

CUDB Subscription Repair and Remove Procedures

Ericsson Dynamic Activation 1

USER GUIDE

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1 Introduction

This section 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 is intended to be used to identify and repair or remove provisioning orders that have been partly or entirely executed.

The Ericsson™ Dynamic Activation (EDA) User Data Consolidation (UDC) Activation and Provisioning interfaces are designed to handle temporary faults. For example, communication problems or busy responses from network elements.

Not all problems are temporary though, and perhaps cannot be solved 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 provides instructions on how to:

- Identify the problem.
- Remove the problem from a high-level perspective.

1.2 Target Groups

The target groups for this document are as follows:

- Network Administrator
- System Administrator

1.3 Typographic Conventions

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

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

C	Create
S	Set
G	Get
D	Delete





2 General

This section contains general information on how to repair corrupt subscriber data.

When a Customer Service Order (CSO) fails with error description `Partly executed`, the Centralized User Database (CUDB) has inconsistent data that needs to be repaired instantly. An event is sent to OSS to highlight that action needs to be taken.

For most applications, a general procedure is applied except for the following ones:

- EIR, see Section 4 on page 7.
- AAA, see Section 5 on page 9.

The general procedure is as follows:

1. Resend the failed operation. Most business logic is fault tolerant and can resume and repair the subscriber data. For details about when to resend the command, refer to section `Fault Tolerance` in *Function Specification Resource Activation*, Reference [2].

Continue to Step 2 if subscriber data is still corrupt.

2. Delete the application data. For example, use `DeleteEPSMultiSC` if EPS data is corrupt. For details about when to send the `Delete` command, refer to section `Fault Tolerance` in *Function Specification Resource Activation*, Reference [2].

Continue to Step 3 if subscriber data is still corrupt.

3. Use the subscriber `Delete` command described in Section 6.4 on page 31 to delete the complete subscriber data in CUDB.

Review the event description to find out what CSO that failed and what identifiers that are involved. Furthermore, review the partly succeeded log to find out which internal request that failed.

For details on the CSO-related events, refer to *Event and Alarm Handling*, Reference [4].





3 Log File

The log file `/var/log/dve/request/partiallysucceededoperations.log` is the key to identifying CUDB inconsistencies. This section explains the contents of that log file.

Every record starts with a time stamp describing when the fault occurred, and the name of the operation in which it occurred. The log record consists of two parts; the Client Request Data and the Internal Interaction. The Client Request Data part contains the received CAI3G or Command-Line Interface (CLI) request. The Internal Interaction part contains all outgoing commands.

Find the step where the error occurred in the log file. The error is indicated with NOK.

It is important to identify the operation and also the needed identifiers, for example MSISDN, IMSI, `assocId`, `mscId`. To be able to use the same identifiers when repairing the inconsistency.

Depending on the operation, different actions are necessary to repair the data inconsistency in the CUDB. It is also important to know in which step the error occurred.

Note: The time-stamp for a record in `partiallysucceededoperations.log` can differ from the time-stamp for the same record in the processing logs. The record is registered in the processing log when it is sent to Dynamic Activation. If an error occurs during processing, the time-stamp of the record is registered in `partiallysucceededoperations.log`.





4 EIR Repair Actions

This section specifies the repair actions that can be used to repair inconsistency in CUDB regarding content in the `IMEIlogdata` object.

The following commands, which are documented in CUDB Subscription Repair and Remove Procedures, can cause incomplete information in CUDB.

- The `Create/Set/Delete` commands related to Equipment.
- The `Create/Delete` commands related to Equipments

The incomplete information regards to writing of log data for nomination procedures.

4.1 EIR

Unsuccessful operations can cause incomplete data in the CUDB and requires to be manually corrected through direct LDAP requests towards CUDB.

It is possible to use the outstanding LDAP commands to update the CUDB manually with missing records, towards the `IMEIlogdata` objects. Such LDAP commands are stored in the `eir_partiallysucceededoperations.log` file in Dynamic Activation.

4.1.1 Log File

The log file `/var/log/dve/request/partiallysucceededoperations.log` is the key to identifying incomplete data in CUDB. This section explains the contents of that log file.

Every record starts with a time stamp describing when the fault occurred, and the name of the operation in which it occurred. The log record consists of two parts; the Client Request Data and the Internal Interaction. The Client Request Data part contains the received CAI3G request and the Internal Interaction part contains all outgoing commands.

The following is an example of a record from the log file:



```

"
.
.
.
== Client Request Data ==
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<eir:CreateEquipment xmlns:eir="http://schemas.ericsson.com/ma/EIR/"
imei="33330000785002" svn="08">
  <eir:imei>33330000785002</eir:imei>
  <eir:svn>08</eir:svn>
  <eir:date>2011-02-12</eir:date>
  <eir:time>11:40:00</eir:time>
  <eir:comment>Set comment</eir:comment>
  <eir:InsertEquipmentListType>
    <eir:equipmentListNumber>3</eir:equipmentListNumber>
    <eir:insertReason>23</eir:insertReason>
  </eir:InsertEquipmentListType>
  <eir:clarifyReason>Set reason</eir:clarifyReason>
  <eir:sourceOfRequest>Set source</eir:sourceOfRequest>
</eir:CreateEquipment>
== Internal Interactions ==
.
.
.
[4] LDAP CUDB NOK LDAP Add (dn: seqno=20110221115657.642Z,ou=IMEIlog,
serv=equipmentcheck,ou=servCommonData,dc=operator,dc=com Attributes:
Attribute name: objectClass, values: [top, EI3], operation: ADD)
<--
Error: Add operation failed.
Cause[1]: [LDAP: error code 68 - Entry Already Exists]
--#
[5] LDAP CUDB NOK LDAP Add (dn: ei=imeiLogData,seqno=20110221115657.642Z,
ou=IMEIlog,serv=equipmentcheck,ou=servCommonData,dc=operator,dc=com Attributes:
Attribute name: seqno, values: [20110221115657.642Z], operation: ADD, Attribute
name: imeiFrom, values: [33330000785002], operation: ADD, Attribute name: imeiTo,
values: [33330000785002], operation: ADD, Attribute name: svn, values: [08], operation:
ADD, Attribute name: comment, values: [Set comment], operation: ADD
, Attribute name: reason, values: [23], operation: ADD, Attribute name: clarifyReason,
values: [Set reason], operation: ADD, Attribute name: sourceOfRequest, values:
[Set source], operation: ADD, Attribute name: action, values: [I], opera
tion: ADD, Attribute name: objectClass, values: [CUDBExtensibleObject, EI7, top],
operation: ADD)
<--
Error: Add operation failed.
Cause[1]: [LDAP: error code 68 - Entry Already Exists]
--#
"

```

Example 1 Log File Record

Find the step where the error occurred in the log file. In Example 1, the errors occurred in step 4 and step 5 and are indicated with NOK.

The LDAP operations that are marked NOK can be extracted and manually resent to the CUDB. To get a complete log history of IMEIs, this must be performed before the EIR synchronizes the IMEIlogdata objects with the centralized IMEI database.



5 IPWorks/AAA Repair Actions

This section specifies the repair actions that can be used to repair inconsistency in CUDB regarding content of Authentication, Authorization, and Accounting (AAA) data. The *Create/Set/Delete* commands are documented in *Layered IPWorks/AAA Provisioning over CA/3G*, Reference [6]. Unsuccessful operations can cause incomplete data in the CUDB and requires to be manually corrected through direct LDAP requests towards CUDB. It is possible to use the outstanding LDAP commands, stored in the `partiallysucceededoperations.log` file in PG, to update the CUDB manually with missing records.

5.1 IPWorks/AAA

This section covers the commands in IPWorks/AAA that can result in partly executed state and the recover steps.

5.1.1 Create AAA User

The following figure shows the provisioning flow for *Create AAA User Data* command:

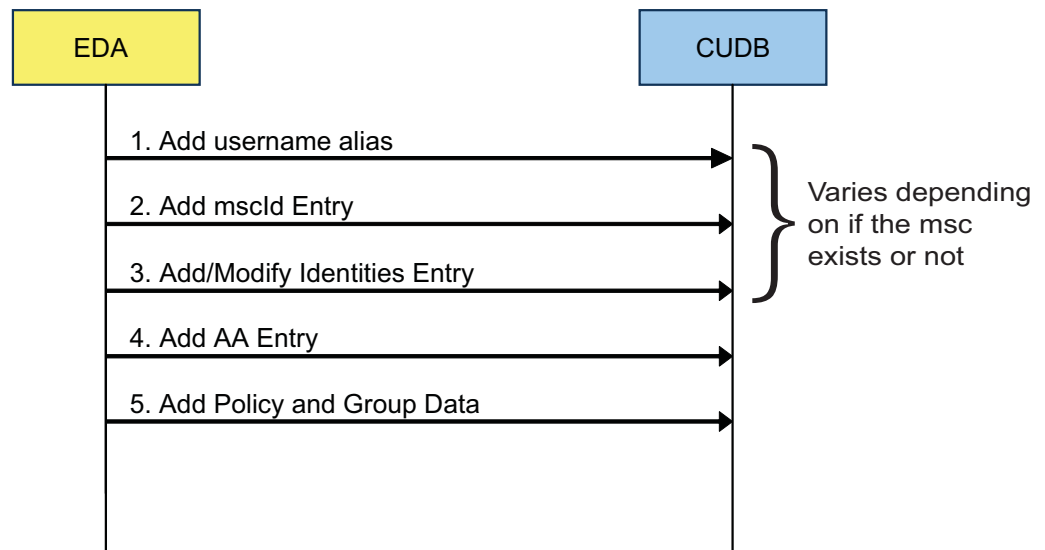


Figure 1 Provisioning Flow, Create IPWorks/AAA User

The following table describes the appropriate actions corresponding to the failed provisioning steps:

**Table 1** Repair Actions, Create AAA User

Failed Steps	Repair Action	Commands
2	Remove username alias.	Delete Identifier ⁽¹⁾
	Resend the Create AAA User command.	Create AAAUser ⁽²⁾
3, 4	Remove username alias entry.	Delete Identifier ⁽¹⁾
	Remove the previously created mscId entry.	Delete MultiService Consumer ⁽¹⁾
	Resend the Create AAA User command.	Create AAAUser ⁽²⁾
5	Delete the User.	Delete AAAUser ⁽²⁾
	Resend the Create AAA User command.	Create AAAUser ⁽²⁾

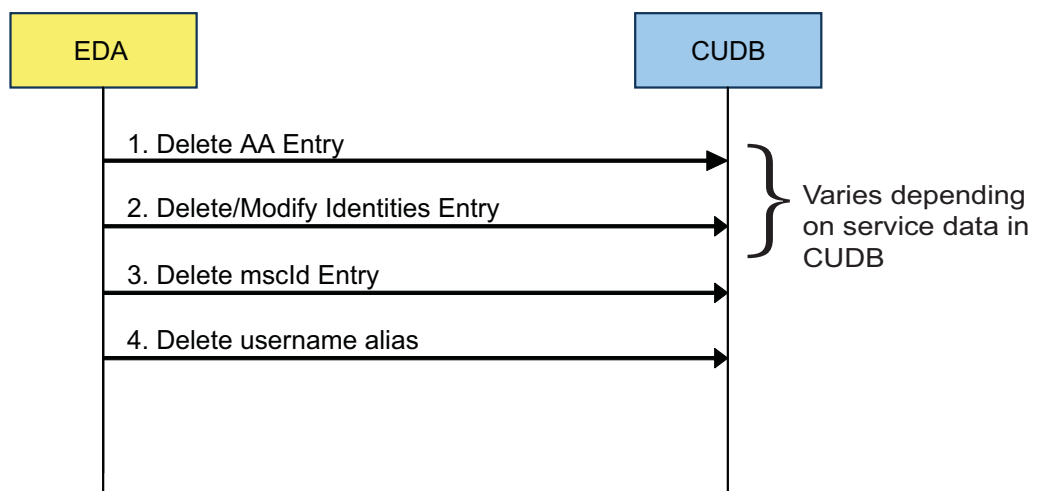
(1) This command is used according to the *Layered HLR AUC Subscription Repair and Remove Actions over CAI3G*, Reference [3].

(2) This command is used according to the *Layered IPWorks Provisioning over CAI3G*, Reference [6].

5.1.2

Delete AAA User

The following figure shows the provisioning flow for Delete AAA User Data command:

**Figure 2** Provisioning Flow, Delete IPWorks/AAA User



The following table describes the appropriate actions corresponding to the failed provisioning steps:

Table 2 Repair Actions, Delete AAA User

Failed Steps	Repair Action	Commands
1, 2	Resend the Delete AAA User command.	Delete AAAUser ⁽¹⁾
3	Remove the previously created mscId entry.	Delete MultiService Consumer ⁽²⁾
	Remove the Identifier entry.	Delete Identifier ⁽²⁾
4	Remove the Identifier entry.	Delete Identifier ⁽²⁾

(1) This command is used according to the *Layered IPWorks/AAA Provisioning over CAI3G*, Reference [6].

(2) This command is used according to the *Layered HLR AUC Subscription Repair and Remove Actions over CAI3G*, Reference [3].

5.1.3

Set AAA User

The following figure shows the provisioning flow for Set AAA User Data command:

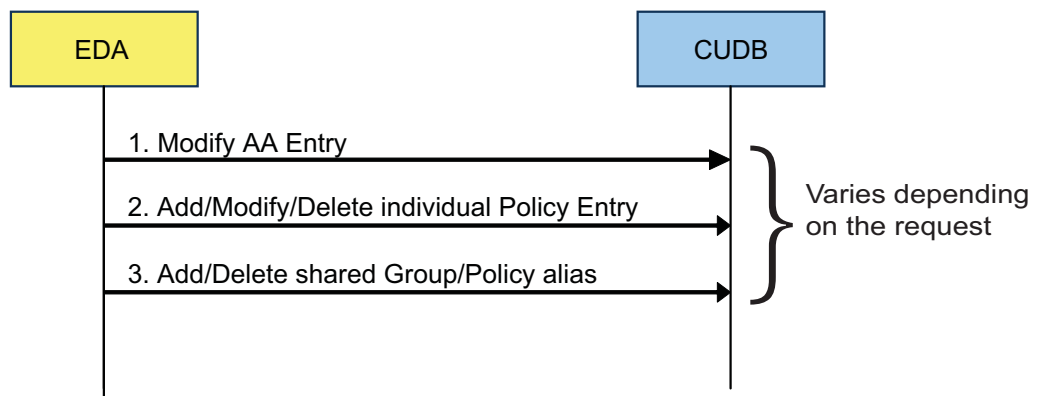


Figure 3 Provisioning Flow, Set IPWorks/AAA User

The following table describes the appropriate actions corresponding to the failed provisioning steps:



Table 3 Repair Actions, Set AAA User

Failed Steps	Repair Action	Commands
2	Send Set AAA User command to delete/add shared group/policy attributes in AA Entry, created in previous request.	Set AAAUser ⁽¹⁾
	Resend Set AAA User command.	Set AAAUser ⁽¹⁾
3	Send Set AAA User command to delete/add shared group, policy attributes in AA Entry and delete/add/modify individual policy Entry, created in previous request if partly succeeded.	Set AAAUser ⁽¹⁾
	Resend Set AAA User command.	Set AAAUser ⁽¹⁾

(1) This command is used according to the *Layered IPWorks/AAA Provisioning over CAI3G*, Reference [6].

5.1.4 Create AAA Shared Group

The following figure shows the provisioning flow for Create AAA Shared Group command:

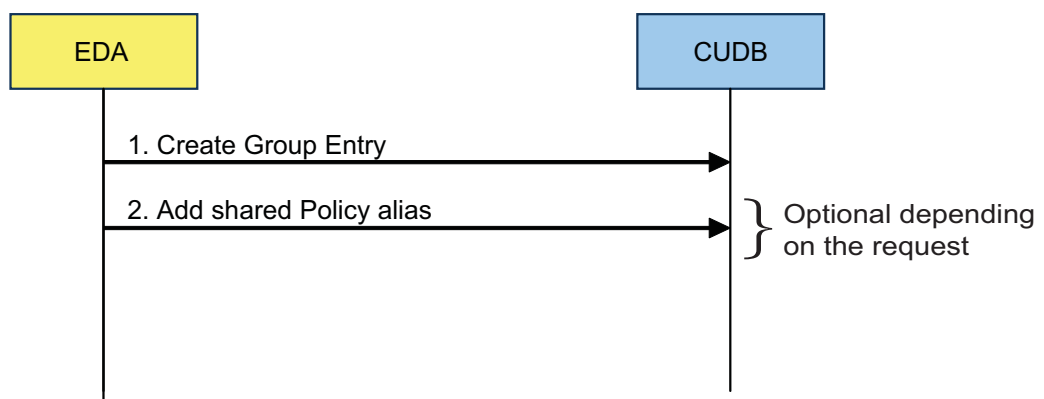


Figure 4 Provisioning Flow, Create IPWorks/AAA Shared Group

The following table describes the appropriate actions corresponding to the failed provisioning steps:



Table 4 Repair Actions, Create AAA Shared Group

Failed Steps	Repair Action	Commands
2	Delete the Group Entry	Delete AAAGroup ⁽¹⁾
	Resend Create Group command.	Create AAAGroup ⁽¹⁾

(1) This command is used according to the Layered IPWorks/AAA Provisioning over CAI3G, Reference [6].

5.2 Log File

The logs file `/var/log/dve/request/partiallysucceededoperations.log` is the key to identify incomplete data in CUDB. This section explains the contents of that logs file. Every record starts with a timestamp describing when the fault occurred, and the name of the operation in which it occurred. The log record consists of two parts: the Client Request Data and the Internal Interaction. The Client Request Data part contains the received CAI3G request and the Internal Interaction part contains all outgoing commands.

The following is an example of a record from the log file and repair procedure:



```

[1] LDAP CUDB NOK LDAP Search (dn: serv=Identities,
USERNAME=1234567,dc=username,ou=identities,dc=operator,dc=com
Search Scope: OBJECT Search Filter: (objectClass=*)
Time Limit Milliseconds : 0 Count Limit: 0 Return Object:
False DerefAliases: ALWAYS DerefLink: False)
[2] LDAP CUDB OK LDAP Search
(dn: GroupName=group1,ou=Groups,serv=AA,ou=mscCommonData,dc=operator,dc=com
Search Scope: SUBTREE Search Filter: (objectClass=*) Time Limit Milliseconds : 0
Count Limit: 0 Return Object: False DerefAliases: ALWAYS DerefLink: False)
[3] LDAP CUDB OK LDAP Search
(dn: PolicyName=shpolicy1,ou=Policies,serv=AA,ou=mscCommonData,dc=operator,dc=com
Search Scope: SUBTREE Search Filter: (objectClass=*) Time Limit Milliseconds : 0
Count Limit: 0 Return Object: False DerefAliases: ALWAYS DerefLink: False)
[4] LDAP CUDB OK LDAP Add (dn: USERNAME=1234567,dc=username,ou=identities,
dc=operator,dc=com Attributes: Attribute name: objectClass, values: [top, alias,
USERNAME], operation: ADD, Attribute name: aliasedObjectName,
values: [mscId=d4dd1948529147e8a2729dc030cbaec3,ou=multiSCs,dc=operator,dc=com],
operation: ADD)
[5] LDAP CUDB OK LDAP Add
(dn: mscId=d4dd1948529147e8a2729dc030cbaec3,ou=multiSCs,dc=operator,dc=com
Attributes: Attribute name: objectClass, values: [top, CUDBMultiServiceConsumer],
operation: ADD)
[6] LDAP CUDB OK LDAP Add (dn: serv=Identities,mscId=d4dd1948529147e8a2729dc030cbaec3,
ou=multiSCs,dc=operator,dc=com Attributes: Attribute name: USERNAME, values: [1234567],
operation: ADD, Attribute name: usernameMask, values: ['0000000100000000'B], operation:
ADD, Attribute name: CDC, values: [0], operation: ADD, Attribute name:
objectClass, values: [top, CUDBService, mscIdentities], operation: ADD)
[7] LDAP CUDB OK LDAP Add (dn: serv=AA,mscId=d4dd1948529147e8a2729dc030cbaec3,
ou=multiSCs,dc=operator,dc=com Attributes: Attribute name: UserName, values: [1234567],
operation: ADD, Attribute name: userPassword, values: [69F5B675820C66978C436E61CCACD566],
operation: ADD, Attribute name: AuthMethod, values: [EAP-MD5], operation: ADD,
Attribute name: IPAllocType, values: [0], operation: ADD, Attribute name: IPAllocValue,
values: [localhost], operation: ADD, Attribute name: GroupNameList, values: [group1], operation:
ADD, Attribute name: PolicyNameList, values: [shpolicy1], operation: ADD, Attribute name:
objectClass, values: [top, CUDBServiceAuxiliary, AAPProfile], operation: ADD)
[8] LDAP CUDB OK LDAP Add (dn: PolicyName=inpolicy1,
serv=AA,mscId=d4dd1948529147e8a2729dc030cbaec3,
ou=multiSCs,dc=operator,dc=com Attributes: Attribute name: PolicyName, values:
[inpolicy1], operation: ADD, Attribute name: PolicyChecklist, values:
[System-Time >= "10:00 +0800" && System-Time <= "20:00 +0800" &&
( User-Name = "Ding Zheng" && ( Service-Type = "Framed" || Service-Type = "PPP"))],
operation: ADD, Attribute name: PolicyReplylist, values: [User-Name = $REQUEST,
Login-IP-Host = 10.170.4.169], operation: ADD, Attribute name: objectClass,
values: [top, AAPPolicy], operation: ADD)
[9] LDAP CUDB OK LDAP Add (dn: ei=group1,serv=AA,mscId=d4dd1948529147e8a2729dc030cbaec3,
ou=multiSCs,dc=operator,dc=com Attributes: Attribute name: objectClass,
values: [top, CUDBExtensibleObject, alias], operation: ADD, Attribute name: aliasedObjectName,
values: [GroupName=group1,ou=Groups,serv=AA,ou=mscCommonData,dc=operator,dc=com], operation: ADD)
[10] LDAP CUDB NOK LDAP Add (dn: ei=shpolicy1,serv=AA,mscId=d4dd1948529147e8a2729dc030cbaec3,
ou=multiSCs,dc=operator,dc=com Attributes: Attribute name: objectClass,
values: [top, CUDBExtensibleObject, alias], operation: ADD, Attribute name: aliasedObjectName,
values: [PolicyName=shpolicy1,ou=Policies,serv=AA,ou=mscCommonData,dc=operator,dc=com], operation: ADD)
<--
Error: Add operation failed.
Cause[1]: [LDAP: error code 80 - txn_commit failed]

```

Example 2 Log File Record

Find the step where the error occurred in the log file. In Example 2, the errors occurred in step 10 and are indicated with NOK.

For the example in this section, the CUDB data can be repaired according to the instruction in Section 5.1.1 on page 9.



6 CUDB Repair Actions

Centralized User Database (CUDB) subscription data can be damaged in rare occasion owing to communication problems, busy response, or data conflicting. The corresponding faults must be analyzed manually and Dynamic Activation needs to trigger operations to repair or delete the corrupt data in CUDB.

For this purpose, the following CLI commands are introduced:

- `CUDBSUP` – Prints CUDB subscriber data.
- `CUDBSUE` – Deletes CUDB subscriber data.
- `CUDBARI` – Repairs CUDB Authentication Service data.

The following procedures are recommended to fix the CUDB subscription data:

1. Run the `CUDBSUP` command to print the CUDB subscription data and check if the data need to be repaired or removed.
2. Run the `CUDBARI` command to repair the authentication data from the corrupt CUDB subscription data if CUDB subscription has authentication services, such as AUC or AVG.
3. Run the `CUDBSUE` command to remove the corrupt CUDB subscription data.

For information about how to use these commands, refer to *Generic CLI Interface Specification*, Reference [8].

Note: The supported services are as follows.

- Home Location Register (HLR)
- Authentication Center (AUC)
- Machine to Machine (M2M)
- Authentication Vector Generation (AVG)
- Evolved Packet System (EPS)
- IP Multimedia Subsystem (IMS)
- Service Aware Policy Controller (SAPC)

HLR with Multiple SIM (MSIM) subscription is also supported.



6.1 CUDB Data Overview

The following figures show the data model structures for the commands used in different Network Elements (NEs).

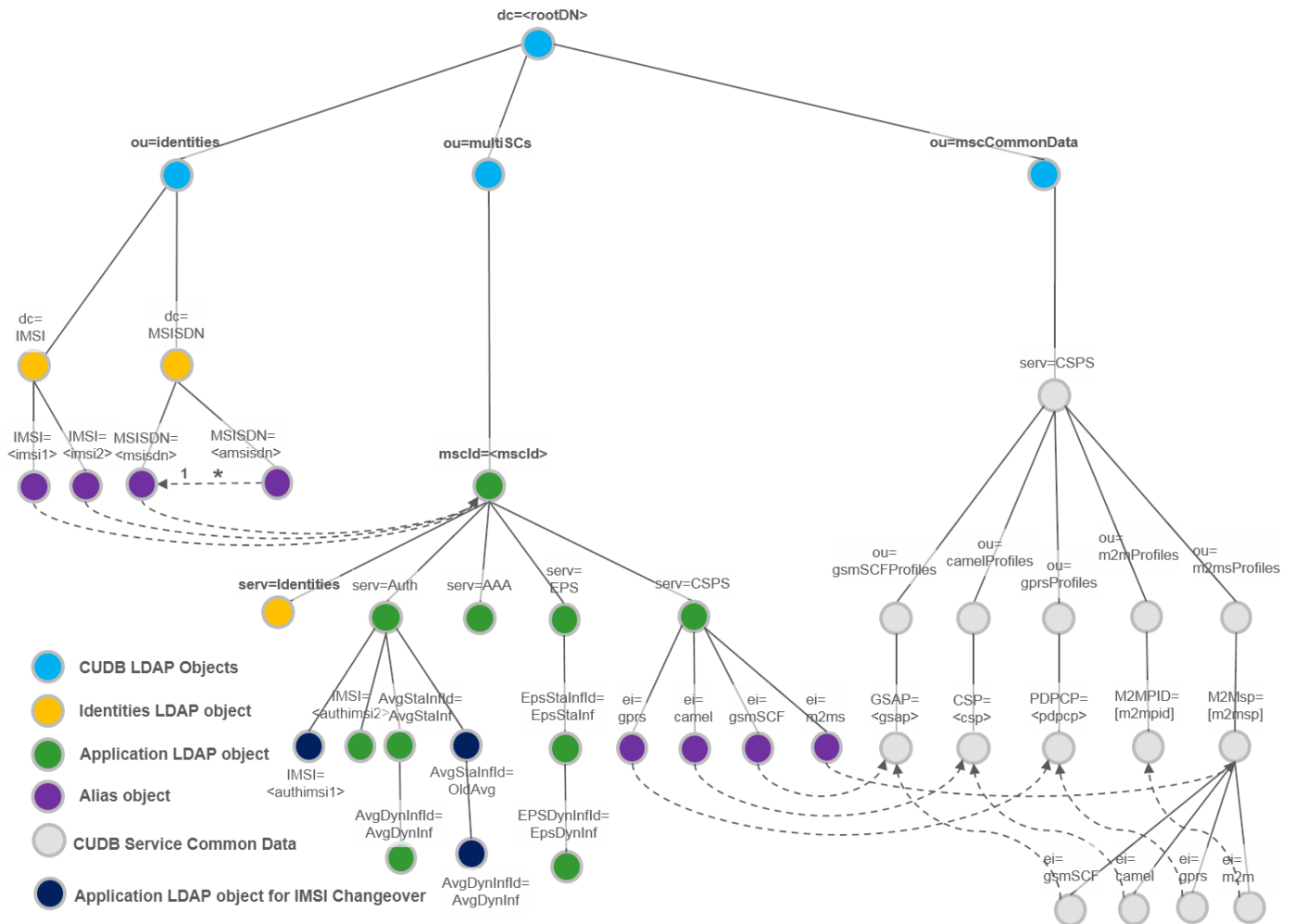


Figure 5 CUDB Data Model for AUC, AVG, EPS, HLR, and M2M

Note: In Figure 5, two AUC and two AVG services can appear in the same MultiServiceConsumer during IMSI changeover.

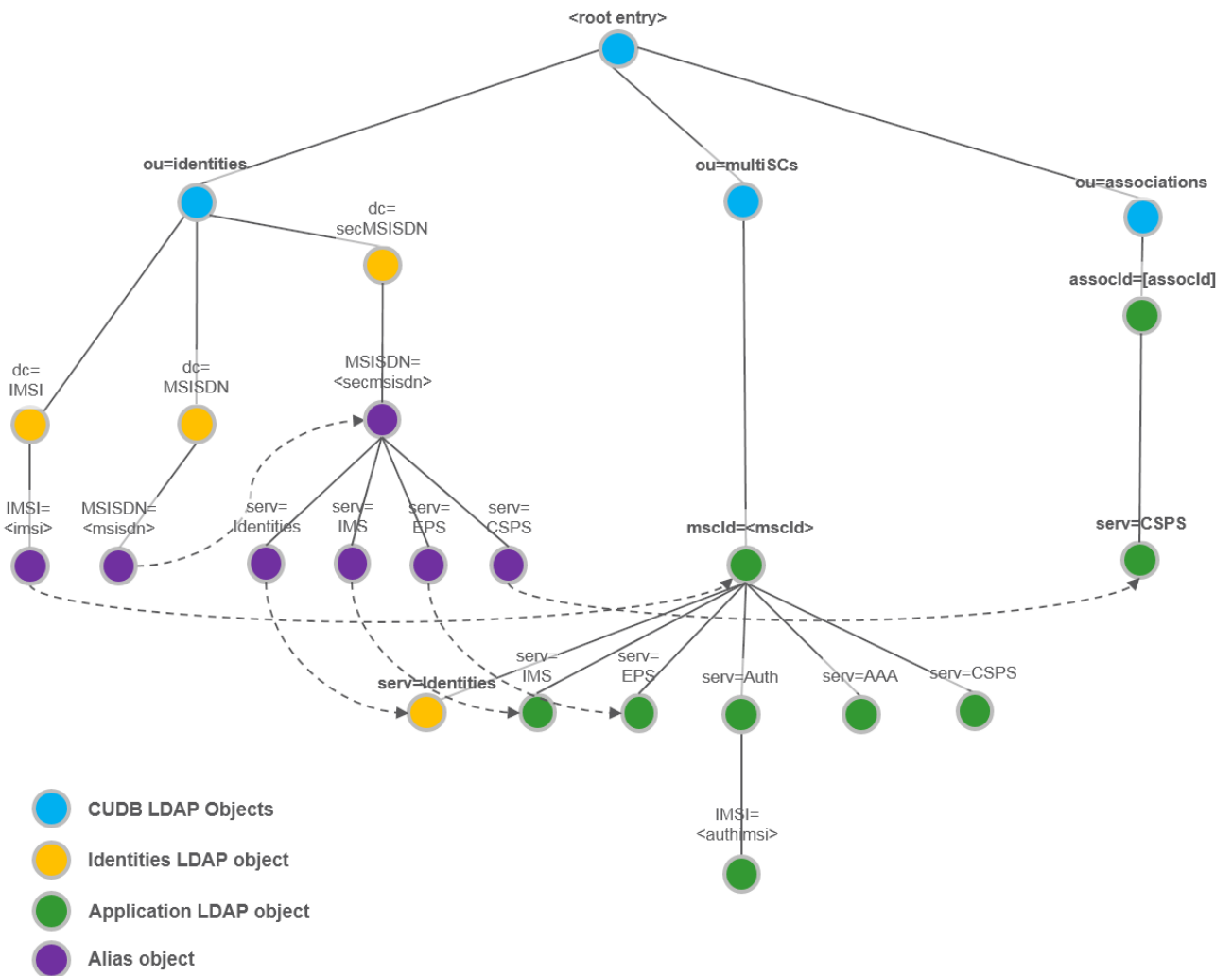


Figure 6 CUDB Data Model for MSIM

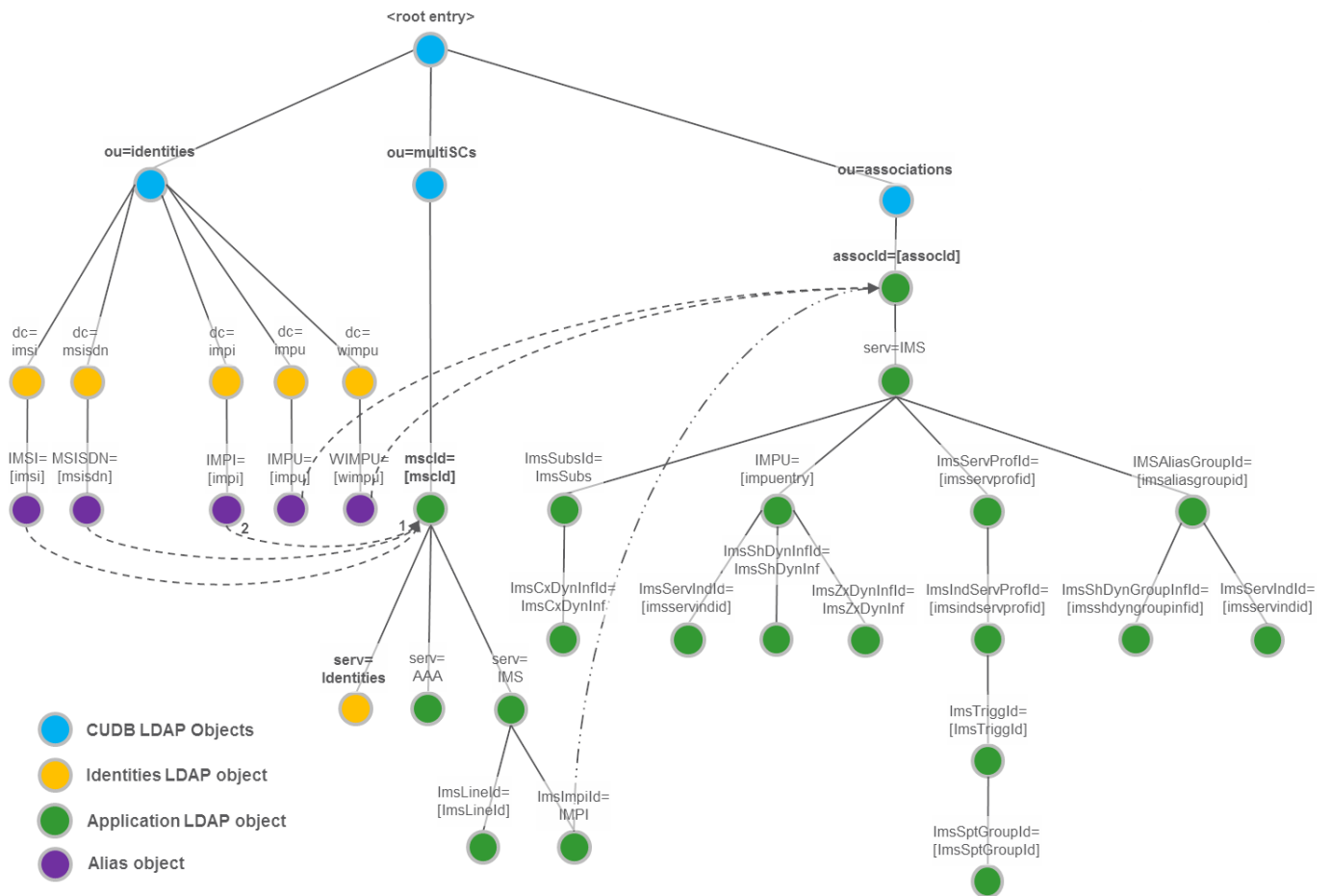


Figure 7 CUDB Data Model for IMS

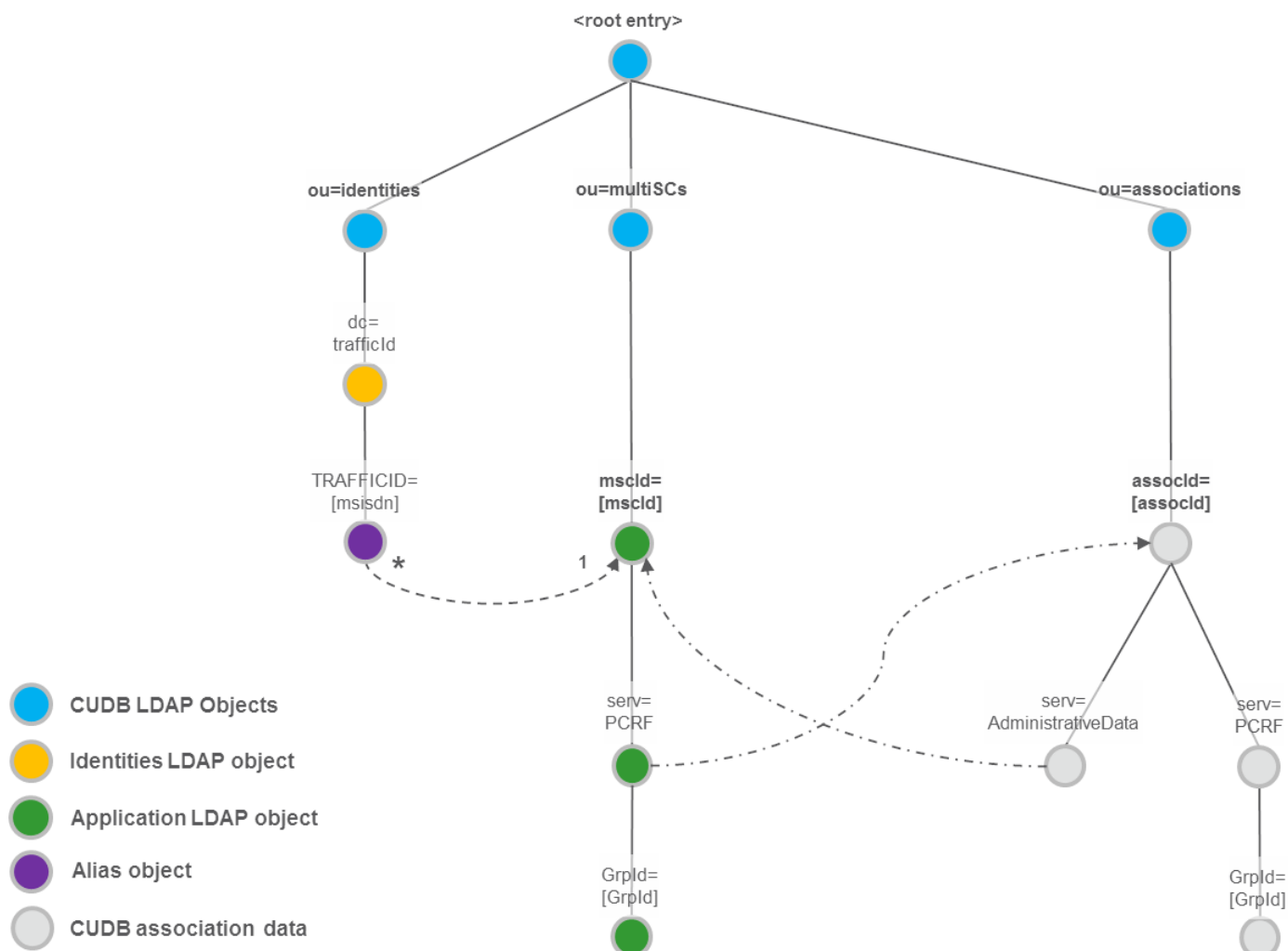


Figure 8 CUDB Data Model for SAPC

The Identities data entry (ou=identities, dc=<rootDN>) stores all the known identifiers used by the network to access service data. Identity entries within this main entry handle aliases pointing to the entries where the service data is located, under MultiServiceConsumer.

A MultiServiceConsumer can be seen as a logical entity used to access different services, offered by application Front Ends (FEs), and accessed by a set of network Identities. So MultiServiceConsumer entry (ou=multiSCs, dc=<rootDN>) includes the information of the consumed services that are accessed by one or several network Identities.

The following table shows the identities and related consumed services under MultiServiceConsumer:

**Table 5** *Identities and Related Consumed Services*

Service Name	Identities Data Entry	MultiServiceConsumer Entry	Identities Within Consumed Service Data
HLR	IMSI, MSISDN	CSPS data GPRS data CAMEL data GSM SCF data M2M data	IMSI MSISDN AMISDN
AUC	IMSI	AUC data	IMSI
AVG	IMSI or IMPI	AVG static data AVG dynamic data	-
EPS	IMSI	EPS static data EPS dynamic data	-
IMS	IMPI	IMPI data Access line data	IMPI
SAPC ⁽¹⁾	trafficId ⁽²⁾	PCRF data Group data	One or more trafficIds
-	-	AAA data (including subordinate objects) ⁽³⁾	-

(1) The SAPC service data is not under the same msclId entry with other services, so SAPC service data must be handled in a single repair command besides other services.

(2) A trafficId is created using the value of subscriberId, which is defined in the SAPC provisioning interface. For more details about subscriberId, refer to **SAPC Provisioning over CAI3G**, Reference [9].

(3) Service traffic data used by certain services such as IMS. The security data management information is stored in AAA data.

The serv=Identities entry is a special entry under the MultiServiceConsumer entry not corresponding to any real services and is shared by the rest of services. This entry gathers the following data:

- All the shared Identities, which are used to identify the service consumer for different services.
- A mask per Identity indicating which services the Identity has been defined for.

The following table shows some attributes of consumed service in the serv=Identities entry:

Table 6 *Attributes in serv=Identities*

Service Identities Attribute	Description
IMSI	The subscriber IMSI number to identify the services. For example, CSPS, EPS.
IMSIMASK	The bit mask to identify the service when uses IMSI as the identity.



Service Identities Attribute	Description
MSISDN	The subscriber MSISDN number to identify the services. For example, CSPS.
MSISDNMASK	The bit mask to identify the service when uses MSISDN as the identity.
IMSI AUX	The IMSI identity used for IMSI changeover.
IMPI	The IMS private user identity
IMPIMASK	The bit mask to identify the service when using IMPI as the identity.
SECIMPI	This attribute indicates an extra IMPI associated with the multi-service consumer. This attribute makes it possible that a single (primary) Identity is used to access different services stored under both MultiServiceConsumer and Association.

For detailed information about CUDB data model, refer to UDC Data Model Description.

Because the identities are stored in several places in CUDB, the following data inconsistency can occur owing to the data corruption:

- The value of the Identity in Identities data entry and serv=Identities entry are inconsistent with each other.
- The value of the Identity in Identities data entry and Multi Services Consumer Data are inconsistent with each other.
- The identities in different places do not link to the same MultiServiceConsumer Identifier (mscId=<mscid>).

The inconsistent information can be printed by command CUDBSUP.

An Association entry (ou=associations, dc=<rootDN>) includes the information specific to a service associated with a set of MultiServiceConsumers.

Service data under the Association can be accessed from Identities entries using alias. However, the relationship between a certain Association and its related MultiServiceConsumers for a given service is not visible in the LDAP DIT of the UDC DM. There are no aliases or pointers between the related MultiServiceConsumers and the Association.

Note: The SAPC association data is not processed by CUDB data repair and remove procedure.

The following table shows the identities and related entries in the serv=IMS, ou=associations entry.

For IMS service, an Association entry contains one or more IMPIs. Different IMPIs can be associated with different MultiServiceConsumers (mscid). All MutiServiceConsumers and related identities data are processed by a single CUDB data print and remove command.



Table 7 *Entries in serv=IMS, ou=associations and identities within Service Data*

Service Name	Service Entry	Identities within Service Data
IMS	ImsSubsId=ImsSubs	One or more IMPIs
	IMPU=[impumentry]	One or more IMPIs or IMPUs
	ImsServProfId=[imsservprofid]	-
	IMSAliasGroupId=[imsaliasgroupid]	-

MSIM support is an HLR feature that gives the operator possibility to link together up to multiple different HLR subscriptions in the CUDB. For details on MSIM data model in CUDB, refer to Figure 6.

For MSIM feature, the following table shows MSIM identities and related entries under `MultiServiceConsumer` and `Association` entries.

Table 8 *MSIM Identities and Related Entries under MultiServiceConsumer and Association*

Identities Data Entry	secMsisdn Data Entry	Aliased MultiServiceConsumer Entry	Identities with in Consumer Data	Aliased Association Entry	Identities with in Association Data
IMSI, MSISDN, SECMSISDN	serv=Identities alias, serv=IMS alias, serv=EPS alias, serv=CSPS alias	serv=Identities, serv=IMS, serv=EPS	IMSI, MSISDN	serv=CSPS	IMSI, MSISDNs

The `serv=CSPS, ou=associations` entry contains multiple pairs of MSISDN/IMSI. The entry also contains two attributes `ACTIVESUBS` and `MASTERSUBS`, which are used to identify the active IMSI and master MSISDN for MSIM.

6.2 CUDB Repair Routing Configuration

There are two routings to be added for CUDB repair actions:

- `CUDB_HLR`: The corresponding NE (group) must be configured with this NE type.
- `HLR_VALIDATION`: If the CUDB subscriber data does not have the HLR service, add an empty unconditional routing of `HLR_VALIDATION`. This is achieved by skipping NE or NE group configuration step in routing configuration. For details, refer to *User Guide for Resource Activation*, Reference [10].



For more details on the routing configuration, refer to *Configuration Manual for Resource Activation*, Reference [11].

6.3 CUDB Subscriber Data Print (CUDBSUP)

This command prints the subscriber data including identities, related consumed services, and association services.

6.3.1 CUDBSUP Request

The command description is as follows:

```

CUDBSUP: /
          | IMSI=imsi
          | MSISDN=msisdn
          | MSCID=mscid
          + IMPI=impi
          | IMPU=impu
          | TRAFFICID=trafficId
          | ASSOCID=associd
          | SECMSISDN=secMsisdn
          \
          + ;

```

Note: If the type of input key value is string, the value must be enclosed in double quotation marks.

```
CUDBSUP:IMPI="sip:2800000001@ims.mnc08.mcc280.3gppnetwork.org";
```

Example 3 CUDBSUP Command

In the this example, the subscriber data (such as IMS) of the IMPI `sip:2800000001@ims.mnc08.mcc280.3gppnetwork.org` is printed.

```
CUDBSUP:ASSOCID="Assoc01";
```

Example 4 CUDBSUP Command

In the this example, the subscriber data (such as Association) of the ASSOCID `Assoc01` is printed.

```
CUDBSUP:SECMSISDN=391900000016;
```

Example 5 CUDBSUP Command

In the this example, the subscriber data (such as MSIM) of the SECMSISDN `391900000016` is printed.

**Table 9** *Attributes Definition of CUDBSUP Command*

Parameter	Type	Description
IMSI	Digit string 6–15 digits. Each digit is 0–9.	International Mobile Subscriber Identity. Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS.
MSISDN	Digit string 5–15 digits. Each digit is 0–9.	Mobile Subscriber ISDN Number Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS.
MSCID	String characters	The unique ID for the <code>MultiServiceConsumer</code> parameter Applicable for one of the following two cases: <ul style="list-style-type: none">• HLR, M2M, AUC, AVG, IMS, and EPS• SAPC
IMPI	String characters Minimum length: 5 Maximum length: 70	The IMS private user identity Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
IMPU	String characters, begins with “sip:” or “tel:” Maximum length: 255	The IMS public user identity Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
TRAFFICID	String characters Maximum length: 255	The traffid corresponds to the identifier received by the SAPC in the traffic query. Applicable for the following services: SAPC
ASSOCID	String characters Maximum length: 72	The identity of association entry Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
SECMSISDN	Digit string 5–15 digits. Each digit is 0–9.	Mobile Subscriber ISDN Number Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS

6.3.2

CUDBSUP Result File

Commands with potential large responses save their results in a file. The file can be found in the directory `/var/dve/cli/` on the server where the command is run. Log in as `dvecli` to access the file.



Note: The CUDB subscription data is recorded in the file. It is recommended to delete the data manually once the data correction is done because the output file can contain sensitive subscriber data.

The results of other input keys, such as `impu`, `associd`, `traffid`, and `imsi`, are similar to the following example. Check data model for more details.

The following example shows the result of `CUDBSUP` for services `IMS`, `HLR` (including `MSIM` subscription data), `AUC`, `AVG`, `EPS`, and `M2M`. The result XML message of each service is not in sequential order.

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<Result xmlns="http://schemas.ericsson.com/MA/">
  <Request>
    <command>CUDBSUP:IMPI=460080100031076@ims.mnc008.mcc460.3gppnetwork.org
    </command>
    <starttime>2016-09-29 00:46:31</starttime>
    <jobid>96</jobid>
  </Request>
  <Response xmlns="http://schemas.ericsson.com/pg/cudb/1.0/">
    <Entry name="dc=com">
      <Entry name="dc=operator">
        <Entry name="ou=identities">
          <Entry name="dc=impi">
            <Entry name="IMPI=460080100031077@ims.mnc008.mcc460.3gppnetwork.org">
              <aliasedObjectName>mscId=3d43ddd660604f4bale05189b4e745ce,ou=multiSCs,dc=operator,dc=com</aliasedObjectName>
              <IMPI>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
              <objectClass>IMPI</objectClass>
              <objectClass>alias</objectClass>
              <objectClass>top</objectClass>
            </Entry>
            <Entry name="IMPI=460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
              <aliasedObjectName>mscId=3d43ddd660604f4bale05189b4e745ce,ou=multiSCs,dc=operator,dc=com</aliasedObjectName>
              <IMPI>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
              <objectClass>IMPI</objectClass>
              <objectClass>alias</objectClass>
              <objectClass>top</objectClass>
            </Entry>
          </Entry>
        </Entry>
      <Entry name="dc=impu">
        <Entry name="IMPU=sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org">
          <aliasedObjectName>assocId=8613400031076,ou=associations,dc=operator,dc=com</aliasedObjectName>
          <IMPU>sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
          <objectClass>IMPU</objectClass>
          <objectClass>alias</objectClass>
          <objectClass>top</objectClass>
        </Entry>
        <Entry name="IMPU=sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org">
          <aliasedObjectName>assocId=8613400031076,ou=associations,dc=operator,dc=com</aliasedObjectName>
          <IMPU>sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org</IMPU>
          <objectClass>IMPU</objectClass>
          <objectClass>alias</objectClass>
          <objectClass>top</objectClass>
        </Entry>
        <Entry name="IMPU=sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
          <aliasedObjectName>assocId=8613400031076,ou=associations,dc=operator,dc=com</aliasedObjectName>
          <IMPU>sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
          <objectClass>IMPU</objectClass>
          <objectClass>alias</objectClass>
          <objectClass>top</objectClass>
        </Entry>
        <Entry name="IMPU=tel:+8613400031076">
          <aliasedObjectName>assocId=8613400031076,ou=associations,dc=operator,dc=com</aliasedObjectName>
          <IMPU>tel:+8613400031076</IMPU>
          <objectClass>IMPU</objectClass>
          <objectClass>alias</objectClass>
          <objectClass>top</objectClass>
        </Entry>
      </Entry>
    </Entry>
    <Entry name="dc=imsi">
```



```
<Entry name="IMSI=460080100031077">
  <IMSI>460080100031077</IMSI>
  <aliasedObjectName>mscId=3d43ddd660604f4ba1e05189b4e745ce,ou=multiSCs,dc=operator,dc=com</aliasedObjectName>
  <objectClass>IMSI</objectClass>
  <objectClass>alias</objectClass>
  <objectClass>top</objectClass>
</Entry>
<Entry name="IMSI=460080100031076">
  <IMSI>460080100031076</IMSI>
  <aliasedObjectName>mscId=3d43ddd660604f4ba1e05189b4e745ce,ou=multiSCs,dc=operator,dc=com</aliasedObjectName>
  <objectClass>alias</objectClass>
  <objectClass>top</objectClass>
</Entry>
</Entry>
<Entry name="dc=msisdn">
  <Entry name="MSISDN=8613400031076">
    <aliasedObjectName>mscId=3d43ddd660604f4ba1e05189b4e745ce,ou=multiSCs,dc=operator,dc=com</aliasedObjectName>
    <objectClass>MSISDN</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
    <MSISDN>8613400031076</MSISDN>
  </Entry>
</Entry>
</Entry>
<Entry name="ou=multiSCs">
  <Entry name="mscId=3d43ddd660604f4ba1e05189b4e745ce">
    <mscId>3d43ddd660604f4ba1e05189b4e745ce</mscId>
    <objectClass>CUDBMultiServiceConsumer</objectClass>
    <objectClass>top</objectClass>
  <Entry name="serv=AAA">
    <objectClass>CUDBService</objectClass>
    <objectClass>top</objectClass>
    <serv>AAA</serv>
  </Entry>
  <Entry name="serv=Auth">
    <objectClass>CUDBService</objectClass>
    <objectClass>top</objectClass>
    <serv>Auth</serv>
  <Entry name="AvgStaInfId=AvgStaInf">
    <AvgA4KeyInd>222</AvgA4KeyInd>
    <CDC>1</CDC>
    <AvgFSetInd>12</AvgFSetInd>
    <AvgEncryptedK>24AAAFF8787695BCCF4376BBFFC4001</AvgEncryptedK>
    <objectClass>AvgStaticInf</objectClass>
    <objectClass>top</objectClass>
    <AvgEncryptedOPc>24AAAFF8787695BCCF4376BBFFC4001</AvgEncryptedOPc>
    <AvgAmf>AACD</AvgAmf>
    <AvgStaInfId>AvgStaInf</AvgStaInfId>
  <Entry name="AvgDynInfId=AvgDynInf">
    <objectClass>AvgDynInf</objectClass>
    <objectClass>top</objectClass>
    <AvgDynInfId>AvgDynInf</AvgDynInfId>
  </Entry>
</Entry>
<Entry name="AvgStaInfId=OldAvg">
  <AvgA4KeyInd>111</AvgA4KeyInd>
  <CDC>1</CDC>
  <AvgFSetInd>11</AvgFSetInd>
  <AvgEncryptedK>24AAAFF8787695BCCF4376BBFFC4000</AvgEncryptedK>
  <objectClass>AvgStaticInf</objectClass>
  <objectClass>top</objectClass>
  <AvgEncryptedOPc>24AAAFF8787695BCCF4376BBFFC4000</AvgEncryptedOPc>
  <AvgAmf>AACD</AvgAmf>
  <AvgStaInfId>OldAvg</AvgStaInfId>
  <Entry name="AvgDynInfId=AvgDynInf">
    <objectClass>AvgDynInf</objectClass>
    <objectClass>top</objectClass>
    <AvgDynInfId>AvgDynInf</AvgDynInfId>
  </Entry>
</Entry>
<Entry name="IMSI=460080100031076">
  <AMFVALUE>15</AMFVALUE>
  <EKI>1234567890ABCDEF1234567890ABCDEF</EKI>
  <objectClass>top</objectClass>
  <objectClass>AU1</objectClass>
```



```

<BNS>15</BNS>
<GAPSIGN>15</GAPSIGN>
<SQNPS>15</SQNPS>
<KIND>509</KIND>
<FSETIND>15</FSETIND>
<AKAALGIND>15</AKAALGIND>
<GAP>FFFFFFFFFFFF</GAP>
<CDC>0</CDC>
<SQN>15</SQN>
<IMSI>460080100031076</IMSI>
<A3A8IND>2</A3A8IND>
<SQNCS>15</SQNCS>
<AKATYPE>0</AKATYPE>
<VNUMBER>0</VNUMBER>
<SQNIMS>15</SQNIMS>
<A4IND>1</A4IND>
</Entry>
</Entry>
<Entry name="serv=CSPS">
  <DBSG>1</DBSG>
  <OFA>0</OFA>
  <SOCOLP>0</SOCOLP>
  <SOCB>0</SOCB>
  <objectClass>CP11</objectClass>
  <objectClass>CP0A</objectClass>
  <objectClass>CP04</objectClass>
  <objectClass>CPZ</objectClass>
  <objectClass>CPM4</objectClass>
  <objectClass>CPM3</objectClass>
  <objectClass>CPM2</objectClass>
  <objectClass>CPM1</objectClass>
  <objectClass>CPM</objectClass>
  <objectClass>CPL</objectClass>
  <objectClass>CPK</objectClass>
  <objectClass>CPJ</objectClass>
  <objectClass>CPI</objectClass>
  <objectClass>CPH</objectClass>
  <objectClass>CPG</objectClass>
  <objectClass>CPF</objectClass>
  <objectClass>CPE</objectClass>
  <objectClass>CPD</objectClass>
  <objectClass>CPC</objectClass>
  <objectClass>CPB</objectClass>
  <objectClass>CPA</objectClass>
  <objectClass>CP9</objectClass>
  <objectClass>CP8</objectClass>
  <objectClass>CP7</objectClass>
  <objectClass>CP6</objectClass>
  <objectClass>CP5</objectClass>
  <objectClass>CP4</objectClass>
  <objectClass>CP3</objectClass>
  <objectClass>CP2</objectClass>
  <objectClass>CP1</objectClass>
  <objectClass>CUDBServiceAuxiliary</objectClass>
  <objectClass>top</objectClass>
  <GSMUEFEAT>0</GSMUEFEAT>
  <DEMLPP>4</DEMLPP>
  <IMSICHODATE>0A0903</IMSICHODATE>
  <MSISDN>8613400031076</MSISDN>
  <serv>CSPS</serv>
  <CAT>10</CAT>
  <SODCF>0</SODCF>
  <PWD>*****</PWD>
  <MEMLPP>1</MEMLPP>
  <SOCLIR>0</SOCLIR>
  <PWDC>0</PWDC>
  <SOCLIP>0</SOCLIP>
  <SOCFU>0</SOCFU>
  <IMSICHO>460080100031076</IMSICHO>
  <TS11>1</TS11>
  <SOCFNRY>0</SOCFNRY>
  <NAM>0</NAM>
  <SOSDCF>7</SOSDCF>
  <CSLOC>2</CSLOC>
  <CDC>21</CDC>
  <TS22>1</TS22>

```



```
<IMSI>460080100031077</IMSI>
<TS21>1</TS21>
<SOCFB>0</SOCFB>
<IMSICHOST>4</IMSICHOST>
<SOCFNRC>0</SOCFNRC>
</Entry>
<Entry name="serv=EPS">
  <objectClass>CUDBService</objectClass>
  <objectClass>top</objectClass>
  <serv>EPS</serv>
  <Entry name="EpsStaInfId=EpsStaInf">
    <EpsRoamAllow>FALSE</EpsRoamAllow>
    <CDC>1</CDC>
    <EpsStaInfId>EpsStaInf</EpsStaInfId>
    <EpsOdb>0</EpsOdb>
    <objectClass>EpsStaticInf</objectClass>
    <objectClass>top</objectClass>
    <EpsProfileId>4</EpsProfileId>
    <Entry name="EpsDynInfId=EpsDynInf">
      <EpsLocState>0</EpsLocState>
      <objectClass>EpsDynInf</objectClass>
      <objectClass>top</objectClass>
      <EpsLastInsertSent>3139393030313031543030303030303030</EpsLastInsertSent>
      <EpsDynInfId>EpsDynInf</EpsDynInfId>
    </Entry>
  </Entry>
</Entry>
<Entry name="serv=IMS">
  <objectClass>CUDBService</objectClass>
  <objectClass>top</objectClass>
  <serv>IMS</serv>
  <Entry name="ImsImpiId=IMPI">
    <assocId>8613400031076</assocId>
    <CDC>1</CDC>
    <ImsAuthSchMask>4</ImsAuthSchMask>
    <ImsBarrInd>FALSE</ImsBarrInd>
    <objectClass>ImsImpi</objectClass>
    <ImsRoamAllow>TRUE</ImsRoamAllow>
    <ImsImpiId>IMPI</ImsImpiId>
  </Entry>
</Entry>
<Entry name="serv=Identities">
  <IMSIAux>460080100031077</IMSIAux>
  <IMPUCHOIDS>sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org$<serv>Identities</serv>
  <msisdMask>'0000000000000011'B</msisdMask>
  <imsiMask>'0000000000110111'B</imsiMask>
  <IMSICHOEXEC>'0000000000000101'B</IMSICHOEXEC>
  <imsiAuxMask>'0000000000110111'B</imsiAuxMask>
  <IMPIAux>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPIAux>
  <IMSIEXPYRDATE>100A0A</IMSIEXPYRDATE>
  <impiMask>'0000000000000100'B</impiMask>
  <CDC>6</CDC>
  <MSISDN>8613400031076</MSISDN>
  <objectClass>mscIdentities</objectClass>
  <objectClass>CUDBService</objectClass>
  <objectClass>top</objectClass>
  <IMSICHOSTATUS>4</IMSICHOSTATUS>
  <IMSI>460080100031076</IMSI>
  <IMPI>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
</Entry>
</Entry>
<Entry name="ou=associations">
  <Entry name="assocId=8613400031076">
    <assocId>8613400031076</assocId>
    <objectClass>CUDBAssociation</objectClass>
    <objectClass>top</objectClass>
    <Entry name="serv=IMS">
      <objectClass>CUDBService</objectClass>
      <objectClass>top</objectClass>
      <serv>IMS</serv>
      <Entry name="IMPU=sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org">
        <ImsServProfId>8613400031076</ImsServProfId>
        <IMPU>sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org</IMPU>
        <ImsIsDefault>TRUE</ImsIsDefault>
      </Entry>
    </Entry>
  </Entry>
</Entry>
```




```

<CDC>1</CDC>
<objectClass>ImsImpu</objectClass>
<ImsMaxNumberOfContacts>5</ImsMaxNumberOfContacts>
<ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
<ImsSessBarrInd>FALSE</ImsSessBarrInd>
<ImsXcapAllow>FALSE</ImsXcapAllow>
<ImsIrs>1</ImsIrs>
<Entry name="ImsShDynInfId=ImsShDynInf">
  <CDC>1</CDC>
  <ImsShData>0025065F5D005F5E00</ImsShData>
  <objectClass>ImsShDynInf</objectClass>
  <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
</Entry>
<Entry name="ImsZxDynInfId=ImsZxDynInf">
  <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
  <objectClass>ImsZxDynInf</objectClass>
</Entry>
</Entry>
<Entry name="IMPU=sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
  <ImsIsDefault>FALSE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>1</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>TRUE</ImsSessBarrInd>
  <ImsXcapAllow>FALSE</ImsXcapAllow>
  <ImsIrs>0</ImsIrs>
  <ImsImpuMark>1</ImsImpuMark>
  <Entry name="ImsShDynInfId=ImsShDynInf">
    <CDC>1</CDC>
    <ImsShData>0025065F5D005F5E00</ImsShData>
    <objectClass>ImsShDynInf</objectClass>
    <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
  </Entry>
  <Entry name="ImsZxDynInfId=ImsZxDynInf">
    <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
    <objectClass>ImsZxDynInf</objectClass>
  </Entry>
</Entry>
<Entry name="IMPU=sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
  <ImsIsDefault>FALSE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>1</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>TRUE</ImsSessBarrInd>
  <ImsXcapAllow>FALSE</ImsXcapAllow>
  <ImsIrs>1</ImsIrs>
  <Entry name="ImsShDynInfId=ImsShDynInf">
    <CDC>1</CDC>
    <ImsShData>0025065F5D005F5E00</ImsShData>
    <objectClass>ImsShDynInf</objectClass>
    <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
  </Entry>
  <Entry name="ImsZxDynInfId=ImsZxDynInf">
    <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
    <objectClass>ImsZxDynInf</objectClass>
  </Entry>
</Entry>
<Entry name="IMPU=tel:+8613400031076">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>tel:+8613400031076</IMPU>
  <ImsIsDefault>TRUE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>5</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>FALSE</ImsSessBarrInd>
  <ImsXcapAllow>FALSE</ImsXcapAllow>
  <ImsIrs>1</ImsIrs>
  <Entry name="ImsShDynInfId=ImsShDynInf">
    <CDC>1</CDC>

```



Example 6 CUDBSUP Result File



6.3.3 CUDBSUP Result File Schema

The result schema file for the CUDBSUP, CUDBSUE, and CUDBARI requests is as follows:

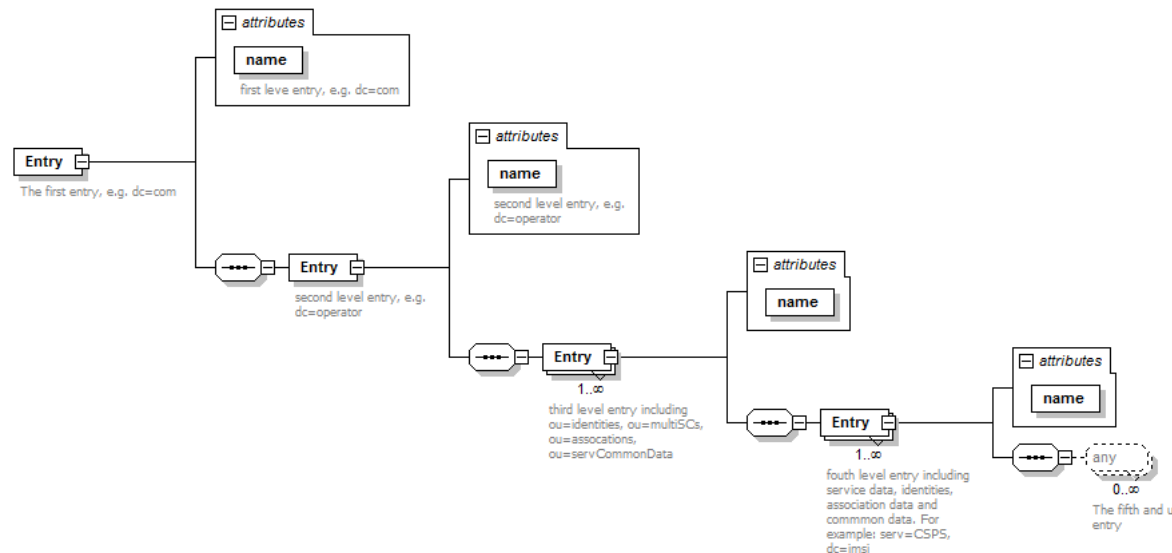


Figure 9 CUDBSUP Result File Schema

6.4 CUDB Subscriber Data Delete (CUDBSUE)

This command deletes all the related `MultiServiceConsumer` entries, the `associations` entry (only applicable when entry `serv=IMS` is inside it), and the `identities` data entry that point to the same `MultiServiceConsumer` entry (`mscId=<mscid>`) and `associations` entry (`assocId=<associd>`).

If MSIM data exists, the `serv=CSPS` entry under the `associations` entry is checked when deleting IMSI or MSISDN identities. If the IMSI or MSISDN is active IMSI or master MSISDN, an error is returned. It is suggested to change the active IMSI or master MSISDN before running the CUDBSUE command.

The CUDBSUE command is fault tolerant, which means it is always possible to be executed, even if a previous CUDBSUE command has failed.

This command prints services data that has been removed, and it saves the results in a file. The removed MSIM data including the CSPS data is under the changed `associations` entry. For detailed results, see Section 6.4.2 on page 33.

This command only supports services HLR (including MSIM subscription data), AUC, AVG, M2M, IMS, EPS, and SAPC. Errors are returned if the subscriber has other services.

Note: The `mscCommonData` entry is not removed.



6.4.1 CUDBSUE Request

The command description is as follows:

```
CUDBSUE : /
           |IMSI=imsi [, IDENTITYONLY]
           |MSISDN=msisdn [, IDENTITYONLY]
           |MSCID=mscid
           +IMPI=impi [, IDENTITYONLY]
           |IMPU=impu [, IDENTITYONLY]
           |ASSOCID=assocId
           |TRAFFICID=trafficId [, IDENTITYONLY]
           |SECMSISDN=secMsisdn [, IDENTITYONLY]
           \
           +;
```

Note: If the type of the input key value is string, the value must be enclosed in double quotation marks.

```
CUDBSUE : ASSOCID="Assoc01";
```

Example 7 CUDBSUE command

In the this example, all CUDB subscriber data (such as Association) related to the ASSOCID number Assoc01 is deleted.

Table 10 Attributes Definition of CUDBSUE Command

Parameter	Type	Description
IMSI	Digit string 6–15 digits. Each digit is 0–9.	International Mobile Subscriber Identity. Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
MSISDN	Digit string 5–15 digits. Each digit is 0–9.	Mobile Subscriber ISDN Number Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
MSCID	String characters	The unique ID for the MultiServiceConsumer parameter Applicable for one of the following two cases: <ul style="list-style-type: none">• HLR, M2M, AUC, AVG, IMS, and EPS• SAPC
IMPI	String characters Minimum length: 5 Maximum length: 70	The IMS private user identity Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS



Parameter	Type	Description
IMPU	String characters, begins with "sip:" or "tel:" Maximum length: 255	The IMS public user identity Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
TRAFFICID	String characters Maximum length: 255	The trafficid corresponds to the identifier received by the SAPC in the traffic query. Applicable for the following services: SAPC
IDENTITYONLY	This parameter has no value.	This parameter is optional. If it is given, only the ou=identities data is removed.
ASSOCID	String characters Maximum length: 72	The identity of association entry Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS
SECMSISDN	Digit string 5–15 digits. Each digit is 0–9.	Mobile Subscriber secondary ISDN Number Applicable for the following services: HLR, M2M, AUC, AVG, IMS, and EPS

6.4.2 CUDBSUE Result File

Commands with potential large responses save their results in a file. The file can be found in the directory `/var/dve/cli/` on the server where the command is run. Log in as `dvecli` to access the file.

Note: The CUDB subscription data is recorded in the file. It is recommended to delete the data manually once the data correction is done because the output file can contain sensitive subscriber data.

The results of other input keys, such as `impu`, `associd`, `trafficid`, `msisdn`, `secmsisdn`, and `imsi`, are similar to the following example. Check data model for more details.

The following example shows the result of `CUDBSUE` for services IMS, HLR (including MSIM subscription data), AUC, AVG, and EPS. The result XML message of each service is not in sequential order.

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<Result xmlns="http://schemas.ericsson.com/MA/">
  <Request>
    <command>CUDBSUE:IMPI="460080100031076@ims.mnc008.mcc460.3gppnetwork.org"</command>
    <starttime>2016-09-29 00:46:51</starttime>
    <jobid>97</jobid>
  </Request>
  <Response xmlns="http://schemas.ericsson.com/pg/cudb/1.0/">
    <Entry name="dc=com">
      <Entry name="dc=operator">
        <Entry name="ou=identities">
          <Entry name="dc=impi">
            <Entry name="IMPI=460080100031077@ims.mnc008.mcc460.3gppnetwork.org">
              <aliasedObjectName>
                mscId=a4589295533f44f08555496d4ac46114,ou=multiSCs,dc=operator,dc=com
              </aliasedObjectName>
            </Entry>
          </Entry>
        </Entry>
      </Entry>
    </Entry>
  </Response>
</Result>
```



```
<IMPI>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
<objectClass>IMPI</objectClass>
<objectClass>alias</objectClass>
<objectClass>top</objectClass>
</Entry>
<Entry name="IMPI=460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
  <aliasedObjectName>
    mscId=a4589295533f44f08555496d4ac46114,ou=multiSCs,dc=operator,dc=com
  </aliasedObjectName>
  <IMPI>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
  <objectClass>IMPI</objectClass>
  <objectClass>alias</objectClass>
  <objectClass>top</objectClass>
</Entry>
</Entry>
<Entry name="dc=impu">
  <Entry name="IMPU=sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org">
    <aliasedObjectName>
      assocId=8613400031076,ou=associations,dc=operator,dc=com
    </aliasedObjectName>
    <IMPU>sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org</IMPU>
    <objectClass>IMPU</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
  </Entry>
  <Entry name="IMPU=sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
    <aliasedObjectName>
      assocId=8613400031076,ou=associations,dc=operator,dc=com
    </aliasedObjectName>
    <IMPU>sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
    <objectClass>IMPU</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
  </Entry>
  <Entry name="IMPU=sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org">
    <aliasedObjectName>
      assocId=8613400031076,ou=associations,dc=operator,dc=com
    </aliasedObjectName>
    <IMPU>sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
    <objectClass>IMPU</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
  </Entry>
  <Entry name="IMPU=tel:+8613400031076">
    <aliasedObjectName>
      assocId=8613400031076,ou=associations,dc=operator,dc=com
    </aliasedObjectName>
    <IMPU>tel:+8613400031076</IMPU>
    <objectClass>IMPU</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
  </Entry>
</Entry>
<Entry name="dc=imsi">
  <Entry name="IMSI=460080100031077">
    <IMSI>460080100031077</IMSI>
    <aliasedObjectName>
      mscId=a4589295533f44f08555496d4ac46114,ou=multiSCs,dc=operator,dc=com
    </aliasedObjectName>
    <objectClass>IMSI</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
  </Entry>
  <Entry name="IMSI=460080100031076">
    <IMSI>460080100031076</IMSI>
    <aliasedObjectName>
      mscId=a4589295533f44f08555496d4ac46114,ou=multiSCs,dc=operator,dc=com
    </aliasedObjectName>
    <objectClass>IMSI</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
  </Entry>
</Entry>
<Entry name="dc=msisdn">
  <Entry name="MSISDN=8613400031076">
    <aliasedObjectName>
```



```

        mscId=a4589295533f44f08555496d4ac46114,ou=multiSCs,dc=operator,dc=com
    </aliasedObjectName>
    <objectClass>MSISDN</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
    <MSISDN>8613400031076</MSISDN>
</Entry>
</Entry>
</Entry>
<Entry name="ou=multiSCs">
    <mscId>a4589295533f44f08555496d4ac46114</mscId>
    <objectClass>CUDBMultiServiceConsumer</objectClass>
    <objectClass>top</objectClass>
    <Entry name="serv=AAA">
        <objectClass>CUDBService</objectClass>
        <objectClass>top</objectClass>
        <serv>AAA</serv>
    </Entry>
    <Entry name="serv=Auth">
        <objectClass>CUDBService</objectClass>
        <objectClass>top</objectClass>
        <serv>Auth</serv>
    <Entry name="AvgStaInfId=AvgStaInf">
        <AvgA4KeyInd>222</AvgA4KeyInd>
        <CDC>1</CDC>
        <AvgFSetInd>12</AvgFSetInd>
        <AvgEncryptedK>24AAAFF8787695BCCF4376BBFFC4001</AvgEncryptedK>
        <objectClass>AvgStaticInf</objectClass>
        <objectClass>top</objectClass>
        <AvgEncryptedOPc>24AAAFF8787695BCCF4376BBFFC4001</AvgEncryptedOPc>
        <AvgAmf>AACD</AvgAmf>
        <AvgStaInfId>AvgStaInf</AvgStaInfId>
        <Entry name="AvgDynInfId=AvgDynInf">
            <objectClass>AvgDynInf</objectClass>
            <objectClass>top</objectClass>
            <AvgDynInfId>AvgDynInf</AvgDynInfId>
        </Entry>
    </Entry>
    <Entry name="AvgStaInfId=OldAvg">
        <AvgA4KeyInd>111</AvgA4KeyInd>
        <CDC>1</CDC>
        <AvgFSetInd>11</AvgFSetInd>
        <AvgEncryptedK>24AAAFF8787695BCCF4376BBFFC4000</AvgEncryptedK>
        <objectClass>AvgStaticInf</objectClass>
        <objectClass>top</objectClass>
        <AvgEncryptedOPc>24AAAFF8787695BCCF4376BBFFC4000</AvgEncryptedOPc>
        <AvgAmf>AACD</AvgAmf>
        <AvgStaInfId>OldAvg</AvgStaInfId>
        <Entry name="AvgDynInfId=AvgDynInf">
            <objectClass>AvgDynInf</objectClass>
            <objectClass>top</objectClass>
            <AvgDynInfId>AvgDynInf</AvgDynInfId>
        </Entry>
    </Entry>
</Entry>
<Entry name="IMSI=460080100031077">
    <AMFVALUE>15</AMFVALUE>
    <EKI>1134567890ABCDEF1234567890ABCDEF</EKI>
    <objectClass>top</objectClass>
    <objectClass>AU1</objectClass>
    <BNS>15</BNS>
    <GAPSIGN>15</GAPSIGN>
    <SQNP>15</SQNP>
    <KIND>509</KIND>
    <FSETIND>15</FSETIND>
    <AKAALGIND>15</AKAALGIND>
    <GAP>FFFFFFFFFFFF</GAP>
    <CDC>0</CDC>
    <SQN>15</SQN>
    <IMSI>460080100031077</IMSI>
    <A3A8IND>2</A3A8IND>
    <SQNCS>15</SQNCS>
    <AKATYPE>0</AKATYPE>
    <VNUMBER>0</VNUMBER>
    <SQNIMS>15</SQNIMS>
    <A4IND>1</A4IND>

```



```
</Entry>
</Entry>
<Entry name="serv=CSPS">
  <DBSG>1</DBSG>
  <OFA>0</OFA>
  <SOCOLP>0</SOCOLP>
  <SOCB>0</SOCB>
  <objectClass>CP11</objectClass>
  <objectClass>CP0A</objectClass>
  <objectClass>CP04s</objectClass>
  <objectClass>CPZ</objectClass>
  <objectClass>CPM4</objectClass>
  <objectClass>CPM3</objectClass>
  <objectClass>CPM2</objectClass>
  <objectClass>CPM1</objectClass>
  <objectClass>CPM</objectClass>
  <objectClass>CPL</objectClass>
  <objectClass>CPK</objectClass>
  <objectClass>CPJ</objectClass>
  <objectClass>CPI</objectClass>
  <objectClass>CPH</objectClass>
  <objectClass>CPG</objectClass>
  <objectClass>CPF</objectClass>
  <objectClass>CPE</objectClass>
  <objectClass>CPD</objectClass>
  <objectClass>CPC</objectClass>
  <objectClass>CPB</objectClass>
  <objectClass>CPA</objectClass>
  <objectClass>CP9</objectClass>
  <objectClass>CP8</objectClass>
  <objectClass>CP7</objectClass>
  <objectClass>CP6</objectClass>
  <objectClass>CP5</objectClass>
  <objectClass>CP4</objectClass>
  <objectClass>CP3</objectClass>
  <objectClass>CP2</objectClass>
  <objectClass>CP1</objectClass>
  <objectClass>CUDBServiceAuxiliary</objectClass>
  <objectClass>top</objectClass>
  <GSMUEFEAT>0</GSMUEFEAT>
  <DEMLPP>4</DEMLPP>
  <IMSICHODATE>0A0903</IMSICHODATE>
  <MSISDN>8613400031076</MSISDN>
  <serv>CSPS</serv>
  <CAT>10</CAT>
  <SODCF>0</SODCF>
  <PWD>*****</PWD>
  <MEMLPP>1</MEMLPP>
  <SOCLIR>0</SOCLIR>
  <PWDC>0</PWDC>
  <SOCLIP>0</SOCLIP>
  <SOCFU>0</SOCFU>
  <IMSICHO>460080100031076</IMSICHO>
  <TS11>1</TS11>
  <SOCFNRY>0</SOCFNRY>
  <NAM>0</NAM>
  <SOSDCF>7</SOSDCF>
  <CSLOC>2</CSLOC>
  <CDC>21</CDC>
  <TS22>1</TS22>
  <IMSI>460080100031077</IMSI>
  <TS21>1</TS21>
  <SOCFB>0</SOCFB>
  <IMSICHOST>4</IMSICHOST>
  <SOCFNRC>0</SOCFNRC>
  <Entry name="ei=camel">
    <aliasedObjectName>
      CSP=0,ou=camelProfiles,serv=CSPS,ou=mscCommonData,dc=operator,dc=com
    </aliasedObjectName>
    <objectClass>CUDBExtensibleObject</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
    <ei>camel</ei>
  </Entry>
  <Entry name="ei=gprs">
    <aliasedObjectName>
```




```

        PDPCP=0,ou=gprsProfiles,serv=CSPS,ou=mscCommonData,dc=operator,dc=com
    </aliasedObjectName>
    <objectClass>CUDBExtensibleObject</objectClass>
    <objectClass>alias</objectClass>
    <objectClass>top</objectClass>
    <ei>gprs</ei>
</Entry>
</Entry>
<Entry name="serv=EPS">
    <objectClass>CUDBService</objectClass>
    <objectClass>top</objectClass>
    <serv>EPS</serv>
    <Entry name="EpsStaInfId=EpsStaInf">
        <EpsRoamAllow>FALSE</EpsRoamAllow>
        <CDC>1</CDC>
        <EpsStaInfId>EpsStaInf</EpsStaInfId>
        <EpsOdb>0</EpsOdb>
        <objectClass>EpsStaticInf</objectClass>
        <objectClass>top</objectClass>
        <EpsProfileId>4</EpsProfileId>
        <Entry name="EpsDynInfId=EpsDynInf">
            <EpsLocState>0</EpsLocState>
            <objectClass>EpsDynInf</objectClass>
            <objectClass>top</objectClass>
            <EpsLastInsertSent>31393930303130315430303030303030</EpsLastInsertSent>
            <EpsDynInfId>EpsDynInf</EpsDynInfId>
        </Entry>
    </Entry>
</Entry>
<Entry name="serv=IMS">
    <objectClass>CUDBService</objectClass>
    <objectClass>top</objectClass>
    <serv>IMS</serv>
    <Entry name="ImsImpiId=IMPI">
        <assocId>8613400031076</assocId>
        <CDC>1</CDC>
        <ImsAuthSchMask>4</ImsAuthSchMask>
        <ImsBarrInd>FALSE</ImsBarrInd>
        <objectClass>ImsImpi</objectClass>
        <ImsRoamAllow>TRUE</ImsRoamAllow>
        <ImsImpiId>IMPI</ImsImpiId>
    </Entry>
</Entry>
<Entry name="serv=Identities">
    <IMSIAux>460080100031077</IMSIAux>
    <IMPUCHOIDS>
        sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org$
        sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org$
    </IMPUCHOIDS>
    <serv>Identities</serv>
    <msisdMask>'000000000000000011'B</msisdMask>
    <imsiMask>'00000000000000001111'B</imsiMask>
    <IMSICHOEXEC>'0000000000000000101'B</IMSICHOEXEC>
    <imsiAuxMask>'0000000000000000110111'B</imsiAuxMask>
    <IMPIAux>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPIAux>
    <IMSIEXPYRYDATE>100A0A</IMSIEXPYRYDATE>
    <impiMask>'0000000000000000100'B</impiMask>
    <CDC>5</CDC>
    <MSISDN>8613400031076</MSISDN>
    <objectClass>mscIdentities</objectClass>
    <objectClass>CUDBService</objectClass>
    <objectClass>top</objectClass>
    <IMSICHOSTATUS>4</IMSICHOSTATUS>
    <IMSI>460080100031076</IMSI>
    <IMPI>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
</Entry>
</Entry>
<Entry name="ou=associations">
    <Entry name="assocId=8613400031076">
        <assocId>8613400031076</assocId>
        <objectClass>CUDBAssociation</objectClass>
        <objectClass>top</objectClass>
        <Entry name="serv=IMS">
            <objectClass>CUDBService</objectClass>
            <objectClass>top</objectClass>
            <serv>IMS</serv>
        </Entry>
    </Entry>
</Entry>

```



```
<Entry name="IMPU=sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>sip:+8613400031076@gd.ims.mnc032.mcc460.3gppnetwork.org</IMPU>
  <ImsIsDefault>TRUE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>5</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>FALSE</ImsSessBarrInd>
  <ImsXcapAllow>FALSE</ImsXcapAllow>
  <ImsIrs>1</ImsIrs>
  <Entry name="ImsShDynInfId=ImsShDynInf">
    <CDC>1</CDC>
    <ImsShData>0025065F5D005F5E00</ImsShData>
    <objectClass>ImsShDynInf</objectClass>
    <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
  </Entry>
  <Entry name="ImsZxDynInfId=ImsZxDynInf">
    <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
    <objectClass>ImsZxDynInf</objectClass>
  </Entry>
</Entry>
<Entry name="IMPU=sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>sip:460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
  <ImsIsDefault>FALSE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>1</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>TRUE</ImsSessBarrInd>
  <ImsXcapAllow>FALSE</ImsXcapAllow>
  <ImsIrs>0</ImsIrs>
  <ImsImpuMark>1</ImsImpuMark>
  <Entry name="ImsShDynInfId=ImsShDynInf">
    <CDC>1</CDC>
    <ImsShData>0025065F5D005F5E00</ImsShData>
    <objectClass>ImsShDynInf</objectClass>
    <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
  </Entry>
  <Entry name="ImsZxDynInfId=ImsZxDynInf">
    <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
    <objectClass>ImsZxDynInf</objectClass>
  </Entry>
</Entry>
<Entry name="IMPU=sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>sip:460080100031077@ims.mnc008.mcc460.3gppnetwork.org</IMPU>
  <ImsIsDefault>FALSE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>1</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>TRUE</ImsSessBarrInd>
  <ImsXcapAllow>FALSE</ImsXcapAllow>
  <ImsIrs>1</ImsIrs>
  <Entry name="ImsShDynInfId=ImsShDynInf">
    <CDC>1</CDC>
    <ImsShData>0025065F5D005F5E00</ImsShData>
    <objectClass>ImsShDynInf</objectClass>
    <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
  </Entry>
  <Entry name="ImsZxDynInfId=ImsZxDynInf">
    <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
    <objectClass>ImsZxDynInf</objectClass>
  </Entry>
</Entry>
<Entry name="IMPU=tel:+8613400031076">
  <ImsServProfId>8613400031076</ImsServProfId>
  <IMPU>tel:+8613400031076</IMPU>
  <ImsIsDefault>TRUE</ImsIsDefault>
  <CDC>1</CDC>
  <objectClass>ImsImpu</objectClass>
  <ImsMaxNumberOfContacts>5</ImsMaxNumberOfContacts>
  <ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsSessBarrInd>FALSE</ImsSessBarrInd>
```



```

<ImsXcapAllow>FALSE</ImsXcapAllow>
<ImsIrs>1</ImsIrs>
<Entry name="ImsShDynInfId=ImsShDynInf">
  <CDC>1</CDC>
  <ImsShData>0025065F5D005F5E00</ImsShData>
  <objectClass>ImsShDynInf</objectClass>
  <ImsShDynInfId>ImsShDynInf</ImsShDynInfId>
</Entry>
<Entry name="ImsZxDynInfId=ImsZxDynInf">
  <ImsZxDynInfId>ImsZxDynInf</ImsZxDynInfId>
  <objectClass>ImsZxDynInf</objectClass>
</Entry>
</Entry>
<Entry name="ImsServProfId=8613400031076">
  <ImsServProfId>8613400031076</ImsServProfId>
  <objectClass>ImsServProf</objectClass>
  <ImsConfServProf>ics</ImsConfServProf>
  <ImsMaxSimultSess>5</ImsMaxSimultSess>
  <Entry name="ImsIndServProfId=IndividualServiceProfile1">
    <ImsIndCaps>3</ImsIndCaps>
    <ImsIndServProfId>IndividualServiceProfile1</ImsIndServProfId>
    <objectClass>ImsIndServProf</objectClass>
    <Entry name="ImsTriggId=IndividualTrigger">
      <ImsAppServ>sip:pgm@operator.com</ImsAppServ>
      <ImsTriggId>IndividualTrigger</ImsTriggId>
      <ImsNegDetecPoint>FALSE</ImsNegDetecPoint>
      <ImsInclRegResp>TRUE</ImsInclRegResp>
      <ImsTriggPrior>6</ImsTriggPrior>
      <ImsCondType>1</ImsCondType>
      <ImsInclRegReq>TRUE</ImsInclRegReq>
      <objectClass>ImsIndTrigg</objectClass>
      <ImsTriggType>9</ImsTriggType>
      <ImsSipHeader>FALSE:Event:/presence/</ImsSipHeader>
      <ImsIsActive>TRUE</ImsIsActive>
      <ImsDetecPoint>PUBLISH</ImsDetecPoint>
      <Entry name="ImsSptGroupId=1234567">
        <ImsSptGroupId>1234567</ImsSptGroupId>
        <objectClass>ImsSptGroup</objectClass>
        <ImsSessionCase>9</ImsSessionCase>
      </Entry>
    </Entry>
  </Entry>
</Entry>
<Entry name="ImsSubsId=ImsSubs">
  <ImsAssocImpi>460080100031077@ims.mnc008.mcc460.3gppnetwork.org</ImsAssocImpi>
  <ImsChargingId>8613400031076</ImsChargingId>
  <ImsSubsId>ImsSubs</ImsSubsId>
  <ImsCharProfId>DefaultChargingProfile</ImsCharProfId>
  <ImsTenantId>55</ImsTenantId>
  <ImsIsPsi>FALSE</ImsIsPsi>
  <objectClass>ImsSubs</objectClass>
  <ImsPrivacyInd>FALSE</ImsPrivacyInd>
  <Entry name="ImsCxDynInfId=ImsCxDynInf">
    <CDC>0</CDC>
    <ImsSubsData>
      40158144814280023134363030383031303030333130373740696D732E6D6E633030382
      E6D63633436302E336770706E6574776F726B2E6F72675F6A810A3A801A377369703A2B
      383631333430303033313037364067642E696D732E6D6E633033322E6D63633436302E3
      36770706E6574776F726B2E6F726738801A357369703A34363030383031303030333130
      373740696D732E6D6E633030382E6D63633436302E336770706E6574776F726B2E6F726
      715801A1274656C3A2B38363133343030303331303736
    </ImsSubsData>
    <objectClass>ImsCxDynInf</objectClass>
    <ImsCxDynInfId>ImsCxDynInf</ImsCxDynInfId>
    <ImsNumSipFailDigAut>
      460080100031077@ims.mnc008.mcc460.3gppnetwork.org$0
    </ImsNumSipFailDigAut>
    <ImsImpiImpuState>
      460080100031077@ims.mnc008.mcc460.3gppnetwork.org$tel:+8613400031076$N
    </ImsImpiImpuState>
    <ImsImpiImpuState>
      460080100031077@ims.mnc008.mcc460.3gppnetwork.org$sip:460080100031077
      @ims.mnc008.mcc460.3gppnetwork.org$N
    </ImsImpiImpuState>
    <ImsImpiImpuState>
      460080100031077@ims.mnc008.mcc460.3gppnetwork.org$sip:+8613400031076
  </Entry>
</Entry>

```



```

                                @gd.ims.mnc032.mcc460.3gppnetwork.org$N
                                </ImsImpiImpuState>
                                </Entry>
                                </Entry>
                                </Entry>
                                </Entry>
                                </Entry>
                                </Entry>
                                </Entry>
                                </Response>
                                </Result>

```

Example 8 CUDBSUE Result File

```

<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<Result xmlns="http://schemas.ericsson.com/MA/">
<Request>
<command>CUDBSUE:IMPI=
&quot;460080100031076@ims.mnc008.mcc460.3gppnetwork.org&quot;; IDENTITYONLY</command>
<starttime> 2016-01-08 05:29:30</starttime>
<jobid> 111</jobid>
</Request>
<Response xmlns="http://schemas.ericsson.com/pg/cudb/1.0/">
<Entry name="dc=com">
  <Entry name="dc=operator">
    <Entry name="ou=identities">
      <Entry name="dc=impi">
        <Entry name="IMPI=460080100031076@ims.mnc008.mcc460.3gppnetwork.org">
          <aliasedObjectName>mscId=740a160232f44b37b676f264d34c284a,
ou=multiSCs,dc=operator,dc=com</aliasedObjectName>
          <IMPI>460080100031076@ims.mnc008.mcc460.3gppnetwork.org</IMPI>
          <objectClass>IMPI</objectClass>
          <objectClass>alias</objectClass>
          <objectClass>top</objectClass>
        </Entry>
      </Entry>
    </Entry>
  </Entry>
</Entry>
</Entry>
</Response>
</Result>

```

Example 9 CUDBSUE Result File for IDENTITYONLY

6.4.3 CUDBSUE Result File Schema

For details about the CUDBSUE result file schema, see Figure 9.

6.5 CUDB Subscriber Authentication Repair Initiate (CUDBARI)

The CUDBARI command initiates an authentication repair process. It creates new complete AUC and AVG data by cloning the original subscriber authentication data. Afterwards, the new services subscription, such as HLR subscription, can be performed on the new subscriber data.

Once the authentication repair is done, the relevant identities, such as imsi, are associated with the new subscriber data. As a result, the identity cannot be used as an input key for the CUDBSUE or CUDBARI command any more.



If MSIM data exists, the `serv=CSPS` entry under the `associations` entry is checked when authentication service repair identity is IMSI. If the IMSI is active IMSI, an error is returned. It is suggested to change the active IMSI before running the `CUDBARI` command.

The `CUDBARI` command supports the rollback process to delete all newly created data if any error occurs during repair process.

If the rollback process fails, a repair error is returned with a new MSCID value. In this case, partial CUDB data exists. It is recommended to use the `CUDBSUE` command with this MSCID to delete the partial CUDB data.

The `CUDBARI` command also prints the new authentication services data that has been repaired, and it saves the results in a file. For detailed results, see Section 6.5.6 on page 44.

6.5.1 Authentication Service Repair Scenarios

The `CUDBARI` command is applicable for the following scenarios:

- The subscriber authentication service only contains AUC data.
- The subscriber authentication service only contains AVG data.
- The subscriber authentication service contains both AUC and AVG data.
- The subscriber authentication service contains AUC IMSI changeover data. In this case, there is data of two AUC services under the authentication service.
- The subscriber authentication service contains AVG IMSI changeover data. In this case, there is data of two AVG services under the authentication service.
- The subscriber authentication service contains both AUC and AVG IMSI changeover data. In this case, there is data of various combinations of AUC and AVG services under the authentication service.

Note: When the subscriber authentication service contains both AUC and AVG IMSI changeover data, `CUDBARI` does an integrity check for the service integrity. This is to find out AUC and AVG pairs that belong to the same IMSI. If no valid AUC and AVG pair is found, the repair action fails. Otherwise, repair action repairs any valid pair of AUC and AVG.

6.5.2 Authentication Service Repair Identities

The following table shows the repaired authentication service identities.

Table 11 Authentication Service Repair Identities

Repaired Authentication Service	Identities
AUC	The IMSI in the original AUC data.



Repaired Authentication Service	Identities
AVG	IMSI or IMPI, which is determined by service identities in the original AVG data.
AUC and AVG ⁽¹⁾	The IMSI in the original AUC data.

(1) To repair both AUC and AVG data. The AUC and AVG data is created under the same Auth Service entry.

6.5.3 Authentication Service Repair Procedure

The following procedure is recommended for CUDB subscriber authentication repair:

1. Run the `CUDBSUP` command to do the integrity check on the original subscriber data before repair.
2. Run the `CUDBARI` command to repair the authentication data from the original subscriber data. If error occurs, follow the error handling process of authentication service repair (see Table 12).
3. Remove the original subscriber data.

The original subscriber data can be deleted with the `CUDBSUE` command after authentication service repair is successfully completed.

Note:

- The authentication service repair identities are not applicable for the original subscriber data any more.

For details on the input key of the `CUDBSUE` command, refer to the `CUDBSUP` result in Step 1.

- If the original subscriber has MSIM data, the `msisdn` and `secmsisdn` identities are not applicable for this subscriber data any more. It is recommended to use other input parameters, for example MSCID, to remove the subscriber data completely.

6.5.4 Authentication Service Repair Error Handling

When error occurs during the repair procedure, follow the error handling process in Table 12.

Table 12 Authentication Service Repair Error Handling Process

Error Code	Error Message	Error Description	Error Handling Process
12120	Repair cannot be performed	Authentication service cannot be repaired.	Cannot perform retry.
12121	Repair failure, rollback success	Error occurs during repair and rollback process succeeds.	Perform retry after the external CUDB fault is fixed.



Error Code	Error Message	Error Description	Error Handling Process
12122	Repair partial execution, rollback failure	Error occurs during repair and rollback process fails.	Execute CUDBSUE with the new MSCID in error details to delete partial repair data. Then perform retry after the external CUDB fault is fixed.
12123	Repair partial success	For IMSI changeover scenario, an authentication service pair with one IMSI is repaired successfully. The repair of the authentication service pair with the other IMSI cannot be performed.	Cannot perform retry.
12124	Repair partial success, rollback success	For IMSI changeover scenario, an authentication service pair with one IMSI is repaired successfully. Error occurs when the repair of the authentication service pair with the other IMSI and rollback process succeeds.	Perform retry after the external CUDB fault is fixed.
12125	Repair partial success, rollback failure	For IMSI changeover scenario, an authentication service pair with one IMSI is repaired successfully. Error occurs when the repair of authentication service pair with the other IMSI and rollback process fails.	Execute CUDBSUE with the new MSCID in error details to delete partial repair data. Then perform retry after the external CUDB fault is fixed.

6.5.5

CUDBARI Request

The command description is as follows:

```
CUDBARI : /
          | IMSI=imsi
          +MSISDN=msisdn
          | MSCID=mscid
          | IMPI=impi
          | SECMSISDN=secMsisdn
          \
          \
          +;
```

Note: If the type of the input key value is string, the value must be enclosed in double quotation marks.

CUDBARI : IMSI=123456789012345 ;

Example 10 CUDBARI command



In the this example, all authentication data related to the IMSI number 123456789012345 is repaired.

```
CUDBARI:IMPI="sip:2800000001@ims.mnc08.mcc280.3gppnetwork.org";
```

Example 11 CUDBARI command

In the this example, all authentication data related to the IMPI number sip:2800000001@ims.mnc08.mcc280.3gppnetwork.org is repaired.

Table 13 Attributes Definition of CUDBARI Command

Parameter	Type	Description
IMSI	Digit string 6–15 digits. Each digit is 0–9.	International Mobile Subscriber Identity.
MSISDN	Digit string 5–15 digits. Each digit is 0–9.	Mobile Subscriber ISDN Number
MSCID	String characters	The unique ID for the MultiServiceConsumer parameter
IMPI	String characters Minimum length: 5 Maximum length: 70	The IMS private user identity
SECMSISDN	Digit string 5–15 digits. Each digit is 0–9.	Mobile Subscriber ISDN Number

6.5.6

CUDBARI Result File

Commands with potential large responses save their results in a file. The file can be found in the directory `/var/dve/cli/` on the server where the command is run. Log in as `dvecli` to access the file.

Note: The CUDB subscription data is recorded in the file. It is recommended to delete the data manually once the data correction is done because the output file can contain sensitive subscriber data.

The following example shows the result of CUDBARI for service HLR. The result XML message of each service is not in sequential order.

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<Result xmlns="http://schemas.ericsson.com/MA/">
  <Request>
    <command>CUDBARI:IMSI=460080100031076</command>
    <starttime>2016-09-28 13:19:01</starttime>
    <jobid>81</jobid>
  </Request>
  <Response xmlns="http://schemas.ericsson.com/pg/cudb/1.0/">
    <Entry name="dc=com">
      <Entry name="dc=operator">
        <Entry name="ou=identities">
          <Entry name="dc=imsi">
            <Entry name="IMSI=460080100031076">
              <IMSI>460080100031076</IMSI>
              <aliasedObjectName>
                mscId=ccf6cce2e8d9402aade9fdbf17792b27,ou=multiSCs,dc=operator,dc=com
              </aliasedObjectName>
              <objectClass>IMSI</objectClass>
            </Entry>
          </Entry>
        </Entry>
      </Entry>
    </Response>
  </Result>
```




```

    <objectClass>alias</objectClass>
  </objectClass>top</objectClass>
</Entry>
<Entry name="IMSI=460080100031077">
  <IMSI>460080100031077</IMSI>
  <aliasedObjectName>
    mscId=18fef1588a7b4dc39243c8816c601d40,ou=multiSCs,dc=operator,dc=com
  </aliasedObjectName>
  <objectClass>IMSI</objectClass>
  <objectClass>alias</objectClass>
  <objectClass>top</objectClass>
</Entry>
</Entry>
<Entry name="ou=multiSCs">
  <Entry name="mscId=ccf6cce2e8d9402aade9fdbf17792b27">
    <mscId>ccf6cce2e8d9402aade9fdbf17792b27</mscId>
    <objectClass>CUDBMultiServiceConsumer</objectClass>
    <objectClass>top</objectClass>
    <Entry name="serv=AAA">
      <objectClass>top</objectClass>
      <objectClass>CUDBService</objectClass>
      <serv>AAA</serv>
    </Entry>
    <Entry name="serv=Auth">
      <objectClass>CUDBService</objectClass>
      <objectClass>top</objectClass>
      <serv>Auth</serv>
      <Entry name="AvgStaInfId=AvgStaInf">
        <AvgA4KeyInd>111</AvgA4KeyInd>
        <CDC>1</CDC>
        <AvgEncryptedK>24AAAFF8787695BCCF4376BBFFC4000</AvgEncryptedK>
        <AvgFSetInd>11</AvgFSetInd>
        <objectClass>top</objectClass>
        <objectClass>AvgStaticInf</objectClass>
        <AvgEncryptedOPC>24AAAFF8787695BCCF4376BBFFC4000</AvgEncryptedOPC>
        <AvgAmf>AACD</AvgAmf>
        <AvgStaInfId>AvgStaInf</AvgStaInfId>
        <Entry name="AvgDynInfId=AvgDynInf">
          <objectClass>top</objectClass>
          <objectClass>AvgDynInf</objectClass>
          <AvgDynInfId>AvgDynInf</AvgDynInfId>
        </Entry>
      </Entry>
    <Entry name="IMSI=460080100031076">
      <AMFVALUE>15</AMFVALUE>
      <EKI>1234567890ABCDEF1234567890ABCDEF</EKI>
      <objectClass>top</objectClass>
      <objectClass>AU1</objectClass>
      <BNS>15</BNS>
      <GAPSIGN>15</GAPSIGN>
      <SQNP>15</SQNP>
      <KIND>509</KIND>
      <FSETIND>15</FSETIND>
      <AKAALGIND>15</AKAALGIND>
      <GAP>FFFFFFFFFFFFFF</GAP>
      <CDC>0</CDC>
      <SQN>15</SQN>
      <IMSI>460080100031076</IMSI>
      <A3A8IND>2</A3A8IND>
      <SQNCS>15</SQNCS>
      <AKATYPE>0</AKATYPE>
      <VNUMBER>0</VNUMBER>
      <SQNIMS>15</SQNIMS>
      <A4IND>1</A4IND>
    </Entry>
  </Entry>
  <Entry name="serv=Identities">
    <IMSI>460080100031076</IMSI>
    <CDC>0</CDC>
    <imsiMask>'0000000000110000'B</imsiMask>
    <objectClass>top</objectClass>
    <objectClass>CUDBService</objectClass>
    <objectClass>mscIdentities</objectClass>
    <serv>Identities</serv>
  </Entry>

```



```

</Entry>
<Entry name="mscId=18fef1588a7b4dc39243c8816c601d40">
  <mscId>18fef1588a7b4dc39243c8816c601d40</mscId>
  <objectClass>CUDBMultiServiceConsumer</objectClass>
  <objectClass>top</objectClass>
  <Entry name="serv=AAA">
    <objectClass>top</objectClass>
    <objectClass>CUDBService</objectClass>
    <serv>AAA</serv>
  </Entry>
  <Entry name="serv=Auth">
    <objectClass>CUDBService</objectClass>
    <objectClass>top</objectClass>
    <serv>Auth</serv>
    <Entry name="AvgStaInfId=AvgStaInf">
      <AvgA4KeyInd>222</AvgA4KeyInd>
      <CDC>1</CDC>
      <AvgEncryptedK>24AAAFF8787695BCCF4376BBFFC4001</AvgEncryptedK>
      <AvgFSetInd>12</AvgFSetInd>
      <objectClass>AvgStaticInf</objectClass>
      <objectClass>top</objectClass>
      <AvgEncryptedOPc>24AAAFF8787695BCCF4376BBFFC4001</AvgEncryptedOPc>
      <AvgAmf>AACD</AvgAmf>
      <AvgStaInfId>AvgStaInf</AvgStaInfId>
      <Entry name="AvgDynInfId=AvgDynInf">
        <objectClass>top</objectClass>
        <objectClass>AvgDynInf</objectClass>
        <AvgDynInfId>AvgDynInf</AvgDynInfId>
      </Entry>
    </Entry>
  </Entry>
  <Entry name="IMSI=460080100031077">
    <AMFVALUE>15</AMFVALUE>
    <EKI>1134567890ABCDEF1234567890ABCDEF</EKI>
    <objectClass>top</objectClass>
    <objectClass>AU1</objectClass>
    <BNS>15</BNS>
    <GAPSIGN>15</GAPSIGN>
    <SQNPS>15</SQNPS>
    <KIND>509</KIND>
    <FSETIND>15</FSETIND>
    <AKAALGIND>15</AKAALGIND>
    <GAP>FFFFFFFFFFFF</GAP>
    <CDC>0</CDC>
    <SQN>15</SQN>
    <IMSI>460080100031077</IMSI>
    <A3A8IND>2</A3A8IND>
    <SQNCS>15</SQNCS>
    <AKATYPE>0</AKATYPE>
    <VNUMBER>0</VNUMBER>
    <SQNIMS>15</SQNIMS>
    <A4IND>1</A4IND>
  </Entry>
</Entry>
<Entry name="serv=Identities">
  <IMSI>460080100031077</IMSI>
  <CDC>0</CDC>
  <imsiMask>'0000000000110000'B</imsiMask>
  <objectClass>top</objectClass>
  <objectClass>CUDBService</objectClass>
  <objectClass>mscIdentities</objectClass>
  <serv>Identities</serv>
</Entry>
</Entry>
</Entry>
</Entry>
</Response>
</Result>

```

Example 12 CUDBARI Result File



6.5.7 CUDBARI Result File Schema

For details about the CUDBARI result file schema, see Figure 9.

6.6 Command Mapped Errors

The CLI error codes can occur directly both in the prompt and in the result files. Besides the generic and common error codes, the CLI commands can also return some more specific error codes. This section covers the CUDBSUP, CUDBSUE, and CUDBARI errors that are mapped towards certain commands. The errors are listed along with the commands that can return them.

Table 14 CUDBSUP, CUDBSUE, and CUDBARI Errors

Error Code	Error Message	Command
12001	IDENTIFIER NOT DEFINED	CUDBSUP, CUDBSUE, and CUDBARI
12110	INPUT IDENTITY IS AMSISDN	CUDBSUE and CUDBARI
12100	OTHER SERVICE DATA FOUND BESIDES HLR, EPS AND AUC	CUDBSUE
12112	PARTIAL EXECUTION	
12113	MASTER MSISDN OR ACTIVE SUBS IS NOT SUPPORTED	
12120	REPAIR CANNOT BE PERFORMED	CUDBARI
12121	REPAIR FAILURE, ROLLBACK SUCCESS	
12122	REPAIR PARTIAL EXECUTION, ROLLBACK FAILURE	
12123	REPAIR PARTIAL SUCCESS	
12124	REPAIR PARTIAL SUCCESS, ROLLBACK SUCCESS	
12125	REPAIR PARTIAL SUCCESS, ROLLBACK FAILURE	



```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<Result xmlns="http://schemas.ericsson.com/MA/">
  <Request>
    <command>CUDBARI:MSISDN=8613400031076</command>
    <starttime>2016-09-28 13:30:14</starttime>
    <jobid>82</jobid>
  </Request>
  <Response xmlns="http://schemas.ericsson.com/pg/cudb/1.0/">
  </Response>
  <Fault>
    <code>12120</code>
    <message>REPAIR CANNOT BE PERFORMED</message>
    <additionalinfo>IMSI=460080100031076 Auth repair can't be performed due to:
      The alias of imsi: 460080100031076 refer to another mscId: 5ce4e308e9db4bbea6cd91c7f0dc555
      IMSI=460080100031077 Auth repair can't be performed due to: The alias of imsi:
      460080100031077 refer to another mscId: ea6dc17cdca54fed86d56d15aa447d10.
    </additionalinfo>
  </Fault>
</Result>
```

Example 13 Mapped Errors

6.7 Access Control

Access control is available for the CUDB repair commands.

For details of access control, refer to *User Guide for Resource Activation*, Reference [10].



Reference List

Ericsson Documents

- [1] *Library Overview*, 18/1553-CSH 109 628 Uen
- [2] *Function Specification Resource Activation*, 3/155 17-CSH 109 628 Uen
- [3] *Layered HLR AUC Subscription Repair and Remove Actions over CAI3G*, 7/155 19-CSH 109 628 Uen
- [4] *Event and Alarm Handling*, 3/1553-CSH 109 628 Uen
- [5] *Layered EIR Provisioning over CAI3G*, 18/155 19-CSH 109 628 Uen
- [6] *Layered IPWorks/AAA Provisioning over CAI3G*, 19/155 19-CSH 109 628 Uen
- [7] *UDC Data Model Description*, 4/1550-HSC 113 08/5 Uen
- [8] *Generic CLI Interface Specification*, 15/155 19-CSH 109 628 Uen
- [9] *SAPC Provisioning over CAI3G*, 20/155 19-CSH 109 628 Uen
- [10] *User Guide for Resource Activation*, 1/1553-CRH 109 1438 Uen
- [11] *Configuration Manual for Resource Activation*, 20/155 19-CSH 109 628 Uen