

Provisioning over CAI3G for Resource Configuration

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.

1.1 Purpose and Scope

This document describes the supported operations in the CAI3G interface, for Resource Configuration. This document also declares the types and occurrences of the attributes used in the operations.

The document is applicable for CAI3G interface that is generated based on the feature models in Resource Configuration. For more information on the CAI3G interface related to service models, refer to [User Guide for Designer Studio, Reference \[2\]](#).

This document is not a tutorial of CAI3G; it must be used together with [Generic CAI3G Interface 1.2, Reference \[3\]](#).

1.2 Target Group

The target group for this document is as follows:

- System Integrator

For more information about the different target groups, see [Library Overview, Reference \[4\]](#).

1.3 Typographic Conventions

Typographic conventions are described in [Library Overview, Reference \[4\]](#).

In addition, this document uses the following notations to indicate the occurrence of attributes in different operations:

M	Mandatory
O	Optional
N/A	Not Applicable

1.4 Prerequisites

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



- Basic knowledge about the Ericsson™ Dynamic Activation (EDA) product
- Knowledge about Generic CAI3G Interface 1.2, Reference [3]



2 General Information

This section describes general information of the CAI3G interface specification for Resource Configuration.

2.1 Namespaces

This document refers to the following namespaces:

- CAI3G 1.2 Namespace:

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

- Provisioning Namespace:

`http://schemas.ericsson.com/scm/`

2.2 Web Service Interface

Resource Configuration provides XML Schema Definition Language (XSD) data model files to use as a base when create CAI3G interface and WSDL files.

The interface.zip file containing the data model files can be found in `/home/dveinstaller/ma/`. It is also possible to download the zip file and store it 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.
3. Go to `\EDAinterfaces\web-service_provisioning_cai3g1.2\schemas\Applications\SCM`.

Follow the procedure below to create a web service interface:

1. Import the data model and as described in User Guide for Resource Configuration, Reference [5].

Note: If importing the feature models from the interface.zip file, the file `types.xsd` must be imported first. This is to make sure the common data types are available when importing the feature models. For more information about the common data types available, see Section 2.7 on page 5.

2. Create a web service interface as described in User Guide for Resource Configuration, Reference [5].



For information about what MOIDs and attributes to use for each web service, see the following sections in this document.

2.3 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.

2.4 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>
    <deviceId>testDevice1</deviceId>
    <asNumber>20</asNumber>
    <groupName>external-peers</ groupName>
</MOId>
```

Example 1 Example of MOId

```
<MOId>
    <serviceInstanceId>{http://schemas.ericsson.com/ma/CA/L3VPN/}L3VPN##serviceId=1234</se
    <deviceId>testDevice1</deviceId>
    <asNumber>20</asNumber>
    <groupName>external-peers</groupName>
</MOId>
```

Example 2 Example of MOId including optional serviceInstanceId

The MOId is defined as a sequence of `xs:any` element in CAI3G schema file.

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

2.5 Sub-objects

Resource Configuration has support for sub-objects in the following ways:

- To create a sub-object in a CREATE or SET operation, a key-attribute and a matching element must be present in the sub-object.



- To update a sub-object in a SET operation, a key-attribute but no matching element must be present in the sub-object.
- To delete a sub-object in a SET operation, a key-attribute and the attribute `xsi:nil="true"` must be present in the sub-object.

For more information about sub-objects, refer to [Generic CAI3G Interface 1.2, Reference \[3\]](#).

2.6 MOAttributes in Create Response

Resource Configuration implements MOAttributes in the Create Response.

All used MOAttributes in the Create Request are to be returned in the Create Response together with the Template Execution Response, where:

- Unique MOAttributes are merged to the Create Response.
- In case of overlapping MOAttributes, the ones in Template Execution Response are used.

For more information on Template Execution Response, refer to [Customer Adaptation Guide for Resource Configuration](#).

2.7 Extensions

Resource Configuration support CAI3G extensions that is described in the **Extension** section, [Generic CAI3G Interface 1.2](#).

The extensions are to be parsed only during execution and will not be persisted.

Information from CAI3G extensions will not be available during any internal configuration management operations.





3 Faults and Errors

The generic structure for fault responses is covered in [Generic CAI3G Interface 1.2, Reference \[3\]](#). 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 Resource Configuration specific error codes are described in this section. These error codes are included in the Fault type `PGFau1t`.

For generic error codes, and information about the different Fault types, see [CAI3G Implementation, Reference \[6\]](#).

3.1 Subordinate Resource Configuration Error Codes

The following table covers subordinate error codes for Resource Configuration commands over the CAI3G interface.

Table 1 Subordinate Resource Configuration Error Codes

Error Code	Error Message	Error Details	Operation
45001	Failed to connect to the device.	Failed to connect to device <device IP>: <device Port>.	All
45002	Failure during communication with the device.	Dynamic message, describing the communication error.	All
45003	Failed to find model.	Model <feature model name> does not exist.	All
45004	Failed to obtain template.	Dynamic message, describing the failure.	All
45005	Failure during execution of the template.	Dynamic message, describing the failure.	All
45006	Failure during validation of the request towards the model.	Dynamic message, describing the validation error.	All
45007	Failure when closing the connection to the device.	Dynamic message, describing the failure.	All
45008	Failed to find device.	Device <device identifier> not found in the device inventory.	All
45009	Operation failed, operation not allowed.	Dynamic message, describing the failure.	C/S/D
45010	Wrong device configuration.	Dynamic message, describing the failure.	All
45011	Failed to delete feature	Dynamic message, describing the failure.	D



Error Code	Error Message	Error Details	Operation
45012	Failed to delete feature	Dynamic message, describing the failure.	D
45013	Operation failed, rollback has been performed successfully.	Dynamic message, describing the failure.	C/S/D
45014	Operation failed, rollback was unsuccessful.	Dynamic message, describing the failure.	C/S/D

3.2 CAI3G Error Message Example

The following, shown in Example 3, 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>fc631b11d5374e059e6d494c3932dc8c</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>45001</errorcode>
              <errormessage>Failed to connect to the device</errormessage>
              <errordetails>Failed to connect to device [device]:
[2123] - [Processed by PG Node: devenv15]</errordetails>
            </PGFault:PGFault>
          </details>
        </Cai3gFault:Cai3gFault>
      </detail>
    </ns2:Fault>
  </S:Body>
</S:Envelope>
```

Example 3 CAI3G Error Message



Reference List

Ericsson Documents

- [1] Glossary of Terms and Acronyms, 0033-CSH 109 628 Uen
- [2] User Guide for Designer Studio, 10/1553-CSH 109 628
- [3] Generic CAI3G Interface 1.2 Specification, 2/155 19-FAY 302 0003 Uen
- [4] Library Overview, 18/1553-CSH 109 628 Uen
- [5] User Guide for Resource Configuration, 11/1553-CSH 109 628 Uen
- [6] CAI3G Implementation, 26/155 19-CSH 109 628 Uen
- [7] Customer Adaptation Guide for Resource Configuration, 14/1553-CSH 109 628 Uen