMDD.	Mandatory	Activation date for the new IMSI.



Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits Each digit is 0-9	Mandatory	International Mobile Subscriber Identity (IMSI). IMSI parameter is the operative IMSI if the Changeover state is Pending.
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory	MSISDN
nimsi	Digit string 6-15 digits Each digit is 0-9	Mandatory	New IMSI. NIMSI parameter is the operative IMSI if the Changeover state is Executed or Forced.
state	One of the following strings: <ul style="list-style-type: none">• PEND• EXEC• FORC	Mandatory	The different states that can be received are: <ul style="list-style-type: none">• PEND (Pending) - The changeover is still ongoing. At least one service has still not seen the new SIM card and the expiry date has not passed.• EXEC (Executed) - The changeover has been executed because the subscriber has used the new SIM card before the expiry date has passed.• FORC (Forced) - The changeover has been executed, either because the expiry date was reached or the operator has forced the changeover. For information, see <i>Function Specification Identity Changeover for Layered Applications</i> , Reference [4].
impi	String, 5 - 70	Optional	Identifies the Private Identity.
nimpi	String, 5- 70	Optional	Identifies the new Private Identity.
impu	String	Optional	Identifies the Public Identity. It is derived from IMSI. Examples: <ul style="list-style-type: none">• sip - sip:IMSI@ims.mncXXX.mccXXX.
nimpu	String	Optional	Identifies the new Public Identity. It is derived from IMSI. Examples: <ul style="list-style-type: none">• sip - sip:IMSI@ims.mncXXX.mccXXX.

(1) AUTHD is only available if subscriber earlier has initiated an Authentication Procedure ("Send Authentication Information" MAP operation has been received for a specific subscriber).

3.3 Examples

Request Example

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



```
<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?></cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Get>
      <cai3:MOType>IMSICChangeover@http://schemas.ericsson.com/pg/cudb/1.0</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>3489123377</ns:msisdn>
      </cai3:MOId>
    </cai3:Get>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 4 Get IMSI Changeover Request Message

Response Example

This section gives an example of a Get IMSICChangeover 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>d4eb581852184987a4b6b3eae830ed0</cai3g:SessionId>
  </S:Header>
  <S:Body>
    <GetResponse xmlns="http://schemas.ericsson.com/cai3g1.2/">
      <MOAttributes>
        <ns:GetIMSICChangeover xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">
          <ns:IMSICChangeoverData>
            <ns:msisdn>8613400031076</ns:msisdn>
            <ns:imsi>460080100031076</ns:imsi>
            <ns:nimsi>460080100031077</ns:nimsi>
            <ns:state>EXEC</ns:state>
            <ns:date>150907</ns:date>
            <ns:auth>AVAILABLE</ns:auth>
            <ns:IMPIData>
              <ns:impi>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</ns:impi>
              <ns:nimpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ns:nimpi>
            </ns:IMPIData>
            <ns:IMPUData>
              <ns:impu>sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org</ns:impu>
              <ns:nimpu>sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ns:nimpu>
            </ns:IMPUData>
          </ns:IMSICChangeoverData>
        </ns:GetIMSICChangeover>
      </MOAttributes>
    </GetResponse>
  </S:Body>
</S:Envelope>
```

Example 5 Get IMSI Changeover Response Message

The changeover data for the mobile subscriber with MSISDN 3489123377 is printed.

4 Set IMSI Changeover

This section covers the `SetIMSIChangeover` command.

`SetIMSIChangeover` changes the IMSI Changeover expiry date either by defining a new one, or by ordering an immediate execution for the new IMSI (parameter `date` omitted or set to today). The command is accepted only for a pending Changeover.

MOType

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

4.1 Request Data

4.1.1 Parameters

MOId

Either `msisdn` or `nimsi` must be specified in the request. When both `msisdn` and `nimsi` are specified, only `msisdn` is used in the processing of the request; `nimsi` is not validated to verify its reference to the specified `msisdn`.

Table 8 Set IMSI Changeover MOId

Parameter	Type	Occurrence	Description
<code>msisdn</code>	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN
<code>nimsi</code>	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	New IMSI

(1) Either the `nimsi` parameter or the `msisdn` parameter must be used

MOAttributes

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

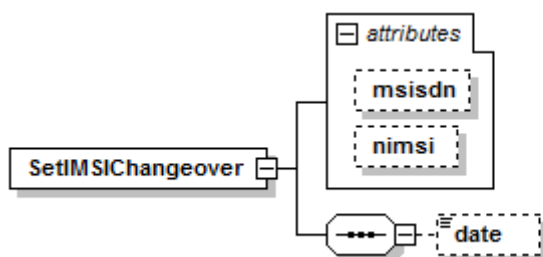


Figure 3 Parameters in Set IMSI Changeover



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

Table 9 Set IMSI Changeover Parameters

Parameter	Type	Occurrence	Description
date	Digit string 6 digits. The date is arranged as YYMMDD.	Optional	Activation date for the new IMSI. The date is not to be earlier than today and not later than a year from today's date.
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN
nimsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	New IMSI.

(1) Either the *nimsi* parameter or the *msisdn* parameter must be used

4.2 Examples

Request Example

This section gives an example of a SetIMSIChangeover 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?></cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Set>
      <cai3:MOType>IMSIChangeover@http://schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>3417429013</ns:msisdn>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:SetIMSIChangeover msisdn="3417429013">
          <ns:date>020801</ns:date>
        </ns:SetIMSIChangeover>
      </cai3:MOAttributes>
    </cai3:Set>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 6 Set IMSI Changeover Request Message

A change to the expiry date, 1 August 2002, is entered for the mobile subscriber whose MSISDN is 3417429013.

Response Example

This section gives an example of a SetIMSIChangeover 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?></cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:SetResponse xmlns:ns2="http://schemas.ericsson.com/cai3g1.2/" />
  </S:Body>
</S:Envelope>
```

Example 7 Set IMSI Changeover Response Message





5 Delete IMSI Changeover

This section covers the `DeleteIMSIChangeover` command.

`DeleteIMSIChangeover` can be used when a delayed IMSI changeover has been ordered but date has not yet passed (IMSI changeover has not been executed). The result is that the old IMSI is kept for the subscriber. The new IMSI is released to be used again or deleted.

This command is fault tolerant in the sense that it is always possible to be executed even if a previous `Delete IMSI Changeover` has failed.

MOType

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

5.1 Request Data

5.1.1 Parameters

MOId

Either `msisdn` or `nimsi` must be specified in the request. When both `msisdn` and `nimsi` are specified, only `msisdn` is used in the processing of the request; `nimsi` is not validated to verify its reference to the specified `msisdn`.

Table 10 Delete IMSI Changeover MOId

Parameter	Type	Occurrence	Description
<code>msisdn</code>	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN
<code>nimsi</code>	Digit string 6-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	New IMSI

(1) Either the `nimsi` parameter or the `msisdn` parameter must be used

MOAttributes

N/A

5.2 Examples

Request Example

This section gives an example of a `DeleteIMSIChangeover` 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?></cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Delete>
      <cai3:MOType>IMSIChangeover@http://schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>3417429013</ns:msisdn>
      </cai3:MOId>
    </cai3:Delete>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 8 Delete IMSI Changeover Request Message

The data related to the new IMSI for the mobile subscriber with MSISDN 3417429013 is deleted.

Response Example

This section gives an example of a DeleteIMSIChangeover 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?></cai3g:SessionId>
  </S:Header>
  <S:Body>
    <ns2:DeleteResponse />
  </S:Body>
</S:Envelope>
```

Example 9 Delete IMSI Changeover Response Message



6 Create IMSI Changeover Removal

This section covers the `CreateIMSIChangeoverRemoval` command.

`CreateIMSIChangeoverRemoval` initiates a removal of all references to the old IMSI, if the new IMSI has been taken into operation for all involved services.

This command is fault tolerant in the sense that it is always possible to be executed even if a previous `Create IMSI Changeover Removal` has failed.

MOType

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

6.1 Request Data

6.1.1 Parameters

MOId

Table 11 Create IMSI Changeover Removal MOId

Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	Old IMSI
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN

(1) Either the `imsi` parameter or the `msisdn` parameter must be used

MOAttributes

The parameters that are used in the operation are shown in Figure 4.

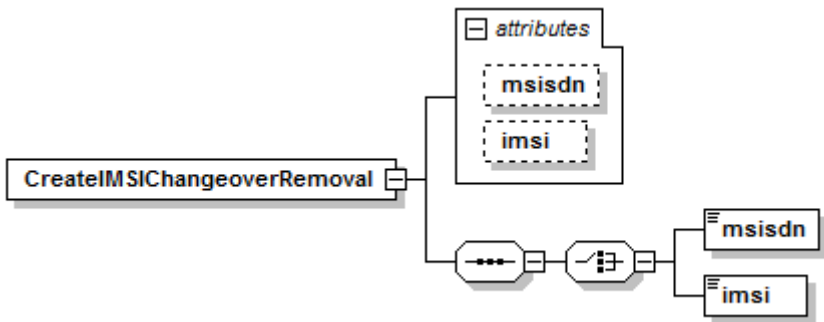


Figure 4 Parameters in Create IMSI Changeover Removal



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

Table 12 *Create IMSI Changeover Removal Parameters*

Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	Old IMSI
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	MSISDN

(1) Either the *imsi* parameter or the *msisdn* parameter must be used.

6.2 Examples

Request Example

This section gives an example of a `CreateIMSIChangeoverRemoval` 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?></cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Create>
      <cai3:MOType>
        IMSIChangeoverRemoval@http://schemas.ericsson.com/pg/cudb/1.0/
      </cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>3417429013</ns:msisdn>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:CreateIMSIChangeoverRemoval
          msisdn="3417429013">
          <ns:msisdn>3417429013</ns:msisdn>
        </ns:CreateIMSIChangeoverRemoval>
      </cai3:MOAttributes>
    </cai3:Create>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 10 *Create IMSI Changeover Removal Request Message*

All references to the old IMSI for the mobile subscriber whose MSISDN is 3417429013 are deleted.

Response Example

This section gives an example of a `CreateIMSIChangeoverRemoval` response message, as shown in Example 11.



```
<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:CreateResponse xmlns:ns2="http://schemas.ericsson.com/cai3g1.2/">
      <ns2:MOId>
        <ns:msisdn xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/">3417429013</ns:msisdn>
      </ns2:MOId>
    </ns2:CreateResponse>
  </S:Body>
</S:Envelope>
```

Example 11 *Create IMSI Changeover Removal Response Message*





7 Create MSISDN Changeover

This section covers the MSISDN Changeover command `CreateMSISDNChangeover`.

`CreateMSISDNChangeover` initiates a MSISDN Changeover procedure. It changes the MSISDN value to a new one.

This command is fault tolerant in the sense that it is always possible to be executed even if a previous `Create MSISDN Changeover` has failed.

Note: MSISDN changeover has no rollback and the exact same command that failed must be resent.

MOType

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

7.1 Request Data

7.1.1 Parameters

MOId

Table 13 Create MSISDN Changeover

Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	Old IMSI
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	Old MSISDN

(1) Either the `imsi` parameter or the `msisdn` parameter must be used.

MOAttributes

The parameters that are used in the operation are shown in Page 24.

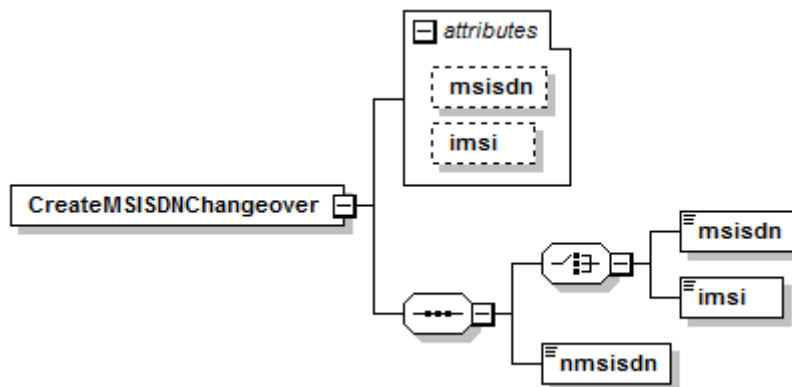


Figure 5 Parameters in Create MSISDN Changeover

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

Table 14 Create MSISDN Changeover

Parameter	Type	Occurrence	Description
imsi	Digit string 6-15 digits Each digit is 0-9.	Mandatory ⁽¹⁾	Old IMSI
msisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory ⁽¹⁾	Old MSISDN
nmsisdn	Digit string 5-15 digits Each digit is 0-9	Mandatory	New MSISDN

(1) Either the `imsi` parameter or the `msisdn` parameter must be used.

7.2 Examples

Request Example

This section gives an example of a `CreateMSISDNChangeover` 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?</cai3:SessionId>
  </soapenv:Header>
  <soapenv:Body>
    <cai3:Create>
      <cai3:MOType>MSISDNChangeover@http://schemas.ericsson.com/pg/cudb/1.0/</cai3:MOType>
      <cai3:MOId>
        <ns:msisdn>12345678</ns:msisdn>
      </cai3:MOId>
      <cai3:MOAttributes>
        <ns:CreateMSISDNChangeover msisdn="12345678">
          <ns:msisdn>12345678</ns:msisdn>
          <ns:nmsisdn>87654321</ns:nmsisdn>
        </ns:CreateMSISDNChangeover>
      </cai3:MOAttributes>
    </cai3:Create>
  </soapenv:Body>
</soapenv:Envelope>
```

Example 12 Create MSISDN Changeover Request Message

A change to a new MSISDN 87654321 is initiated for the mobile subscriber with MSISDN 12345678.

Response Example

This section gives an example of a CreateMSISDNChangeover response message, as shown in Page 25.

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:cai3g="http://schemas.ericsson.com/cai3g1.2/">
  <S:Header>
    <cai3g:SessionId>b6f31fd19c954073a6f005fa5b2989b2</cai3g:SessionId>
  </S:Header>
  <S:Body>
    <CreateResponse xmlns="http://schemas.ericsson.com/cai3g1.2/">
      <MOId>
        <ns:msisdn xmlns:cai3="http://schemas.ericsson.com/cai3g1.2/"
          xmlns:ns="http://schemas.ericsson.com/pg/cudb/1.0/"
          xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">691900052100</ns:msisdn>
      </MOId>
    </CreateResponse>
  </S:Body>
</S:Envelope>
```

Example 13 Create MSISDN Changeover Response Message





8 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 IMSI Changeover 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 [7].

8.1 Subordinate IMSI Changeover Error Codes

The following table covers the subordinate error codes for IMSI Changeover commands over the CAI3G interface.

Table 15 IMSI Changeover Error Codes

Error Code	Error Message	MO	Operation
10001	IMSI ALREADY DEFINED	IMSI Changeover	C
10006	SUBSCRIBER AUTHENTICATION DATA NOT FOUND	IMSI Changeover	C
10013	IMSI NOT DEFINED	IMSI Changeover	C/S/G/D
		IMSI Changeover Removal	C
10014	MSISDN NOT DEFINED	IMSI Changeover	C/S/G/D
		IMSI Changeover Removal	C
10042	DATE NOT ACCEPTABLE	IMSI Changeover	C/S
10046	NO PENDING CHANGEOVER	IMSI Changeover	S/D
10052	IMSI TYPE INCORRECT	IMSI Changeover	C/S/D
		IMSI Changeover Removal	C
10053	MSISDN TYPE INCORRECT	IMSI Changeover	C/S/D
		IMSI Changeover Removal	C
10063	CHANGEOVER ALREADY INITIATED	IMSI Changeover	C
10064	CHANGEOVER NOT INITIATED	IMSI Changeover	S/D
		IMSI Changeover Removal	C
10065	CHANGEOVER ALREADY EXECUTED	IMSI Changeover	S/D



Error Code	Error Message	MO	Operation
10066	CHANGEOVER STILL PENDING	IMSI Changeover Removal	C
10070	STORAGE SHORTAGE IN CHANGEOVER DATA FILE	IMSI Changeover	C
10534	CENTRALIZED USER DATABASE NOT REACHABLE	IMSI Changeover	C/S/D
		IMSI Changeover Removal	C
10535	RESOURCE LIMITATION	IMSI Changeover	C/S/D
		IMSI Changeover Removal	C
10804	CHANGEOVER NOT ALLOWED	IMSI Changeover	C
12002	SUBSCRIBER NOT DEFINED	Subscriber	D
12003	IDENTIFIER IN USE	Identifier	D
		Subscriber	D
12004	IDENTIFIER ALREADY EXIST	Identifier	C
12006	DATABASE LOCKED FOR BACKUP	IMSI Changeover	C/D
		IMSI Changeover Removal	C

8.2 Subordinate MSISDN Changeover Error Codes

The following table covers the subordinate error codes for MSISDN Changeover commands over the CAI3G interface.

Table 16 MSISDN Changeover Error Codes

Error Code	Error Message	MO	Operation
10002	MSISDN ALREADY DEFINED	MSISDN Changeover	C
10014	MSISDN NOT DEFINED	MSISDN Changeover	C
10053	MSISDN TYPE INCORRECT	MSISDN Changeover	C
10804	CHANGEOVER NOT ALLOWED	MSISDN Changeover	C

8.3 CAI3G Error Message Example

The following, shown in Example 14, 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>9e485c53cfdc4de8a61e3b1dddfcad6f4</cai3g:SessionId>
    <cai3g:TransactionId>1</cai3g:TransactionId>
    <cai3g:SequenceId>1</cai3g:SequenceId>
  </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>10006</errorcode>
              <errormessage>SUBSCRIBER AUTHENTICATION DATA NOT FOUND
</errormessage>
              <errordetails>The IMSI is unknown in Authentication Centre -
[Processed by PG Node: CL23-PL-10]</errordetails>
            </PGFault:PGFault>
          </details>
        </Cai3gFault:Cai3gFault>
      </detail>
    </ns2:Fault>
  </S:Body>
</S:Envelope>

```

Example 14 CAI3G Error Message





Reference List

Ericsson Documents

- [1] *Library Overview*, 18/1553-CSH 109 628 Uen
- [2] *Generic CAI3G Interface 1.2 Specification*, 2/155 19-FAY 302 00 03 Uen
- [3] *User Guide for Resource Activation*, 1/1553-CSH 109 628 Uen
- [4] *Function Specification Identity Changeover for Layered Applications*, 14/155 17-CSH 109 628 Uen
- [5] *CAI3G Interface Specification for HLR Components*, 25/155 19-CSH 109 628 Uen
- [6] *Layered IMS Provisioning over CAI3G*, 13/155 19-CSH 109 628 Uen
- [7] *CAI3G Implementation*, 26/155 19-CSH 109 628 Uen