

# Layered HLR AUC Massive Operations over CLI

Ericsson Dynamic Activation 1

---

## INTERFACE DESCRIPTION

**Copyright**

© Ericsson AB 2017. All rights reserved. No part of this document may be reproduced in any form without the written permission of the copyright owner.

**Disclaimer**

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.

**Trademark List**

All trademarks mentioned herein are the property of their respective owners. These are shown in the document Trademark Information.



# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Purpose and Scope	1
1.2	Target Group	1
1.3	Typographic Conventions	1
<b>2</b>	<b>AUC Conditional Search Commands</b>	<b>3</b>
2.1	Print Authentication and Key Agreement Algorithm (AEMSAAP)	3
2.1.1	AEMSAAP Request	3
2.1.2	AEMSAAP Result File Schema	4
2.2	Print Subscription State (AEMSSSP)	5
2.2.1	AEMSSSP Request	5
2.2.2	AEMSSSP Result File Schema	6
2.3	Print Subscription (AEMSSUP)	6
2.3.1	AEMSSUP Request	7
2.3.2	AEMSSUP Result File Schema	7
<b>3</b>	<b>HLR Conditional Search Commands</b>	<b>9</b>
3.1	Print Access Point Name (HEMSAPP)	10
3.1.1	HEMSAPP Request	11
3.1.2	HEMSAPP Result File Schema	12
3.2	Print CAMEL Subscription List (HEMSCMP)	13
3.2.1	HEMSCMP Request	14
3.2.2	HEMSCMP Result File Schema	15
3.3	Print Extended Quality of Service (HEMSEQP)	25
3.3.1	HEMSEQP Request	26
3.3.2	HEMSEQP Result File Schema	27
3.4	Print Location Services Address (HEMSGLP)	31
3.4.1	HEMSGLP Request	31
3.4.2	HEMSGLP Result File Schema	33
3.5	Print GSM Service Control Function Address (HEMSGSP)	36
3.5.1	HEMSGSP Request	36
3.5.2	HEMSGSP Result File Schema	38
3.6	Print IMSI Changeover (HEMSICP)	39
3.6.1	HEMSICP Request	39
3.6.2	HEMSICP Result File Schema	40
3.7	Print Subscriber Location Services Data (HEMSLDP)	41
3.7.1	HEMSLDP Request	41
3.7.2	HEMSLDP Result File Schema	42
3.8	Print Conditional Subscriber List (HEMSLIP)	46



3.8.1	HEMSLIP Request	46
3.8.2	HEMSLIP Result File Schema	47
3.9	Print Monitoring Call Forwarding Registration Data (HEMSMRP)	49
3.9.1	HEMSMRP Request	49
3.9.2	HEMSMRP Result File Schema	50
3.10	Print Multiple Subscription Data (HEMSMSP)	51
3.10.1	HEMSMSP Request	51
3.10.2	HEMSMSP Result File Schema	51
3.11	Print Subscriber PDP Context (HEMSPDP)	52
3.11.1	HEMSPDP Request	53
3.11.2	HEMSPDP Result File Schema	53
3.12	Print PDP Context Profile (HEMSPPP)	55
3.12.1	HEMSPPP Request	55
3.12.2	HEMSPPP Result File Schema	56
3.13	Print Service Center Survey (HEMSSCP)	57
3.13.1	HEMSSCP Request	57
3.13.2	HEMSSCP Result File Schema	58
3.14	Print Subscriber Data (HEMSSDP)	58
3.14.1	HEMSSDP Request	59
3.14.2	HEMSSDP Result File Schema	60
3.15	Print Subscriber Location Services Address (HEMSSGP)	65
3.15.1	HEMSSGP Request	65
3.15.2	HEMSSGP Result File Schema	66
3.16	Print Subscriber Tracing (HEMSSTP)	68
3.16.1	HEMSSTP Request	68
3.16.2	HEMSSTP Result File Schema	68
3.17	Print PRP Data (HESDCDP)	70
3.17.1	HESDCDP Request	70
3.17.2	HESDCDP Result File Schema	71
3.18	Print Subscriber Roaming Data (HEMSRLP)	73
3.18.1	HEMSRLP Request	73
3.18.2	HEMSRLP Result File Schema	74
3.19	Print Subscribers Location Based on Geographic Area (HEMSSLP)	75
3.19.1	HEMSSLP Request	75
3.19.2	HEMSSLP Result File Schema	76
<b>4</b>	<b>MNP Conditional Search Commands</b>	<b>79</b>
4.1	Print MNP Subscriber Data (HEMSNTP)	79
4.1.1	HEMSNTP Request	80
4.1.2	HEMSNTP Result File Schema	81
<b>5</b>	<b>AUC Massive Update Commands</b>	<b>83</b>
5.1	Change Authentication and Key Agreement Algorithm (AEMSAAC)	83



5.1.1	AEMSAAC Request	83
5.1.2	AEMSAAC Result File Schema	84
5.2	Change Subscription (AEMSSUC)	86
5.2.1	AEMSSUC Request	87
5.2.2	AEMSSUC Result File Schema	87
<b>6</b>	<b>HLR Massive Update Commands</b>	<b>91</b>
6.1	Initiate Massive Change of Subscriber Data (HEMSMCI)	91
6.1.1	HEMSMCI Request	92
6.1.2	HEMSMCI Result File Schema	93
6.1.3	SUD and NEWSUD Rules for HEMSMCI	95
6.2	End Monitoring Call Forwarding Registration (HEMSMRE)	96
6.2.1	HEMSMRE Request	96
6.2.2	HEMSMRE Result File Schema	97
6.3	Initiate Monitoring Call Forwarding Registration (HEMSMRI)	99
6.3.1	HEMSMRI Request	99
6.3.2	HEMSMRI Result File Schema	100
6.4	Massive Change of Primary HLR Identity (HEMSPIC)	102
6.4.1	HEMSPIC Request	102
6.4.2	HEMSPIC Result File Schema	103
<b>7</b>	<b>Faults or Errors</b>	<b>107</b>
7.1	General CLI Errors	107
7.2	Command Mapped Errors	107
7.3	HLR Errors	108
7.4	AUC Errors	110
<b>8</b>	<b>Appendix - HLR Classic and HLR-FE Layered Incompatibilities</b>	<b>113</b>
	<b>Reference List</b>	<b>115</b>





# 1 Introduction

This document covers the massive operations available through the Ericsson™ Dynamic Activation (EDA) Command Line Interface (CLI).

## 1.1 Purpose and Scope

This document describes the layered Home Location Register (HLR-FE), layered Authentication Center (AUC-FE), Mobile Number Portability (MNP), feature in the HLR-FE product, conditional search commands, and massive update commands.

How to use these commands is covered in the document *Generic CLI Interface Specification*, Reference [1].

## 1.2 Target Group

The target group for this document is as follows:

- System Integrator
- Network Administrator

## 1.3 Typographic Conventions

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

In addition to the writing conventions mentioned above, the following applies:

- HLR-FE is referred to as HLR throughout this document.
- AUC-FE is referred to as AUC throughout this document.

For information about glossary and terms throughout this document, see *Glossary of Terms and Acronyms*, Reference [2].







## 2 AUC Conditional Search Commands

This section covers all AUC conditional search commands available through the Dynamic Activation CLI. All Conditional Search commands generate response files, rather than printing the answer directly to the client.

The following AUC search commands are available:

- Print Authentication and Key Agreement Algorithm (AEMSAAP), see Section 2.1 on page 3
- Print Subscription State (AEMSSSP), see Section 2.2 on page 5
- Print Subscription (AEMSSUP), see Section 2.3 on page 6

### 2.1 Print Authentication and Key Agreement Algorithm (AEMSAAP)

The Authentication and Key Agreement Algorithm Data CLI allows requesting of the following information:

- The Encrypted Subscriber Authentication Key (Ki), the Authentication Management Field (AMF), the A4 Key indicator, the Function set indicator, the A4 algorithm indicator, and Authentication and Key Agreement (AKA) algorithm indicator for subscribers belonging to an IMSI number series.

#### 2.1.1 AEMSAAP Request

Command Description:

```
AEMSAAP:IMSiS=imsis[,RID=rid...]
```

#### Example of an AEMSAAP command

```
AEMSAAP:IMSiS=349133921;
```

This CLI command obtains the Authentication and Key Agreement Algorithm Data for subscribed IMSI numbers of the IMSI series 349133921.

The following table explains the attributes that can be used in a AEMSAAP request.

**Table 1** *Command Attributes*

Attribute	Type	Description
IMSI	Digit String, 1-15 digits Each digit is 0-9.	IMSI number series  The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
RID	Numeral 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 2.1.2

### AEMSAAP Result File Schema

The following is a result file schema for AEMSAAP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/auc/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="AKAAlgorithmSubscriptionData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="AKAAlgorithmSubscription"
minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="imsi" type="xs:string" />
              <xs:element name="eki" type="xs:string" />
              <xs:element name="amf" type="xs:integer" />
              <xs:element name="kind" type="xs:integer" />
              <xs:element name="fsetind" type="xs:integer" />
              <xs:element name="a4ind" type="xs:integer" />
              <xs:element name="akaalgind" type="xs:string" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a AEMSAAP response.

**Table 2** *Result Attributes*

Attribute	Type	Description
a4ind	Integer 0-7	A4 algorithm indicator
akaalgind	One of the following text strings: <ul style="list-style-type: none"><li>• "1"</li><li>• "2"</li><li>• "N/A"</li></ul>	Authentication and Key Agreement (AKA) algorithm indicator
amf	Integer 0-65535	Authentication Management Field (AMF)
eki	Text string of 32 characters Each character is digit 0-9 or letter A to F.	Encrypted Subscriber Authentication Key
fsetind	Integer 0-31	Function set indicator



Attribute	Type	Description
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
kind	Integer 0-511	A4 key indicator

## 2.2 Print Subscription State (AEMSSSP)

The Authentication Center Subscription State CLI allows requesting of the following information:

- The IMSI numbers of all mobile subscribers with either GSM or UMTS Authentication and Key Agreement (AKA) type given as condition in the CLI.
- The IMSI numbers of the mobile subscribers belonging to an IMSI number series with either GSM or UMTS AKA type given as condition in the CLI.

### 2.2.1 AEMSSSP Request

Command Description:

$$\text{AEMSSSP:} \left\{ \begin{array}{l} \text{IMSI}=\text{imsi} \\ \text{IMSIALL} \end{array} \right\}, \text{AKATYPE}=\text{akatype}[, \text{RID}=\text{rid} \dots];$$

#### Example of an AEMSSSP command

AEMSSSP: IMSIALL, AKATYPE=0;

This CLI command obtains all subscribed IMSI numbers with GSM AKA type.

The following table explains the attributes that can be used in a AEMSSSP request.

*Table 3 Command Attributes*

Attribute	Type	Description
AKATYPE	Integer 0-1 0 = GSM 1 = UMTS	Authentication and Key Agreement (AKA) type
IMSIALL	This parameter has no value.	If IMSIALL is used, all IMSI with initiated trace data is printed.



Attribute	Type	Description
IMSI	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series  The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 2.2.2 AEMSSSP Result File Schema

The following is a result file schema for AEMSSSP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.ericsson.com/pg/auc/13.5/" elementFormDefault="qualified"
  attributeFormDefault="qualified">
  <xs:element name="SubscriptionStatusData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="akatype" type="xs:integer" />
        <xs:element name="imsi" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a AEMSSSP response.

*Table 4 Result Attributes*

Attribute	Type	Description
akatype	Integer 0-1 0 = GSM 1 = UMTS	Authentication and Key Agreement (AKA) type
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity

## 2.3 Print Subscription (AEMSSUP)

The Authentication Center Subscription CLI allows requesting of the following information:

- The Encrypted Subscriber Authentication Key (Ki), the A3/A8 algorithm indicator or Function set indicator, the A4 Key indicator, the A4 algorithm indicator, and the Authentication Management Field (AMF) for subscribers belonging to an IMSI number series with either GSM or UMTS or both AKA type.
- The Encrypted Subscriber Authentication Key (Ki), the A3/A8 algorithm indicator or Function set indicator, the A4 Key indicator, the A4 algorithm



indicator, and the Authentication Management Field (AMF) for all IMSI numbers with either GSM or UMTS or both AKA type.

### 2.3.1 AEMSSUP Request

Command Description:

```
AEMSSUP: [ IMSIS=imsis
            ], AKATYPE=akatype[, RID=rid...];
           IMSIALL
```

#### Example of an AEMSSUP command

```
AEMSSUP: IMSIS=349133921, AKATYPE=0;
```

This CLI command obtains the subscription data for subscribers belonging to the IMSI series 349133921 with GSM AKA type

The following table explains the attributes that can be used in a AEMSSUP request.

*Table 5 Command Attributes*

Attribute	Type	Description
AKATYPE	Integer 0-1 0 = GSM 1 = UMTS	Authentication and Key Agreement (AKA) type
IMSIALL	This parameter has no value.	If <code>IMSIALL</code> is used, all IMSI with authentication subscription data is printed.
IMSIS	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series  The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 2.3.2 AEMSSUP Result File Schema

The following is a result file schema for AEMSSUP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/auc/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="SubscriptionData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="akatype" type="xs:integer" />
        <xs:element name="Subscription" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="imsi" type="xs:string" />
              <xs:element name="eki" type="xs:string" />
              <xs:element name="kind" type="xs:integer" />
              <xs:choice>
                <xs:element name="a3a8ind" type="xs:integer" />
                <xs:element name="fsetind" type="xs:integer" />
              </xs:choice>
              <xs:element name="a4ind" type="xs:integer" />
              <xs:element name="amf" type="xs:integer" minOccurs="0" />
              <xs:element name="rid" type="xs:integer" minOccurs="0" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a AEMSSUP response.

**Table 6** Result Attributes

Attribute	Type	Description
a3a8ind	Integer 0-15	A3 and A8 algorithm indicator
a4ind	Integer 0-7	A4 algorithm indicator
akatype	Integer 0-1 0 = GSM 1 = UMTS	Authentication and Key Agreement type
amf	Integer 0-65535	Authentication Management Field (AMF)
eki	Text string of 32 characters Each character is digit 0-9 or letter A to F.	Encrypted Subscriber Authentication Key
fsetind	Integer 0-31	Function set indicator
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
kind	Integer 0-511	A4 key indicator
rid	Integer 0-31	Region Identifier



## 3 HLR Conditional Search Commands

The following HLR search commands are available in Dynamic Activation. For standard subscribers, all subscriber-related commands are supported.

- Print Access Point Name (HEMSAPP), see Section 3.1 on page 9
- Print CAMEL Subscription List (HEMSCMP), see Section 3.2 on page 13
- Print Extended Quality of Service (HEMSEQP), see Section 3.3 on page 25
- Print Location Services Address (HEMSGLP), see Section 3.4 on page 31
- Print GSM Service Control Function Address (HEMSGSP), see Section 3.5 on page 36
- Print IMSI Changeover Data (HEMSICP), see Section 3.6 on page 39
- Print Subscriber Location Services Data (HEMSLDP), see Section 3.7 on page 41
- Print Conditional Subscriber List (HEMSLIP), see Section 3.8 on page 46
- Print Monitoring Call Forwarding Registration Data (HEMSMRP), see Section 3.9 on page 49
- Print Multiple Subscription Data (HEMSMSP), see Section 3.10 on page 51
- Print Subscriber PDP Context (HEMSPDP), see Section 3.11 on page 52
- Print PDP Context Profile (HEMSPPP), see Section 3.12 on page 55
- Print Service Center Survey (HEMSSCP), see Section 3.13 on page 57
- Print Subscriber Data (HEMSSDP), see Section 3.14 on page 58
- Print Subscriber Location Services Address (HEMSSGP), see Section 3.15 on page 64
- Print Subscriber Tracing (HEMSSTP), see Section 3.16 on page 68
- Print PRP Data (HESDCDP), see Section 3.17 on page 70
- Print Subscriber Roaming Data (HEMSRLP), see Section 3.18 on page 73
- Print Subscribers Location Based on Geographic Area (HEMSSLP), see Section 3.19 on page 75

## 3.1 Print Access Point Name (HEMSAPP)

The Access Point Name CLI allows requesting the information as follows for standard subscribers and M2M subscribers.

When neither APN or APNID is included in the request:

- The MSISDN and the IMSI of mobile subscribers that use a Non-subscribed Access Point Name (APN) in any of their PDP-Contexts either directly assigned to the subscriber or through a PDP context profile.
- The MSISDN and the IMSI of mobile subscribers belonging to an MSISDN number series that use a Non-subscribed APN in any of their PDP-Contexts either directly assigned to the subscriber or through a PDP context profile.

When APNID is included in the request:

- The MSISDN and the IMSI of mobile subscribers that use an APN identifier in any of their PDP contexts either directly assigned to the subscriber or through a PDP context profile.
- The MSISDN and the IMSI of mobile subscribers belonging to an MSISDN number series that use an APN identifier in any of their PDP contexts either directly assigned to the subscriber or through a PDP context profile.

When APN is included in the request:

- The MSISDN and the IMSI number of the mobile subscribers that use an APN (Dynamic Activation first fetch the APNID from the HLR server before this search is initiated), in any of their PDP contexts either directly assigned to the subscriber or through a PDP context profile.
- The MSISDN and the IMSI number belonging to an MSISDN number series of the mobile subscribers that use an APN (Dynamic Activation first fetch the APNID from the HLR server before this search is initiated), in any of their PDP contexts either directly assigned to the subscriber or through a PDP context profile.

The Access Point Name CLI allows requesting the information as follows for M2M Service Profile subscribers.

When neither APN or APNID is included in the request:

- The MSISDN and the IMSI of mobile subscribers with a M2M Service Profile referring to a PDP context profile which includes a Non-subscribed Access Point Name (APN).
- The MSISDN and the IMSI of mobile subscribers belonging to an MSISDN number series with a M2M Service Profile referring to a PDP context profile which includes a Non-subscribed APN.

When APNID is included in the request:





- The MSISDN and the IMSI of mobile subscribers with a M2M Service Profile referring to a PDP context profile which includes an APN identifier.
- The MSISDN and the IMSI of mobile subscribers belonging to an MSISDN number series with a M2M Service Profile referring to a PDP context profile which includes an APN identifier.

When APN is included in the request:

- The MSISDN and the IMSI of mobile subscribers with a M2M Service Profile referring to a PDP context profile which includes an APN (Dynamic Activation first fetch the APNID from the HLR server before this search is initiated).
- The MSISDN and the IMSI of mobile subscribers belonging to an MSISDN number series with a M2M Service Profile referring to a PDP context profile which includes, san APN (Dynamic Activation first fetch the APNID from the HLR server before this search is initiated)

The Access Point Name CLI allows requesting the information as follows for PDP context profiles.

When neither APN or APNID is included in the request:

- The PDP context profiles including a PDP context with a non-subscribed APN and the corresponding PDP context identifier.

When APNID is included in the request:

- The PDP context profiles that use an APN identifier in any of their PDP contexts.

When APN is included in the request:

- The PDP context profile that uses an APN in any of their PDP contexts.

### 3.1.1

## HEMSAPP Request

Command Description:

$$\text{HEMSAPP:} \left[ \begin{array}{l} \text{APN=apn,} \\ \text{APNID=apnid,} \end{array} \right] \left[ \begin{array}{l} \text{MSISDNALL[,RID=rid...]} \\ \text{MSISDNS=msisdns[,RID=rid...]} \\ \text{PDPCPS} \end{array} \right];$$

### Example of a HEMSAPP command

```
HEMSAPP:APN="ERICSSON.COM",MSISDNS=349133921;
```



This CLI command obtains the MSISDN and the IMSI of mobile subscribers belonging to MSISDN number series 349133921 using the APN 'ERICSSON.COM' in any of their PDP contexts (directly assigned to the subscriber or by a profile).

The following table explains the attributes that can be used in a HEMSAPP request:

*Table 7 Command Attributes*

Attribute	Type	Description
APN	Text string, 1-62 characters  The entered APN must be compliant with the following syntax: <ul style="list-style-type: none"><li>• The APN consists of one or more labels separated with dots. Each label must start with a letter or a digit, end with a letter or a digit, and have as criteria characters only letters, digits, and hyphens.</li><li>• APN must not start with the text RAC, LAC, SGSN, or RNC</li><li>• APN must not end in .GPRS.</li></ul>	Access Point Name (APN)
APNID	Integer 0-16383	APN Identifier
MSISDNALL	This parameter has no value.	If given, all subscribers using the entered APN data are fetched
MSISDNS	Digit string, 1-15 digits  Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
PDPAPS	This parameter has no value.	PDP context profiles using the requested APN
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.1.2 HEMSAPP Result File Schema

The following is a result file schema for HEMSAPP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="AccessPointNameData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="AccessPointName" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="MobileSubscriber" minOccurs="0" maxOccurs="unbounded">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="msisdn" type="xs:string" />
        <xs:element name="imsi" type="xs:string" />
        <xs:element name="pdpcp" type="xs:integer" minOccurs="0" />
        <xs:element name="pdpid" type="xs:integer" minOccurs="0" maxOccurs="unbounded" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="PDPContextProfile" minOccurs="0" maxOccurs="unbounded">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="pdpcp" type="xs:integer" />
        <xs:element name="pdpid" type="xs:integer" maxOccurs="unbounded" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSAPP response.

**Table 8** Result Attributes

Attribute	Type	Description
apn	Text string of up to 62 characters	Access Point Name
apnid	Integer 0-16383	APN identifier
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International PSTN/ISDN Number
pdpcp	Integer 0-8160	PDP context profile
pdpid	Integer 1-50	PDP context identifier

## 3.2 Print CAMEL Subscription List (HEMSCMP)

The CAMEL Subscription List CLI allows requesting of the following information:



- CAMEL subscription data, CAMEL subscription options, extended CAMEL data and CAMEL triggering criteria for all CAMEL Subscription Profiles having any CAMEL subscription data.
- CAMEL subscription data and optionally either CAMEL subscription options or extended CAMEL data or CAMEL triggering criteria or any combination of them for all CAMEL Subscription Profiles having any CAMEL subscription data.
- The MSISDN numbers of the mobile subscribers having assigned any CAMEL subscription profile.
- The MSISDN numbers of the mobile subscribers belonging to an MSISDN number series having assigned any CAMEL subscription profile.
- The CAMEL Subscription Profiles with one or several specific CAMEL Subscription Information (CSI).
- Subscriber-based CAMEL subscription data, CAMEL subscription options, Extended CAMEL Data, CAMEL Triggering Criteria Data, for all subscribers containing any CAMEL subscription data.

### 3.2.1 HEMSCMP Request

Command Description:

```
HEMSCMP: [ MSISDNALL [,RID] [,OPT] [,EXT] [,CRIT]
           MSISDNS=msisdns [,RID] [,OPT] [,EXT] [,CRIT]
           CSPALL [,OPT] [,EXT] [,CRIT]
           CPD=cpd... ]+;
```

**Note:** Up to eight CPDs can be included in this command.

#### Example of a HEMSCMP command

```
HEMSCMP: CSPALL, OPT, EXT;
```

This CLI command obtains CAMEL subscription data, extended CAMEL data, and CAMEL subscription options of all CAMEL subscription profiles containing any CAMEL subscription data.

The following table explains the attributes that can be used in a HEMSCMP request:



Table 9 Command Attributes

Attribute	Type	Description
CPD	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6]	CAMEL profile data
CRIT	This parameter has no value.	CAMEL triggering criteria
CSPALL	This parameter has no value.	All CAMEL subscription profiles with CAMEL subscription data
EXT	This parameter has no value.	Extended CAMEL data
MSISDNALL	This parameter has no value.	When this attribute is present, all subscribers and subscriber-based CAMEL subscription data are fetched
MSISDNS	Digit string, 1–15 digits Each digit is 0–9.	MSISDN number series  The beginning of an MSISDN number. The search returns all the subscribers and subscriber-based CAMEL subscription data whose MSISDN number begins with the specified digits.
OPT	This parameter has no value.	CAMEL subscription options
RID	Numerical 0–31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region identifier

### 3.2.2 HEMSCMP Result File Schema

The result file schema of HEMSCMP varies depending on what parameters are used in the request.

The result file schema for CSPALL [ , OPT] [ , EXT] [ , CRIT] is declared in Section 3.2.2.1 on page 15.

The result file schema for MSISDNALL and MSISDNS is declared in Section 3.2.2.2 on page 17.

The result file schema for CPD=cpd . . . is declared in Section 3.2.2.3 on page 19.

#### 3.2.2.1 CAMEL Subscription Profile Data

A file based on the following schema is returned if CSPALL [ , OPT] [ , EXT] [ , CRIT] was included in the request.

The following is a result file schema for HEMSCMP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="CAMELSubscriptionProfileData">
<xs:complexType>
<xs:sequence>
<xs:element name="CAMELSubscriptionProfile" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="csp" type="xs:integer" />
<xs:element name="CamelTriggeringDetectionPointData" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="tdptype" type="xs:string" />
<xs:element name="tdp" type="xs:integer"/>
<xs:element name="sk" type="xs:integer" />
<xs:element name="gsa" type="xs:string" />
<xs:element name="deh" type="xs:integer" minOccurs="0" />
<xs:element name="cch" type="xs:integer"/>
<xs:element name="i" type="xs:boolean" minOccurs="0" />
<xs:element name="dialnum" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="CAMELSubscriptionOptions" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gcso" type="xs:integer" />
<xs:element name="mcso" type="xs:integer" />
<xs:element name="sslo" type="xs:integer" />
<xs:element name="gc2so" type="xs:integer" />
<xs:element name="mc2so" type="xs:integer" />
<xs:element name="tif" type="xs:integer" minOccurs="0" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gprso" type="xs:integer"/>
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="osmso" type="xs:integer"/>
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gc3so" type="xs:integer" />
<xs:element name="mc3so" type="xs:integer" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gc4so" type="xs:integer" />
<xs:element name="mc4so" type="xs:integer" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="mmso" type="xs:integer" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="tsmso" type="xs:integer"/>
</xs:sequence>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="ExtendedCAMELData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="eoinci" type="xs:integer" />
<xs:element name="eoick" type="xs:integer" />
<xs:element name="etinci" type="xs:integer" />
<xs:element name="etick" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="CAMELTriggeringCriteriaData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="OCTDP2TriggeringCriteriaData" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
```



```
<xs:element name="cch" type="xs:integer" />  
    <xs:element name="mty" type="xs:string" minOccurs="0" />  
    <xs:element name="dnum" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
    <xs:element name="dlgh" type="xs:integer" minOccurs="0" maxOccurs="unbounded" />  
    <xs:element name="ftc" type="xs:string" minOccurs="0" />  
    <xs:element name="bs" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
    <xs:element name="bsg" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
  </xs:sequence>  
</xs:complexType>  
</xs:element>  
<xs:element name="TCTDP12TriggeringCriteriaData" minOccurs="0" maxOccurs="unbounded">  
  <xs:complexType>  
    <xs:sequence>  
      <xs:element name="cch" type="xs:integer" />  
      <xs:element name="bs" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
      <xs:element name="bsg" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
    </xs:sequence>  
  </xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:schema>
```

### 3.2.2.2 CAMEL Subscription Data

A file based on the following schema is returned if `MSISDNALL` or `MSISDNS` was included in the request.

The following is a result file schema for CAMEL Subscription Data:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="CAMELSubscriptionData">
<xs:complexType>
<xs:sequence>
<xs:element name="CAMELSubscription" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="csp" type="xs:integer" minOccurs="0" />
<xs:element name="CamelTriggeringDetectionPointData" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="tdptype" type="xs:string" />
<xs:element name="tdp" type="xs:integer"/>
<xs:element name="sk" type="xs:integer" />
<xs:element name="gsa" type="xs:string" />
<xs:element name="deh" type="xs:integer" minOccurs="0" />
<xs:element name="cch" type="xs:integer"/>
<xs:element name="i" type="xs:boolean" minOccurs="0" />
<xs:element name="dialnum" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="CAMELSubscriptionOptions" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gcso" type="xs:integer" />
<xs:element name="mcso" type="xs:integer" />
<xs:element name="sslo" type="xs:integer" />
<xs:element name="gc2so" type="xs:integer" />
<xs:element name="mc2so" type="xs:integer" />
<xs:element name="tif" type="xs:integer" minOccurs="0" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gprso" type="xs:integer"/>
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="osmsso" type="xs:integer"/>
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gc3so" type="xs:integer" />
<xs:element name="mc3so" type="xs:integer" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="gc4so" type="xs:integer" />
<xs:element name="mc4so" type="xs:integer" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="mmsso" type="xs:integer" />
</xs:sequence>
<xs:sequence minOccurs="0">
<xs:element name="tmsso" type="xs:integer"/>
</xs:sequence>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="ExtendedCAMELData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="eoinci" type="xs:integer" />
<xs:element name="eoick" type="xs:integer" />
<xs:element name="etinci" type="xs:integer" />
<xs:element name="etick" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="CAMELTriggeringCriteriaData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="OCTDP2TriggeringCriteriaData" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
```



```
<xs:element name="cch" type="xs:integer" />  
    <xs:element name="mty" type="xs:string" minOccurs="0" />  
    <xs:element name="dnum" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
    <xs:element name="dlgh" type="xs:integer" minOccurs="0" maxOccurs="unbounded" />  
    <xs:element name="ftc" type="xs:string" minOccurs="0" />  
    <xs:element name="bs" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
    <xs:element name="bsg" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
  </xs:sequence>  
</xs:complexType>  
</xs:element>  
<xs:element name="TCTDP12TriggeringCriteriaData" minOccurs="0" maxOccurs="unbounded">  
  <xs:complexType>  
    <xs:sequence>  
      <xs:element name="cch" type="xs:integer" />  
      <xs:element name="bs" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
      <xs:element name="bsg" type="xs:string" minOccurs="0" maxOccurs="unbounded" />  
    </xs:sequence>  
  </xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
</xs:element>  
</xs:schema>
```

### 3.2.2.3 Conditional CAMEL Subscription Profile List

A file based on the following schema is returned if `CPD=cpd...` was included in the request.

The following is a result file schema for Conditional CAMEL Subscription Profile List:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="ConditionalCAMELSubscriptionProfileList">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="CAMELProfileDataConditions">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="cpd" type="xs:string" maxOccurs="unbounded" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="CAMELProfileList">
        <xs:annotation>
          <xs:documentation>
            If no CAMEL subscription profiles were found in the
            search, nothing will be printed under CAMELProfileList.
          </xs:documentation>
        </xs:annotation>
        <xs:complexType>
          <xs:sequence>
            <xs:element name="csp" type="xs:integer" minOccurs="0" maxOccurs="unbounded" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:schema>
```

### 3.2.2.4

### Result Parameters

The following table covers the attributes that can be received in a HEMSCMP response.

*Table 10 Result Attributes*

Attribute	Type	Description
bs	String See <i>HLR Subscriber Data Type Definitions</i> , Reference [6], for values and value descriptions.	Basic Service (BS).
bsg	String See <i>HLR Subscriber Data Type Definitions</i> , Reference [6], for values and value descriptions.	Basic Service Group (BSG).
cch	Integer 1–4 CAMEL Phase	CAMEL capability handling.
csp	Integer 1-8160	CAMEL Subscription Profile (CSP)
deh	Integer 0-1  0 = Transaction released in case of error in the Global System for Mobile Communication (GSM) service control function to GSM or General Packet Radio Service (GPRS) service switching function dialogue.  1 = Transaction continued in case of error in the GSM service control function to GSM or GPRS service switching function dialogue.	Default error handling
dialnum	String starting with a digit 0–4 <sup>(1)</sup> , followed by –, followed by a text string 1-15 characters. Acceptable characters are 0–9, *, #, a, b, and c.  Example: 0-baccab#22	Dialed number.
dlgh	Integer 1-15	Destination number length.
dnum	String starting with a digit 0–4 <sup>(1)</sup> , followed by –, followed by a text string 1-15 characters. Acceptable characters are 0–9, *, #, a, b, and c.  Example: 3-4000#	Destination number.
eoick	Integer 0-999 Value 0 means not assigned.	Extended originating intelligent network category key.
eoinci	Integer 0-255 Value 0 means not assigned.	Extended originating intelligent network capability indicator.
etick	Integer 0-999 Value 0 means not assigned.	Extended terminating intelligent network category key.



Attribute	Type	Description
etinci	Integer 0-255 Value 0 means not assigned.	Extended terminating intelligent network capability indicator.
ftc	String <b>F</b> (Forwarding) or <b>N</b> (Not forwarding)	Forwarding triggering criteria.
gcso	Integer 0-1  0 = Allow call terminating handling without CAMEL invocation when CAMEL phase 1 is not supported in the interrogating GMSC/gsmSCF  1 = Apply ODB of all incoming calls when CAMEL phase 1 is not supported in the interrogating GMSC/gsmSCF	GMSC gsmSCF CAMEL phase 1 support subscription option.
gc2so	Integer 0-1  0 = Allow call terminating handling with CAMEL phase 1 invocation when CAMEL phase 2 is not supported in the interrogating GMSC/gsmSCF  1 = Apply Operator Determined Barring (ODB) of all incoming calls when CAMEL phase 2 is not supported in the interrogating GMSC/gsmSCF	Gateway Mobile Switching Centre (GMSC) / Global System for Mobile Communication Service Control Function (gsmSCF) CAMEL phase 2 support subscription option.
gc3so	Integer 0-1  0 = Allow call terminating handling with lower CAMEL phase invocation when CAMEL phase 3 is not supported in the interrogating GMSC/gsmSCF  1 = Apply ODB of all incoming calls when CAMEL phase 3 is not supported in the interrogating GMSC/gsmSCF	GMSC gsmSCF CAMEL phase 3 support subscription option.
gc4so	Integer 0-1  0 = Allow call terminating handling with lower CAMEL phase invocation when CAMEL phase 4 is not supported in the interrogating GMSC/gsmSCF  1 = Apply ODB of all incoming calls when CAMEL phase 4 is not supported in the interrogating GMSC/gsmSCF	GMSC gsmSCF CAMEL phase 4 support subscription option.
gprso	Integer 0-1  0 = Allow mobile subscribers registration in the Serving GPRS Support Node (SGSN) without sending GPRS CAMEL phase 3 data when CAMEL phase 3 data is not allowed to be sent to the SGSN  1 = Deny mobile subscribers registration in the SGSN when CAMEL phase 3 data is not allowed to be sent to the SGSN	GPRS CAMEL phase 3 denied subscription option.
gsa	Digit string, 3-15 digits Each digit is 0-9.	GSM service control function address



Attribute	Type	Description
i	Boolean  true = Terminating CAMEL subscription data for the given Trigger Detection Point (TDP) is not sent towards the GMSC when the subscriber is roaming inside the Home Public Land Mobile Network (HPLMN)  false = Terminating CAMEL subscription data for the given TDP is always sent towards the GMSC	Inhibition indicator
mcs0	Integer 0–2  0 = Allow mobile subscribers registration in the serving MSC/VLR without sending CAMEL data when CAMEL phase 1 data is not allowed to be sent to the MSC/VLR.  1 = Network induced activation of supplementary service BAOC performed when CAMEL phase 1 data is not allowed to be sent to the serving MSC/VLR.  2 = Deny mobile subscribers registration in the serving MSC/VLR when CAMEL phase 1 data is not allowed to be sent to the MSC/VLR.	Mobile Switching Center (MSC) / Visitor Location Register (VLR) CAMEL phase 1 denied subscription option.
mc2so	Integer 0–2  0 = Check if mobile subscribers registration in the serving MSC/VLR with CAMEL phase 1 data can be performed or register without CAMEL data when CAMEL phase 2 data is not allowed to be sent to the MSC/VLR.  1 = Network induced activation of supplementary service Barring of All Outgoing Calls (BAOC) performed when CAMEL phase 2 data is not allowed to be sent to the serving MSC/VLR.  2 = Deny mobile subscribers registration in the serving MSC/VLR when CAMEL phase 2 data is not allowed to be sent to the MSC/VLR.	MSC/VLR CAMEL phase 2 denied subscription option



Attribute	Type	Description
mc3so	Integer 0-2  0 = Check if mobile subscribers registration in the serving MSC/VLR with lower CAMEL phase data can be performed or register without CAMEL data when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR  1 = Network induced activation of supplementary service BAOC performed when CAMEL phase 3 data is not allowed to be sent to the serving MSC/VLR. For Visited MSC (VMSC) terminating CAMEL TDPs value 1 has the same meaning as value 0  2 = Deny mobile subscribers registration in the serving MSC/VLR when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR	MSC VLR CAMEL phase 3 denied subscription option.
mc4so	Integer 0-2  0 = Check if mobile subscribers registration in the serving MSC/VLR with lower CAMEL phase data can be performed or register without CAMEL data when CAMEL phase 4 data is not allowed to be sent to the MSC/VLR  1 = Network induced activation of supplementary service BAOC performed when CAMEL phase 4 data is not allowed to be sent to the serving MSC/VLR. For VMSC terminating CAMEL TDPs value 1 has the same meaning as value 0.  2 = Deny mobile subscribers registration in the serving MSC/VLR when CAMEL phase 4 data is not allowed to be sent to the MSC/VLR	MSC VLR CAMEL phase 4 denied subscription option.
mmso	Integer 0-1  0 = Allow mobile subscribers registration in the serving MSC/VLR without sending mobility management CAMEL phase 3 data when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR  1 = Deny mobile subscribers registration in the serving MSC/VLR when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR	Mobility management CAMEL phase 3 denied subscription option
msisdn	Text string, 5-15 digits  Each digit is 0-9.	Mobile Subscriber ISDN Number (MSISDN)
mty	String I (Inhibiting) or E (Enabling)	Match type.



Attribute	Type	Description
osmssso	Integer 0-2  0 = Allow mobile subscribers registration in the serving node (MSC/VLR or SGSN or both) without sending originating SMS CAMEL phase 3 data when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR or SGSN  1 = Network induced service withdrawal of Teleservice Short Message MO/PP performed when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR or SGSN  2 = Deny mobile subscribers registration in the serving node (MSC/VLR or SGSN or both) when CAMEL phase 3 data is not allowed to be sent to the MSC/VLR or SGSN	Originating Short Message Service (SMS) CAMEL phase 3 denied subscription option.
sk	Integer 0-2147483647	Service key
sslo	Integer 0-1  0 = Subscriber state and location information are not sent at Send Routing Information Mobile Application Part (MAP) version 3 message response  1 = Subscriber state and location information are sent at Send Routing Information MAP version 3 message response	Subscriber state and location information sending CAMEL subscription option.
tdp	Integer 0-255  The value range depends on <i>tdptype</i> . See <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Trigger detection point
tdptype	String <ul style="list-style-type: none"><li>• Enumeration value ="DSTDP"</li><li>• Enumeration value ="GPRSTDP"</li><li>• Enumeration value ="MMTDP"</li><li>• Enumeration value ="OCTDP"</li><li>• Enumeration value ="OSMSTDP"</li><li>• Enumeration value ="TCTDP"</li><li>• Enumeration value ="TSMSTDP"</li><li>• Enumeration value ="VTDP"</li></ul>	Type of TDP



Attribute	Type	Description
tif	Integer 0-1  0 = Number length, format, and conditional barrings checks are performed, when the mobile subscriber or the service provider registers a forwarded-to number  1 = Number length, format, and conditional barrings checks are not performed, when the mobile subscriber or the service provider registers a forwarded-to number	Translation information flag.
tsmsso	Integer 0-2  0 = Allow mobile subscribers registration in the serving node (MSC/VLR or SGSN or both) without sending terminating SMS CAMEL phase 4 data, when terminating SMS CAMEL phase 4 data is not allowed to be sent to the MSC/VLR or SGSN or both  1 = Allow mobile subscribers registration in the serving node (MSC/VLR or SGSN or both) without sending terminating SMS CAMEL phase 4 data, when terminating SMS CAMEL phase 4 data is not allowed to be sent to the MSC/VLR or SGSN or both. Network induced service invocation of an incoming call barring service is applied to mobile terminating short message delivery by MSC or SGSN or both.  2 = Deny mobile subscribers registration in the serving node (MSC/VLR or SGSN or both) when terminating SMS CAMEL phase 4 data is not allowed to be sent to the MSC/VLR or SGSN or both	Terminating SMS CAMEL phase 4 denied subscription option.

(1) 0 means Unknown, 1 or 2 means Not used, 3 means National number, and 4 means International number.

### 3.3 Print Extended Quality of Service (HEMSEQP)

The Extended Quality of Service CLI allows requesting of the following information for standard subscribers:

- The MSISDN and the IMSI of the mobile subscribers that use the extended QoS data corresponding to an extended QoS identifier in any of their PDP contexts either directly assigned to the subscriber or through a PDP context profile.
- The MSISDN and the IMSI of the mobile subscribers belonging to an MSISDN number series that use the extended QoS data corresponding to an extended QoS identifier in any of their PDP contexts either directly assigned to the subscriber or through a PDP context profile.



The Extended Quality of Service CLI allows requesting of the following information for PDP context profiles.

- The PDP context profiles using an extended QoS identifier in any of their defined PDP contexts.
- The number of subscribers using a specific EQOSID based on the MBRD value. For example, this could be used for counting numbers of subscribers with High Speed Downlink Package Access (HSDPA) activated.

### 3.3.1 HEMSEQP Request

**Note:**

- The element `HSDPASubscriber` is returned if `SUBSNUM` is given in the request.
- The element `ExtendedQualityOfService` is returned if `EQOSID` is given in the request.
- The element `MobileSubscriber` is returned if `MSISDNALL` or `MSISDNS` is given in the request.
- The element `PDPContextProfile` is returned if `PDPCPS` is given in the request.

**Command Description:**

$$\text{HEMSEQP:} \left[ \begin{array}{l} \text{EQOSID=eqosid,} \left[ \begin{array}{l} \text{MSISDNALL[,RID=rid...]} \\ \text{MSISDNS=msisdns[,RID=rid...]} \\ \text{PDPCPS} \end{array} \right] \\ \text{SUBSNUM[,VALUE=value][,RID=rid...]} \end{array} \right];$$

#### Example of a HEMSEQP command

```
HEMSEQP:EQOSID=234,MSISDNALL;
```

This CLI command obtains the MSISDN and the IMSI of the mobile subscribers that use the extended QoS corresponding to the extended QoS identifier 234 in any of their PDP contexts, either directly assigned to the subscriber or through a PDP context profile.

#### Example of a HEMSEQP command

```
HEMSEQP:SUBSNUM,VALUE=500;
```





This CLI command counts all subscribers having the Maximum Bit Rate for Downlink (MBRD) value set to at least 500 Kbps. The result is sorted on EQOSID with belonging MBRD value and for each EQOSID the number of subscribers connected to it is shown.

**Note:** If the parameter `VALUE` is omitted, the default value 384 Kbps is used.

The following table explains the attributes that can be used in a HEMSEQP request:

*Table 11 Command Attributes*

Attribute	Type	Description
EQOSID	Integer 0-4095	Extended QoS ID
MSISDNALL	This parameter has no value.	If given, all subscribers using the entered extended Quality of Service (QoS) are fetched
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
PDPCPS	This parameter has no value.	If PDPCPS is used, PDP context profiles using the requested extended QoS identifier are returned.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier
SUBSNUM	This parameter has no value.	If SUBSNUM is used, it activates a procedure for counting all subscribers having a minimum MBRD value as specified in the parameter <code>VALUE</code> . The result is stored in a file.
VALUE	Integer 0-256000	Optional parameter that allows the operator to select a minimum MBRD value. If omitted, the default value is 384 Kbps.  Values from 1 Kbps to 63 Kbps are possible in 1 Kbps increments.  Values from 64 Kbps to 568 Kbps are possible in 8 Kbps increments.  Values from 576 Kbps to 8640 Kbps are possible in 64 Kbps increments.  Values from 8700 Kbps to 16000 Kbps are possible in 100 Kbps increments.  Values from 17000 Kbps to 128000 Kbps are possible in 1000 Kbps increments.  Values from 130000 Kbps to 256000 Kbps are possible in 2000 Kbps increments.  Values higher than 2048 Kbps are application system-dependent parameter values.

### 3.3.2 HEMSEQP Result File Schema

The following is a result file schema for HEMSEQP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="ExtendedQualityOfServiceData">
<xs:complexType>
<xs:sequence>
<xs:choice>
<xs:element name="ExtendedQualityOfService">
<xs:complexType>
<xs:sequence>
<xs:element name="eqosid" type="xs:integer" />
<xs:element name="tc" type="xs:string" />
<xs:element name="arp" type="xs:integer" />
<xs:element name="do" type="xs:boolean" />
<xs:element name="sdu" type="xs:string" />
<xs:element name="mbriu" type="xs:integer" />
<xs:element name="mbrd" type="xs:integer" />
<xs:element name="thp" type="xs:integer" minOccurs="0" />
<xs:element name="td" type="xs:integer" minOccurs="0" />
<xs:element name="gbriu" type="xs:integer" minOccurs="0" />
<xs:element name="gbrd" type="xs:integer" minOccurs="0" />
<xs:choice>
<xs:element name="MobileSubscriber" minOccurs="0" maxOccurs="unbounded" >
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
<xs:element name="pdpcp" type="xs:integer" minOccurs="0" />
<xs:element name="pdpid" type="xs:integer" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="PDPCContextProfile" minOccurs="0" maxOccurs="unbounded" >
<xs:complexType>
<xs:sequence>
<xs:element name="pdpcp" type="xs:integer" />
<xs:element name="pdpid" type="xs:integer" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="HSDPASubscriber">
<xs:complexType>
<xs:sequence>
<xs:element name="eqosid" type="xs:integer" />
<xs:element name="mbrd" type="xs:integer" />
<xs:element name="subsnun" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

**Note:** The element `ExtendedQualityOfService` is returned if `EQOSID` is given in the request. The element `MobileSubscriber` is returned if `MSISDNALL` or `MSISDNS` is given in the request. The element `PDPCContextProfile` is returned if `PDPCPS` is given in the request. The element `HSDPASubscriber` is returned if `SUBSNUN` is given in the request

The following table covers the attributes that can be received in a `HEMSEQP` response.

**Table 12** *Result Attributes*

Attribute	Type	Description
arp	Integer 1-3 1 = High priority 2 = Normal priority 3 = Low priority	Allocation and retention priority
do	Boolean true means with delivery order. false means without delivery order.	Delivery order
eqosid	Integer 0-4095	Extended QOS ID
gbrd	Integer 0-256000	Guaranteed bit rate for downlink in Kbps
gbru	Integer 0-256000	Guaranteed bit rate for uplink in Kbps
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
mbrd	Integer 0-256000	Maximum bit rate for downlink in Kbps
mbru	Integer 0-256000	Maximum bit rate for uplink in Kbps
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International PSTN/ISDN Number
pdpcp	Integer 0-8160	PDP context profile
pdpid	Integer 1-50	PDP context ID



Attribute	Type	Description
sdu	<p>Text string in the format of <code>&lt;desdu&gt;-&lt;maxsu&gt;-&lt;rber&gt;-&lt;sduer&gt;</code></p> <p><code>&lt;desdu&gt;</code> is delivery of erroneous SDUs</p> <p>NDU = No detect erroneous SDUs</p> <p>NO = Erroneous SDUs are not delivered</p> <p>YES = Erroneous SDUs are delivered</p> <p><code>&lt;maxsu&gt;</code> is the maximal SDU size. The unit is tens of octets. For example, the value 151 means 1502 octets.</p> <p><code>&lt;rber&gt;</code> is residential bit error</p> <p>1 = 5e-2</p> <p>2 = 1e-2</p> <p>3 = 5e-3</p> <p>4 = 4e-3</p> <p>5 = 1e-3</p> <p>6 = 1e-4</p> <p>7 = 1e-5</p> <p>8 = 1e-6</p> <p>9 = 6e-8</p> <p><code>&lt;sduer&gt;</code> is SDU error ratio</p> <p>1 0 1e-2</p> <p>2 = 7e-3</p> <p>3 = 1e-3</p> <p>4 = 1e-4</p> <p>5 = 1e-5</p> <p>6 = 1e-6</p> <p>7 = 1e-1</p>	Service Data Unit (SDU)
subsnum	Integer	The number of calculated subscribers using the specific <code>egosid</code> .
tc	<p>One of the following text strings:</p> <ul style="list-style-type: none"><li>• BACK for background</li><li>• CON for conversational</li><li>• INT for interactive</li><li>• STR for streaming</li></ul>	Traffic class
td	Integer 100-4000	Transfer delay in milliseconds
thp	Integer 1-4	Traffic handling priority



## 3.4 Print Location Services Address (HEMSGLP)

The Location Services Address CLI allows requesting of the following data:

- The GMLC address identifier, its associated GMLC address, and the MSISDN of all the mobile subscribers having the entered either GMLC address or GMLC address identifier.
- The GMLC address identifier, its associated GMLC address, and the MSISDN of mobile subscribers belonging to an MSISDN number series having the entered either GMLC address or GMLC address identifier.
- The GMLC address identifier, its associated GMLC address, and the MSISDN of all the subscribers having the entered either GMLC address or GMLC address identifier in the entered user function.
- The GMLC address identifier, its associated GMLC address, and the MSISDN of mobile subscribers belonging to an MSISDN number series having the entered either GMLC address or GMLC address identifier in the entered user function.
- The HGMLC address identifier, its associated HGMLC address, and the MSISDN of mobile subscribers belonging to an MSISDN number series having the entered either HGMLC address or HGMLC address identifier.
- The HGMLC address identifier, its associated HGMLC address, and the MSISDN of all the subscribers having the entered either HGMLC address or HGMLC address identifier.
- The PPR address identifier, its associated PPR address, and the MSISDN of mobile subscribers belonging to an MSISDN number series having the entered either PPR address or PPR address identifier.
- The PPR address identifier, its associated PPR address, and the MSISDN of all the subscribers having the entered either PPR address or PPR address identifier.

### 3.4.1 HEMSGLP Request

Command Description:



```
HEMSGLP: [
    GMLCA=gmlca[,USRF=usrf]
    GMLCID=gmlcid[,USRF=usrf]
    HGMLCA=hgmlca
    HGMLCID=hgmlcid
    PPRa=ppra
    PPRID=pprid
] [
    ,MSISDNALL
    ,MSISDNS=msisdns
] [,RID=rid...];
```

### Example of a HEMSGLP command

```
HEMSGLP:GMLCID=123,USRF=LCS,MSISDNALL;
```

This CLI command obtains the GMLC address identifier 123, its corresponding GMLC address, and the MSISDN of the subscribers having the entered GMLC address in the location services user function.

The following table explains the attributes that can be used in a HEMSGLP request:

*Table 13 Command Attributes*

Attribute	Type	Description
GMLCA	Text string, 3-15 digits Each digit is 0-9.	Gateway Mobile Location Center (GMLC) address
GMLCID	Integer 0-255	GMLC address identifier
HGMLCA	Text String  This parameter allows either an Internet Protocol (IP) version 4 or an IP version 6 address.  IP version 4 (IPv4) address: Text string 7-15 characters Expressed as oc1, oc2, oc3, oc4 where: oc1 - oc4 Octet 1 - 4 Integer 0-255  IP version 6 (IPv6) address: Text string 2-39 characters Expressed as hex1:hex2:hex3:hex4:hex5:hex6:hex7:hex8 where: hex1 - hex 8 Hexadecimal word 1 - 8 Hexadecimal numeral 0-FFFF	Home GMLC (HGMLC) address
HGMLCID	Integer 0-255	Home GMLC address identifier



Attribute	Type	Description
MSISDNALL	This parameter has no value.	If given, all subscribers using the entered LCS address is fetched.
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
PPRA	Text string This parameter allows either an Internet Protocol (IP) version 4 or an IP version 6 address. IP version 4 (IPv4) address: Text string 7-15 characters Expressed as oc1, oc2, oc3, oc4 where: oc1 - oc4 Octet 1 - 4 Integer 0-255 IP version 6 (IPv6) address: Text string 2-39 characters Expressed as hex1:hex2:hex3:hex4:hex5:hex6:hex7:hex8 where: hex1 - hex8 Hexadecimal word 1 - 8 Hexadecimal numeral 0-FFFF	Privacy Profile Register (PPR) address
PPRID	Integer 0-255	Privacy Profile Register address identifier
RID	Numeral 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier
USRF	Text String values LCS or STE LCS Location Services STE Spatial Triggers	User function

### 3.4.2 HEMSGLP Result File Schema

The following is a result file schema for HEMSGLP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="LocationServicesAddressData">
<xs:complexType>
<xs:sequence>
<xs:choice>
<xs:element name="GMLCAddressData">
<xs:complexType>
<xs:sequence>
<xs:element name="gmlca" type="xs:string" />
<xs:element name="gmlcid" type="xs:integer" />
<xs:element name="msisdn" type="xs:string" minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="HomeGMLCAddressData">
<xs:complexType>
<xs:sequence>
<xs:element name="hgmlca" type="xs:string" />
<xs:element name="hgmlcid" type="xs:integer" />
<xs:element name="msisdn" type="xs:string" minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="PrivacyProfileRegisterAddressData">
<xs:complexType>
<xs:sequence>
<xs:element name="ppra" type="xs:string" />
<xs:element name="pprid" type="xs:integer" />
<xs:element name="msisdn" type="xs:string" minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSGLP response.

*Table 14 Result Attributes*

Attribute	Type	Description
gmlca	Text string, 3-15 digits Each digit is 0-9.	Gateway Mobile Location Center (GMLC) address
gmlcid	Integer 0-255	GMLC address identifier





Attribute	Type	Description
hgmlca	Text string  This parameter allows either an Internet Protocol (IP) version 4 or an IP version 6 address.  IP version 4 (IPv4) address:  Text string 7-15 characters  Expressed as oc1, oc2, oc3, oc4 where:  oc1 - oc4  Octet 1 - 4  Integer 0-255  IP version 6 (IPv6) address:  Text string 2-39 characters  Expressed as hex1:hex2:hex3:hex4:hex5:hex6:hex7:hex8 where:  hex1 - 4  Hexadecimal word 1 - 8  Hexadecimal numeral 0-FFFF	Home GMLC (HGMLC) address
hgmlcid	Integer 0-255	Home GMLC address identifier
msisdn	Text string, 5-15 digits  Each digit is 0-9.	Mobile Station International PSTN/ISDN Number
pdpid	Integer 1-50	PDP context ID
ppra	Text string  This parameter allows either an Internet Protocol (IP) version 4 or an IP version 6 address.  IP version 4 (IPv4) address:  Text string 7-15 characters  Expressed as oc1, oc2, oc3, oc4 where:  oc1 - oc4  Octet 1 - 4  Integer 0-255  IP version 6 (IPv6) address:  Text string 2-39 characters  Expressed as hex1:hex2:hex3:hex4:hex5:hex6:hex7:hex8 where:  hex1 - 4  Hexadecimal word 1 - 8  Hexadecimal numeral 0-FFFF	Privacy Profile Register (PPR) address
pprid	Integer 0-255	Privacy Profile Register address identifier



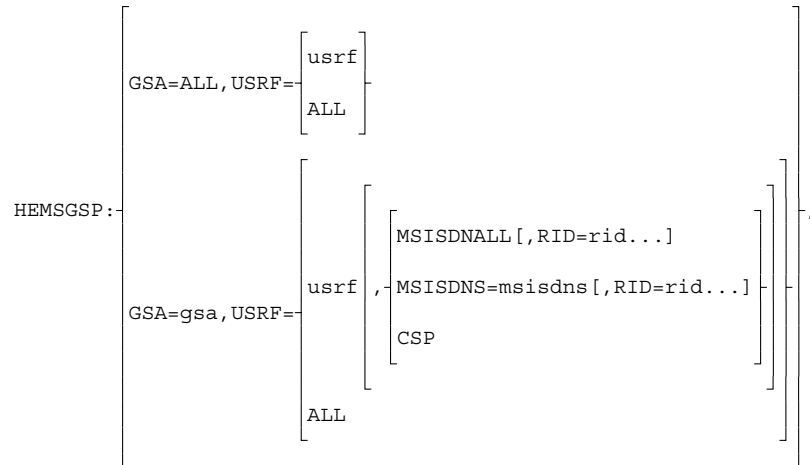
## 3.5 Print GSM Service Control Function Address (HEMSGSP)

The GSM Service Control Function Address CLI allows requesting of the following data:

- All GSM service control function addresses in use by any user function and all the user functions using each address.
- All GSM service control function addresses used by a specified user function.
- A specified GSM service control function address in use by a specified user function.
- The user functions using a specified GSM service control function address.
- The MSISDN of all the subscribers with a CAMEL subscription profile defined that uses the specified GSM service control function.
- The MSISDN of subscribers belonging to an MSISDN number series with a CAMEL subscription profile defined that uses the specified GSM service control function.
- The MSISDN of all the subscribers associated to the user function MMINT using a specified GSM service control function address.
- The MSISDN of subscribers belonging to an MSISDN a number series associated to the user function MMINT using a specified GSM service control function address.
- The CAMEL subscription profiles using a specified GSM service control function address.

### 3.5.1 HEMSGSP Request

Command Description:



**Note:** CSP is only applicable if USRF=CAMEL.

### Example of a HEMSGSP command

```
HEMSGSP : GSA=56789, USRF=CAMEL, MSISDNALL;
```

This CLI command obtains all MSISDN with a CAMEL subscription profile that uses the GSM service control function address 56789.

The following table explains the attributes that can be used in a HEMSGSP request:

**Table 15** Command Attributes

Attribute	Type	Description
CSP	This parameter has no value.	CAMEL subscription profile CSP is only applicable if USRF=CAMEL.
GSA	Digit string, 3-15 digits Each digit is 0-9.	GSM service control function address
MSISDNALL	This parameter has no value.	If given, all subscribers using the entered GSM service control function address data, are fetched
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.



Attribute	Type	Description
RID	Numeral 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier
USRF	Text String values ALL, CAMEL or MMINT  ALL= All user functions  CAMEL= Customized Applications for Mobile Networks Enhanced Logic  MMINT= Mobility Management Intelligent Network Triggering	User function

### 3.5.2 HEMSGSP Result File Schema

The following is a result file schema for HEMSGSP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
  attributeFormDefault="qualified">
  <xs:element name="GSMServiceControlFunctionAddressData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="GSMServiceControlFunctionAddress" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="gsa" type="xs:string" />
              <xs:element name="usrf" type="xs:string" minOccurs="0" maxOccurs="unbounded" />
              <xs:element name="msisdn" type="xs:string" minOccurs="0" maxOccurs="unbounded" />
              <xs:element name="csp" type="xs:integer" minOccurs="0" maxOccurs="unbounded" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSGSP response.

**Table 16** Result Attributes

Attribute	Type	Description
csp	Integer 1-8160	CAMEL subscription profile
gsa	Digit string, 3-15 digits Each digit is 0-9.	GSM service control function address
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International PSTN/ISDN Number
usrf	Text string  CAMEL= Customized Applications for Mobile Networks Enhanced Logic  MMINT= Mobility Management Intelligent Network Triggering	User function



## 3.6 Print IMSI Changeover (HEMSICP)

The IMSI Changeover CLI allows requesting of the following data:

- The changeover data for all mobile subscribers or for a subscriber number series with a procedure for IMSI Changeover regardless of the state.
- The changeover data for all mobile subscribers or for a subscriber number series with a procedure for IMSI changeover already executed.
- The changeover data for all mobile subscribers or for a subscriber number series with a procedure for IMSI changeover pending.
- The changeover data for all mobile subscribers or for a subscriber number series with a procedure for IMSI changeover forced.

### 3.6.1 HEMSICP Request

Command Description:

$$\text{HEMSICP:} \left[ \begin{array}{l} \text{NIMSIS=nimsis} \\ \text{NIMSIALL} \end{array} \right] , \left[ \begin{array}{l} \text{PEND} \\ \text{EXEC} \\ \text{FORCED} \end{array} \right] [,RID=rid...];$$

#### Example of a HEMSICP command

HEMSICP:NIMSIALL, EXEC;

This CLI command obtains the changeover data for all mobile subscribers with a procedure for IMSI changeover already executed.

The following table explains the attributes that can be used in a HEMSICP request.

*Table 17 Command Attributes*

Attribute	Type	Description
EXEC	This parameter has no value.	The changeover procedure has been executed. The new SIM-card has already been used.
FORCED	This parameter has no value.	The changeover procedure has been forced to execution because the mobile subscriber has not used the new card yet.
NIMSIS	Digit string, 1-15 digits Each digit is 0-9.	New IMSI number series
NIMSIALL	This parameter has no value.	Data for all subscribers with an ongoing Changeover procedure.



Attribute	Type	Description
PEND	This parameter has no value.	The changeover procedure has been initiated, but not yet executed. This could be because of the expiry date has not been reached, or the new SIM-card has not been used yet.
RID	Numerals 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.6.2 HEMSICP Result File Schema

The following is a result file schema for HEMSICP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="IMSICChangeoverData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="IMSICChangeover" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="msisdn" type="xs:string" />
              <xs:element name="imsi" type="xs:string" />
              <xs:element name="nimsi" type="xs:string" />
              <xs:element name="state" type="xs:string" />
              <xs:element name="date" type="xs:string" />
              <xs:element name="authd" type="xs:string" minOccurs="0" />
              <xs:element name="IMPIDData" minOccurs="0">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="impi" type="xs:string" />
                    <xs:element name="nimpi" type="xs:string" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
              <xs:element name="IMPUDData" minOccurs="0">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="impu" type="xs:string" />
                    <xs:element name="nimpu" type="xs:string" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSICP response.

**Table 18** Result Attributes

Attribute	Type	Description
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International PSTN/ISDN Number
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity



Attribute	Type	Description
nimsi	Text string, 6-15 digits Each digit is 0-9.	New International Mobile Subscriber Identity
state	Text string PEND Pending (old card active) EXEC Executed (new card active) FORC Forced (expiry date reached and new card never used)	Status of the changeover
date	Text string	Date for expiry or execution of the Changeover procedure
authd	Text string AVAIL Authentication data available NOIMSI No IMSI in authentication center at the last attempt to get authentication data for this mobile subscriber NOACC No access to authentication center at the last attempt to get authentication data for this mobile subscriber	Authentication data <sup>(1)</sup>
impi	String, 5- 70	Identifies the Private Identity.
nimpi	String, 5 - 70	Identifies the new Private Identity.
impu	String	Identifies the Public Identity. It is derived from IMSI.  Examples:  • sip - sip:IMSI@ims.mncXXX.mccXXX.
nimpu	String	Identifies the new Public Identity. It is derived from IMSI.  Examples:  • sip - sip:IMSI@ims.mncXXX.mccXXX.

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

## 3.7 Print Subscriber Location Services Data (HEMSLDP)

The Subscriber Location Services Data CLI allows requesting of the following data:

- The LCS data for the mobile subscribers with the MSISDN belonging to an MSISDN number series with LCS data defined.

### 3.7.1 HEMSLDP Request

Command Description:



```
HEMSLDP:MSISDNS=msisdns[,RID=rid...];
```

### Example of a HEMSLDP command

```
HEMSLDP:MSISDNS=9133921;
```

This CLI command obtains the LCS data defined for the mobile subscribers with MSISDN belonging to number series 9133921.

The following table explains the attributes that can be used in a HEMSLDP request.

*Table 19 Command Attributes*

Attribute	Type	Description
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 3.7.2 HEMSLDP Result File Schema

The following is a result file schema for HEMSLDP:



4/155 19-CSH 109 628 UenD</xs:sequence>



UniversalLocationServices is printed if the attribute UNIV is found and not set to the default value.

CallRelatedLocationServices is printed if the attribute CREL is found and not set to the default value.

CallUnrelatedLocationServices is printed if the attribute CUNREL is found and not set to the default value.

PLMNOperatorLocationServices is printed if the attribute PLMO is found and not set to the default value.

If none of the attributes UNIV, CREL, CUNREL, or PLMO are found in the search, the parent element, PrivacyLCSClassData, is not printed.

The following table covers the attributes that can be received in a HEMS LDP response.

**Table 20** *Result Attributes*

Attribute	Type	Description
eadd	Text string	External address
gres	Boolean 0 (False) = Only GMLCs defined in subscriber GMLC address list 1 (True) = Any GMLC in the home country	Restriction on the Gateway Mobile Location Center (GMLC)
intid	Integer 0-4 Type of LCS client that is allowed to locate the mobile subscriber: 0 = LCS client broadcasting location-related information 1 = Operation and Maintenance (O) LCS client in the Home Public Land Mobile Network (HPLMN) 2 = O LCS client in the Visited Public Land Mobile Network (VPLMN) 3 = LCS client recording anonymous location information 4 = LCS client supporting a bearer service, teleservice, intelligent network service, or supplementary service to the mobile subscriber	Internal Identity
mocl	Text string ASL = Semi-autonomous self location BSL = Basic self location TTP = Transfer to third party	LCS mobile originating class
msisdn	Text string, 5-15 digits. Each digit is 0-9.	Mobile Station International PSTN/ISDN Number



Attribute	Type	Description
notf	Integer 0-4  0 = Location request allowed without notification (call/session related LCS privacy class, external LCS client address, and service type) or location request not allowed (call/session unrelated LCS privacy class)  1 = Location request allowed with notification  2 = Location request with notification and privacy verification allowed if no response  3 = Location request with notification and privacy verification restricted if no response  4 = Location request not allowed (call/session related LCS privacy class)	Location request restriction related to the notification to the mobile subscriber
servt	Integer 0-127  Service type for which an LCS client is allowed to locate the mobile subscriber:  0 = Emergency services 1 = Emergency alert services 2 = Person tracking 3 = Fleet management 4 = Asset management 5 = Traffic congestion reporting 6 = Roadside assistance 7 = Routing to nearest commercial enterprise 8 = Navigation 9 = City sightseeing 10 = Localized advertising 11 = Mobile yellow pages 12 = Traffic and public transportation information 13 = Weather 14 = Asset and service finding 15 = Gaming 16 = Find your friend 17 = Dating 18 = Chatting 19 = Route finding 20 = Where-am-I  64-127 = Operator-specific service types	Service Type



## 3.8 Print Conditional Subscriber List (HEMSLIP)

The Conditional Subscriber List CLI allows requesting of the following information:

- The MSISDN and IMSI numbers of the mobile subscribers belonging to the MSISDN or IMSI number series given as condition in the CLI.
- The MSISDN and IMSI numbers of the mobile subscribers belonging to an MSISDN or IMSI number series and provided with the Subscriber Data (SUD) given as condition in the CLI. Up to 8 SUD as maximum can be given in the CLI, see *HLR Subscriber Data Type Definitions*, Reference [6], for related SUD information and operation allowed over them.
- The MSISDN and IMSI numbers of the mobile subscribers provided with the SUDs given as condition in the CLI. Up to 8 SUD as maximum can be given in the CLI.

### 3.8.1 HEMSLIP Request

Command Description:

```
HEMSLIP: + [ [ MSISDNS=msisdns ] [ , SUD=sud... ] [ , COUNT ] ] + [ , RID=rid... ] ;  
            [ IMSIS=imsis ]  
            [ SUD=sud... ]
```

#### Example of a HEMSLIP command

```
HEMSLIP:MSISDNS=3456 , SUD=OFA-1&BICRO-1 ;
```

This CLI command obtains the MSISDN and IMSI numbers of the mobile subscribers that fulfill the following conditions:

- The MSISDN number belongs to MSISDN number series 3456
- The origin of forwarded-to number analysis is 1 for this number series
- Barring of all incoming calls when roaming outside the Home Public Land Mobile Network (PLMN) country is provided

The following table explains the attributes that can be used in a HEMSLIP request.



Table 21 Command Attributes

Attribute	Type	Description
IMSI	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series  The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
MSISDN	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier
SUD	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Subscriber Data SUD
COUNT	This parameter has no value.	If the COUNT parameter is provided in the request, only the statistics are printed, not the subscriber list.

### 3.8.2 HEMSLIP Result File Schema

The following is a result file schema for HEMSLIP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="ConditionalSubscriberList">
<xs:complexType>
<xs:sequence>
<xs:element name="SubscriberConditions">
<xs:complexType>
<xs:sequence>
<xs:choice minOccurs="0">
<xs:element name="msisdns" type="xs:string" />
<xs:element name="imsis" type="xs:string" />
</xs:choice>
<xs:element name="sud" type="xs:string" minOccurs="0"
maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:choice>
<xs:element name="SubscriberList" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveSearchStatistics" minOccurs="0" maxOccurs="1">
<xs:complexType>
<xs:sequence>
<element name="starttime" type="xs:string" />
<element name="stoptime" type="xs:string" />
<element name="NumberOfFoundSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSLIP response.

**Table 22**    *Result Attributes*

Attribute	Type	Description
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
imsis	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series The first digits of an IMSI number
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International ISDN Number
msisdns	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series The first digits of an MSISDN number
sud	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Subscriber Data SUD



Attribute	Type	Description
starttime	Text string Date format is yyyy-MM-dd HH:mm:ss.	The starttime parameter indicates the command start time of the HEMSILP.
stoptime	Text string Date format is yyyy-MM-dd HH:mm:ss.	The stoptime parameter indicates the command stop time of the HEMSILP.
NumberOfFoundSubscribers	Integer	The NumberOfFoundSubscribers parameter indicates the number of subscribers that fulfill the search conditions.

## 3.9 Print Monitoring Call Forwarding Registration Data (HEMSMRP)

The Monitoring Call Forwarding Registration Data CLI allows requesting of the following data:

- The Monitoring Call Forwarding Registration Data for all connected mobile subscribers with Monitoring Call Forwarding Data activated.
- The Monitoring Call Forwarding Registration Data for connected subscriber belonging to an MSISDN number series with Monitoring Call Forwarding Data activated.

### 3.9.1 HEMSMRP Request

Command Description:

```
HEMSMRP: [MSISDNS=msisdns  
          MSISDNALL] [,RID=rid...];
```

#### Example of a HEMSMRP command

```
HEMSMRP:MSISDNS=3491339;
```

This CLI command obtains the monitoring of call forwarding registration indicator, the call forwarding registration counter, and the MSISDN for each mobile subscriber within the MSISDN number series 3491339 with the function active.

The following table explains the attributes that can be used in a HEMSMRP request:

**Table 23** *Command Attributes*

Attribute	Type	Description
MSISDNALL	This parameter has no value.	If given, all subscribers with the function activate are fetched
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
RID	Numeral 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.9.2 HEMSMRP Result File Schema

The following is a result file schema for HEMSMRP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
  attributeFormDefault="qualified">
  <xs:element
    name="MonitoringCallForwardingRegistrationData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="MonitoringCallForwardingRegistration" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="msisdn" type="xs:string" />
              <xs:element name="mcf" type="xs:integer" />
              <xs:element name="cfr" type="xs:integer" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSMRP response.

**Table 24** *Result Attributes*

Attribute	Type	Description
cfr	Integer 0-20	Call Forwarding Registration counter
mcf	Integer 1-2 1 = International forwarded-to number registrations 2 = All forwarded-to number registrations	Monitoring of call forwarding registration indicator
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International ISDN Number





## 3.10 Print Multiple Subscription Data (HEMSMSP)

The Multiple Subscription Data CLI allows requesting of the following data:

- The MSISDN and IMSI of all subscriptions associated to a multiple subscription, which one is the active one, which MSISDN is the master one and the activation mechanism in the multiple subscription with at least one MSISDN belonging to the MSISDN series.

**Note:** If there are several subscriptions in the series that belong to the same multiple subscription, the multiple subscription data is only printed once.

### 3.10.1 HEMSMSP Request

Command Description:

```
HEMSMSP:MSISDNS=msisdns[,RID=rid...];
```

#### Example of a HEMSMSP command

```
HEMSMSP:MSISDNS=1234567;
```

This CLI command obtains the MSISDN, IMSI of all the subscriptions associated in a multiple subscription containing a subscription identified by an MSISDN belonging to 1234567 series and which one is the active subscription and which MSISDN is the master one and the activation mechanism for the multiple subscription.

The following table explains the attributes that can be used in a HEMSMSP request:

*Table 25 Command Attributes*

Attribute	Type	Description
MSISDNS	Digit string 1-15 digits. Each digit is 0-9	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.10.2 HEMSMSP Result File Schema

The following is a result file schema for HEMSMSP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="MultipleSubscriptionDataList">
<xs:complexType>
<xs:sequence>
<xs:element name="MultipleSubscriptionData" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="mch" type="xs:string" />
<xs:element name="SubscriptionData" minOccurs="2" maxOccurs="10">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
<xs:element name="active" type="xs:boolean" />
<xs:element name="master" type="xs:boolean" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSMSMP response.

**Table 26** *Result Attributes*

Attribute	Type	Description
active	Boolean	Indicates if this is the active subscription in the multiple subscription. <code>true</code> means active subscription.
master	Boolean	Indicates if this is the master subscription in the multiple subscription. <code>true</code> means master subscription
msisdn	Digit string 5-15 digits. Each digit is 0-9	MSISDN
imsi	Digit string 6-15 digits. Each digit is 0-9	International Mobile Subscriber Identity (IMSI)
mch	One of the following strings: <ul style="list-style-type: none"><li>• LOC</li><li>• USSD</li></ul>	Multiple subscription activation mechanism. <ul style="list-style-type: none"><li>• LOC - Location updating mechanism.</li><li>• USSD - Subscriber procedure based on Unstructured Supplementary Service Data (USSD).</li></ul>

## 3.11 Print Subscriber PDP Context (HEMSPDP)

The Subscriber PDP Context CLI allows requesting of the following data:

- The subscriber PDP context data for a series of connected subscribers (MSISDN or IMSI number series) with any subscriber PDP context defined or with a GPRS subscription profile defined or both.



### 3.11.1 HEMSPDP Request

Command Description:

```
HEMSPDP: [MSISDNS=msisdns  
          IMSIS=imsis] [,RID=rid...];
```

#### Example of a HEMSPDP command

```
HEMSPDP:MSISDNS=9133921;
```

This CLI command obtains the subscriber PDP context data of the connected subscribers with MSISDNS belonging to series 9133921 with any subscriber PDP context defined.

The following table explains the attributes that can be used in a HEMSPDP request.

*Table 27 Command Attributes*

Attribute	Type	Description
IMSI	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series  The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.11.2 HEMSPDP Result File Schema

The following is a result file schema for HEMSPDP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/"
elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="SubscriberPDPContextData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="SubscriberGPRSData" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="msisdn" type="xs:string" />
              <xs:element name="imsi" type="xs:string" />
              <xs:element name="pdpcp" type="xs:integer" minOccurs="0" />
              <xs:element name="SubscriberPDPContext" minOccurs="0" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="apnid" type="xs:integer" minOccurs="0" />
                    <xs:element name="epdpadd" type="xs:string" minOccurs="0" />
                    <xs:element name="eqosid" type="xs:integer" />
                    <xs:element name="vpaa" type="xs:boolean" />
                    <xs:element name="pdpch" type="xs:string" minOccurs="0" />
                    <xs:element name="pdpty" type="xs:string" />
                    <xs:element name="epdpind" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="epdpadd" type="xs:string" minOccurs="0" />
                    <xs:element name="pdpid" type="xs:integer" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The PDPCH attribute is printed only if the PDP context charging characteristics validity indicator (PDPCHVID) identifies it as a valid PDP context charging characteristics.

The following table covers the attributes that can be received in a HEMSPDP response.

**Table 28** Result Attributes

Attribute	Type	Description
apnid	Integer 0-16383	Access Point Name (APN) identifier
epdpadd	One of the following types: <ul style="list-style-type: none"><li>IPv4</li><li>IPv6</li><li>String, ERASE</li></ul>	Extended PDP context address
epdpind	Boolean	Extended PDP context type indicator
eqosid	Integer 0-4095	Extended QOS identifier
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International PSTN/ISDN Number



Attribute	Type	Description
pdpadd	Text string IPv4 or IPv6 address	PDP address
pdpch	Text string in the format of <pdp <i>pi</i> >-<pdp <i>gb</i> >  <pdp <i>pi</i> > = PDP context charging characteristics profile index  Integer 0-15  <pdp <i>gb</i> > = PDP context charging characteristics profile General Packet Radio Service (GPRS) support node behavior index  Integer 0-4095	PDP context charging characteristics
pdp <i>cp</i>	Integer 0-8160	PDP context profile
pdp <i>id</i>	Integer 1-50	PDP context identifier
pdp <i>ty</i>	One of the following strings:  <ul style="list-style-type: none"> <li>• IPV4</li> <li>• PPP</li> <li>• IPV6</li> </ul>	PDP context type
vpaa	Boolean  True = APN allowed to be used in the domain of VPLMN  False = APN not allowed to be used in the domain of VPLMN	Visited PLMN address allowed

## 3.12 Print PDP Context Profile (HEMSPPP)

The PDP Context Profile CLI allows requesting of the following information:

- The PDP contexts data of one, several or all the PDP context profiles.

### 3.12.1 HEMSPPP Request

Command Description:

```
HEMSPPP[:PDPCP=pdpcp...];
```

#### Example of a HEMSPPP command

```
HEMSPPP:PDPCP=2&35;
```

This CLI command obtains the PDP contexts data within PDP context profiles number 2 and 35.

The following table explains the attributes that can be used in a HEMSPPP request:

**Table 29** *Command Attributes*

Attribute	Type	Description
PDP CP	Integer 0-8160	PDP context profile  If no pdpcp is specified, all PDP context profiles are printed.

### 3.12.2

## HEMSPPP Result File Schema

The following is a result file schema for HEMSPPP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="PDPContextProfileData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="PDPContextProfile" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="pdpcp" type="xs:integer" />
              <xs:element name="PDPContext" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="pdpid" type="xs:integer" />
                    <xs:element name="apnid" type="xs:integer" minOccurs="0" />
                    <xs:element name="eqosid" type="xs:integer" />
                    <xs:element name="vpaa" type="xs:boolean" />
                    <xs:element name="pdpch" type="xs:string" minOccurs="0" />
                    <xs:element name="pdpty" type="xs:string" />
                    <xs:element name="epdpind" type="xs:boolean" minOccurs="0" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The PDPCH attribute is printed only if the PDP context charging characteristics validity indicator (PDPCHVID) identifies it as a valid PDP context charging characteristics.

The following table covers the attributes that can be received in a HEMSPPP response.

**Table 30** *Result Attributes*

Attribute	Type	Description
apnid	Integer 0-16383	APN ID
epdpind	Boolean	Extended PDP context type indicator
eqosid	Integer 0-4095	Extended QOS ID



Attribute	Type	Description
pdpch	Text string in the format of <pdp <i>ppi</i> >-<pdp <i>ggb</i> >  <pdp <i>ppi</i> > = PDP context charging characteristics profile index Integer 0-15  <pdp <i>ggb</i> > = PDP context charging characteristics profile General Packet Radio Service (GPRS) support node behavior index Integer 0-4095	PDP context charging characteristics
pdp <i>cp</i>	Integer 0-8160	PDP context profile
pdp <i>id</i>	Integer 1-50	PDP context ID
pdp <i>ty</i>	One of the following strings: <ul style="list-style-type: none"><li>• IPV4</li><li>• PPP</li><li>• IPV6</li></ul>	PDP context type
vpaa	Boolean  True = APN allowed to be used in the domain of VPLMN  False = APN not allowed to be used in the domain of VPLMN	Visited PLMN address allowed

## 3.13 Print Service Center Survey (HEMSSCP)

The Service Center Survey CLI allows requesting of the following information:

- A list of all Service Center addresses and the corresponding number of subscribers whose Message Waiting Data list contains each Service Center address.

**Note:** No Service Center addresses are retrieved for subscribers that belong to Multiple Subscriptions.

### 3.13.1 HEMSSCP Request

Command Description:

```
HEMSSCP:[RID=rid...];
```

#### Example of a HEMSSCP command

```
HEMSSCP;
```

This CLI command obtains all Service Center addresses and the corresponding number of subscribers.



The following table explains the attributes that can be used in a HEMSSCP request:

*Table 31 Command Attributes*

Attribute	Type	Description
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.13.2 HEMSSCP Result File Schema

The following is a result file schema for HEMSSCP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
  attributeFormDefault="qualified">
  <xs:element name="ServiceCenterSurvey">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="ServiceCenter" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="scadd" type="xs:string" />
              <xs:element name="nsub" type="xs:integer" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSSCP response.

*Table 32 Result Attributes*

Attribute	Type	Description
nsub	Integer	Number of subscribers whose Message Waiting Data list contains this SC address
scadd	String in the format of <na>-<ai> <na> is Nature of Address, and can have value 3 for National and 4 for International. <ai> is address information; digit string with acceptable characters 0-9.	SC address

## 3.14 Print Subscriber Data (HEMSSDP)

The Subscriber Data CLI allows requesting of the following information:

- The subscriber identity, the permanent subscriber data, the supplementary service subscriber data, the subscriber location data, and the PDP Context





subscriber data for one, several, range or for connected subscribers belonging to an MSISDN or IMSI number series.

- The subscriber identity and either the permanent subscriber data or the permanent and supplementary service subscriber or the subscriber location data or the PDP Context subscriber data for one, several, range or for connected subscriber belonging to an MSISDN or IMSI number series.

### 3.14.1 HEMSSDP Request

Command Description:

```
HEMSSDP: [MSISDN=msisdn...
           MSISDNS=msisdns
           IMSI=imsi...
           IMSIS=imsis] , [ALL
                          SUDA
                          SSDA
                          LOC
                          PDP] [,RID=rid...];
```

**Note:** If no optional parameter is given, the value `ALL` is used.

#### Example of a HEMSSDP command

```
HEMSSDP:MSISDNS=3491339,SSDA;
```

This CLI command obtains the subscriber identity, the permanent subscriber data, and the supplementary service subscriber data of the connected subscribers with MSISDN belonging to MSISDN number series 3491339.

The following table explains the attributes that can be used in a HEMSSDP request.

*Table 33 Command Attributes*

Attribute	Type	Description
ALL	Text string	All subscriber data
IMSI	Text string, 6-15 digits Each digit is 0-9. If a&b is specified, then a and b must contain the same number of digits.	International Mobile Subscriber Identity (IMSI)
IMSIS	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
LOC	Text string	Subscriber location data



Attribute	Type	Description
MSISDN	Text string, 5-15 digits Each digit is 0-9.  If a&b is specified, then a and b must contain the same number of digits	Mobile Station ISDN (MSISDN)
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
PDP	Text string	Packet Data Protocol (PDP) context subscriber data
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier
SSDA	Text string	Permanent and supplementary service subscriber data
SUDA	Text string	Permanent subscriber data

### 3.14.2 HEMSSDP Result File Schema

The following is a result file schema for HEMSSDP:



```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="SubscriberData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Subscriber" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="SubscriberIdentity">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="msisdn" type="xs:string" minOccurs="0" />
                    <xs:element name="imsi" type="xs:string" minOccurs="0" />
                    <xs:element name="state" type="xs:string" />
                    <xs:element name="authd" type="xs:string" minOccurs="0" />
                    <xs:element name="nam" type="xs:integer" minOccurs="0" />
                    <xs:element name="imeisv" type="xs:string" minOccurs="0" />
                    <xs:element name="rid" type="xs:integer" minOccurs="0" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            <xs:element name="PermanentSubscriberData" minOccurs="0">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="sud" type="xs:string" maxOccurs="unbounded" />
                  <xs:element name="AdditionalMSISDNData" minOccurs="0" maxOccurs="unbounded">
                    <xs:complexType>
                      <xs:sequence>
                        <xs:element name="amsisdn" type="xs:string" />
                        <xs:element name="bs" type="xs:string" minOccurs="0" />
                        <xs:element name="bc" type="xs:integer" />
                      </xs:sequence>
                    </xs:complexType>
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          <xs:element name="SupplementaryServiceData" minOccurs="0">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="BasicServiceGroup" minOccurs="0" maxOccurs="unbounded">
                  <xs:complexType>
                    <xs:sequence>
                      <xs:element name="bsg" type="xs:string" />
                      <xs:element name="SupplementaryService" maxOccurs="unbounded">
                        <xs:complexType>
                          <xs:sequence>
                            <xs:element name="ss" type="xs:string" />
                            <xs:element name="status" type="xs:string" />
                            <xs:element name="ForwardData" minOccurs="0">
                              <xs:complexType>
                                <xs:sequence>
                                  <xs:element name="fnum" type="xs:string" />
                                  <xs:element name="sadd" type="xs:string" minOccurs="0" />
                                </xs:sequence>
                              </xs:complexType>
                            </xs:element>
                            <xs:element name="time" type="xs:integer" minOccurs="0" />
                          </xs:sequence>
                        </xs:complexType>
                      </xs:element>
                    </xs:sequence>
                  </xs:complexType>
                </xs:element>
                <xs:element name="passwordbarred" type="xs:boolean" minOccurs="0" />
                <xs:element name="mcfactive" type="xs:boolean" minOccurs="0" />
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        <xs:element name="LocationData" minOccurs="0">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="CSLocationData" minOccurs="0">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="vlraddress" type="xs:string" />
                    <xs:element name="msrn" type="xs:string" minOccurs="0" />
                    <xs:element name="mscnumber" type="xs:string" minOccurs="0" />
                    <xs:element name="lmsid" type="xs:string" minOccurs="0" />
                    <xs:element name="mscarearestricted" type="xs:boolean" minOccurs="0" />
                    <xs:element name="mspurgedinvlr" type="xs:boolean" minOccurs="0" />
                    <xs:element name="ServicesRestrictedInVLR" minOccurs="0" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            <xs:sequence>
              <xs:element name="rsp" type="xs:string" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

```

The `PDPCH` attribute is printed only if the PDP context charging characteristics validity indicator (`PDPCHVID`) identifies it as a valid PDP context charging characteristics.

The following table covers the attributes that can be received in a `HEMSSDP` response.

**Table 34** *Result Attributes*

Attribute	Type	Description
<code>amsisdn</code>	Text string, 5-15 digits Each digit is 0-9.	Additional Mobile Station ISDN Number
<code>apnid</code>	Integer 0-16383	Access Point Name (APN) identifier
<code>authd</code>	Text string <ul style="list-style-type: none"> <li>• <code>AVAILABLE</code> = Authentication data is available.</li> <li>• <code>NO IMSI IN AUC</code> = Authentication data not available. No International Mobile Subscriber Identity (IMSI) in Authentication Center (AUC) in the last attempt to get authentication data for this mobile subscriber.</li> <li>• <code>NO ACCESS TO AUC</code> = Authentication data not available. No access to AUC in the last attempt to get authentication data for this mobile subscriber.</li> </ul>	Authentication data <sup>(1)</sup>
<code>bc</code>	Integer 0-65534	Public Land Mobile Network (PLMN) Bearer Capability (BC) number
<code>bs</code>	Text string, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6]	Basic Service
<code>bsg</code>	Text string, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6]	Basic Service Group (BSG)
<code>eqosid</code>	Integer 0-4095	Extended Quality of Service (QOS) identifier
<code>fnum</code>	Text string maxlength=15	Forwarded-to number
<code>imeisv</code>	Text string of 16 characters Digits 0-9 and character F are allowed	International Mobile Equipment Identity and Software Version
<code>imsi</code>	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
<code>lmsid</code>	Text string, 0-16 characters	Location Mobile Station Identity (LMSID)
<code>mcfactive</code>	Boolean	Monitoring of Call Forwarding is Active  <code>true</code> means the call forwarding registrations initiated by the mobile subscriber are being monitored
<code>mscarearestrict ed</code>	Boolean	MSC-area restricted  <code>true</code> means that the MSC area is restricted
<code>mscnumber</code>	Text string, 0-16 characters	Mobile Switching Center (MSC) number



Attribute	Type	Description
msisdn	Text string, 5-15 digits Each digit is 0-9.	Mobile Station International PSTN/ISDN Number
msm	Text string, 0-16 characters	Mobile Station Roaming Number (MSRN)
mspurgedinsgsn	Boolean	MS Purged in SGSN <i>true</i> means that the MS has been purged from the SGSN
mspurgedinvlr	Boolean	MS purged in VLR <i>true</i> means that the MS has been purged from the VLR
nam	Integer 0-2 0 = Both GPRS and non-GPRS 1 = Non-GPRS 2 = GPRS	Network Access Mode
pdpadd	IPv4 or IPv6 address	PDP address
pdpch	Text string in the format of <pdppi>-<pdpgb> <pdppi> = PDP context charging characteristics profile index Integer 0-15 <pdpgb> = PDP context charging characteristics profile General Packet Radio Service (GPRS) support node behavior index Integer 0-4095	PDP context charging characteristics
pdpid	Integer 1-50	PDP context identifier
pdpty	IPv4 or IPv6 address Point-to-Point Protocol (PPP)	PDP context type
passwordbarred	Boolean	Password is Barred <i>true</i> means that the mobile subscriber is barred from using password controlled procedures because of password misuse
rsp	Text string, 0-16 characters	Roaming service profile
rid	Integer Value range is 0–31.	Region Identifier
sadd	Text String in the format of <i>typesadd-subadd</i> <i>Typesadd</i> = Type of subaddress <ul style="list-style-type: none"> <li>• 0 NSAP</li> <li>• 1 User specified and even indicator</li> <li>• 2 User specified and odd indicator</li> </ul> <i>Subadd</i> = Subaddress	Forwarded-to subaddress information



Attribute	Type	Description
sgsnnumber	Text string in the format of <na>-<ai>  <na> = Nature of address  3 = National 4 = International  <ai> = Address information  The value of sgsnnumber can also be UNKNOWN, RESTRICTED, or BARRED	Serving General Packet Radio Service (GPRS) Support Node (SGSN) address
ss	Text string, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Supplementary Service
state	Text string <ul style="list-style-type: none"><li>CONNECTED = Subscriber connected</li><li>ADDITIONAL = Additional MSISDN given</li></ul>	State of mobile subscriber
statu	Text string <ul style="list-style-type: none"><li>ACTIVE-OP = The SS is active and operative.</li><li>ACTIVE-QS = The SS is active and quiescent (that is, temporarily inhibited).</li><li>NOT ACTIVE = The SS is not active and not operative.</li></ul>	Status of the SS
sud	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Subscriber Data
time	Integer 5-30	No reply condition time in seconds
vlraddress	Text string in the format of <na>-<ai>  <na> = Nature of address  3 = National 4 = International  <ai> = Address information  The value of vlraddress can also be UNKNOWN, RESTRICTED, or BARRED	Visitor Location Register (VLR) address
vpaa	Boolean	Visited Public Land Mobile Network (VPLMN) address allowed  true means APN is allowed to be used in the domain of VPLMN  false means APN is not allowed to be used in the domain of VPLMN

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



## 3.15 Print Subscriber Location Services Address (HEMSSGP)

The Subscriber Location Services Address CLI allows requesting of the following information:

- All the addresses of the Location Services (LCS) nodes (GMLC, Home GMLC, and Privacy Profile Register) and their corresponding identifiers, assigned to a series of connected subscribers with any LCS address defined.
- One or any combination of the addresses of the Location Services (LCS) nodes (GMLC, Home GMLC, and Privacy Profile Register) and their corresponding identifiers, assigned to a series of connected subscribers with any LCS address defined.

### 3.15.1 HEMSSGP Request

Command Description:

```
HEMSSGP:MSISDNS=msisdns[,GMLC][,HGMLC][,PPR][,RID=rid...];
```

#### Example of a HEMSSGP command

```
HEMSSGP:MSISDNS=349133921,HGMLC,PPR;
```

This CLI command obtains the Home GMLC address, the privacy profile register address, and its corresponding identifiers, for the connected subscribers with MSISDN belonging to series 349133921 with any address defined.

The following table explains the attributes that can be used in a HEMSSGP request.

*Table 35 Command Attributes*

Attribute	Type	Description
GMLC	Text string	Gateway Mobile Location Center (GMLC)
HGMLC	Text string	Home GMLC (HGMLC)
MSISDNS	Digit string, 1-15 digits Each digit is 0-9	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.
PPR	Text string	Privacy Profile Register (PPR)
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier



### 3.15.2 HEMSSGP Result File Schema

The following is a result file schema for HEMSSGP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
  attributeFormDefault="qualified">
  <xs:element name="SubscriberLocationServicesAddressData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="SubscriberLocationServicesAddress" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="msisdn" type="xs:string" />
              <xs:element name="GMLCAddressData" minOccurs="0" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="gmlcid" type="xs:integer" />
                    <xs:element name="gmlca" type="xs:string" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
              <xs:element name="HomeGMLCAddressData" minOccurs="0">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="hgmlcid" type="xs:integer" />
                    <xs:element name="hgmlca" type="xs:string" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
              <xs:element name="PrivacyProfileRegisterAddressData" minOccurs="0">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="pprid" type="xs:integer" />
                    <xs:element name="ppra" type="xs:string" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSSGP response.

**Table 36** *Result Attributes*

Attribute	Type	Description
gmlca	Text string, 3-15 digits Each digit is 0-9.	Gateway Mobile Location Center (GMLC) address
gmlcid	Integer 0-255	GMLC address identifier





Attribute	Type	Description
hgmlca	<p>Text String</p> <p>This parameter allows either an Internet Protocol (IP) version 4 or an IP version 6 address.</p> <p>IP version 4 (IPv4) address:Text string 7-15 characters</p> <p>Expressed as oc1, oc2, oc3, oc4 where:</p> <p>oc1 - oc4</p> <p>Octet 1 - 4</p> <p>Integer 0-255</p> <p>IP version 6 (IPv6) address:</p> <p>Text string 2-39 characters</p> <p>Expressed as hex1:hex2:hex3:hex4:hex5:hex6:hex7:hex8 where:</p> <p>hex1 - hex 8</p> <p>Hexadecimal word 1 - 8</p> <p>Hexadecimal numeral 0-FFFF</p>	Home GMLC (HGMLC) address
hgmlcid	Integer 0-255	Home GMLC address identifier
msisdn	<p>Text string, 5-15 digits</p> <p>Each digit is 0-9.</p>	Mobile Station International PSTN/ISDN Number
ppra	<p>Text String</p> <p>This parameter allows either an Internet Protocol (IP) version 4 or an IP version 6 address.</p> <p>IP version 4 (IPv4) address:</p> <p>Text string 7-15 characters</p> <p>Expressed as oc1, oc2, oc3, oc4 where:</p> <p>oc1 - oc4</p> <p>Octet 1 - 4</p> <p>Integer 0-255</p> <p>IP version 6 (IPv6) address:</p> <p>Text string 2-39 characters</p> <p>Expressed as hex1:hex2:hex3:hex4:hex5:hex6:hex7:hex8 where:</p> <p>hex1 - hex8</p> <p>Hexadecimal word 1 - 8</p> <p>Hexadecimal numeral 0-FFFF</p>	Privacy Profile Register (PPR) address
pprid	Integer 0-255	Privacy Profile Register address identifier



## 3.16 Print Subscriber Tracing (HEMSSTP)

The Subscriber Tracing CLI allows requesting of the following information:

- The initiated trace data, the information related to the subscriber location and the VLR subscriber trace status for all mobile subscribers with trace data initiated.
- The initiated trace data, information related to the subscriber location and the VLR subscriber trace status for the mobile subscribers belonging to an IMSI number series with trace data initiated.

### 3.16.1 HEMSSTP Request

Command Description:

```
HEMSSTP: {  
  IMSIS=imsis  
  IMSIALL  
} [,RID=rid...];
```

#### Example of a HEMSSTP command

```
HEMSSTP:IMSI=349133921;
```

This CLI command obtains the initiated trace data, the information related to the subscriber location and the VLR subscriber trace status for the connected subscribers with IMSI belonging to series 349133921 with trace data initiated.

The following table explains the attributes that can be used in a HEMSSTP request.

*Table 37 Command Attributes*

Attribute	Type	Description
IMSIALL	This parameter has no value.	If <code>IMSIALL</code> is used, all IMSI with initiated trace data is printed.
IMSI	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.16.2 HEMSSTP Result File Schema

The following is a result file schema for HEMSSTP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="SubscriberTracingData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="SubscriberTracing" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="imsi" type="xs:string" />
              <xs:element name="tref" type="xs:integer" />
              <xs:element name="omcid" type="xs:string" minOccurs="0" />
              <xs:element name="bssrt" type="xs:string" />
              <xs:element name="ieg" type="xs:string" />
              <xs:element name="pri" type="xs:string" />
              <xs:element name="vlrts" type="xs:string" />
              <xs:element name="location" type="xs:string" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSSTP response.

**Table 38** *Result Attributes*

Attribute	Type	Description
bssrt	Text string <ul style="list-style-type: none"> <li>BASIC = Basic record</li> <li>HOVER = Handover record</li> <li>RADIO = Radio record</li> </ul>	Base Station System (BSS) record type
ieg	Text string <ul style="list-style-type: none"> <li>ALL</li> <li>CM</li> <li>MM</li> </ul>	Invoking event group ALL means both Connection Management (CM) and Mobility Management (MM) related events.
imsi	Text string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
location	Text string <ul style="list-style-type: none"> <li>BARRED</li> <li>KNOWN</li> <li>PURGED</li> <li>RESTRICTED</li> <li>UNKNOWN</li> </ul>	Subscriber location



Attribute	Type	Description
omcid	Text string in the format of <na>-<npi>-<num>. <na> = Nature of address. 0 = Unknown 1 = International number 2 = National significant number 3 = Network-specific number 4 = Subscriber number 6 = Abbreviated number <npi> = Numbering plan indicator. 0 = Unknown 1 = ISDN or telephony numbering plan 3= Data numbering plan 4 = Telex numbering plan 6 = Land mobile numbering plan 8 = National numbering plan 9 = Private numbering plan <num> = The digits of the address.	Operation and Maintenance Center (OMC) address
pri	Text string Y = Priority N = No priority	Priority indication
tref	Integer 0-65535	Trace reference
vlrts	Text string ACTIVE or DEACT	Visitor Location Register (VLR) subscriber trace status  Indicates if the subscriber trace status is active in VLR (if the trace data initiated for a mobile subscriber are activated in VLR)

## 3.17 Print PRP Data (HESDCDP)

Command prints application common data PRP counters.

### 3.17.1 HESDCDP Request

Command Description:



$$\text{HESDCDP:CC=cc} \left[ \text{, CID=cid} \right] \left[ \begin{array}{l} \text{, GPRS} \\ \text{, RDP=rdp} \\ \text{, GRDP=grdp} \end{array} \right] \left[ \text{, RID=rid...} \right];$$

The following table explains the attributes that can be used in a HESDCDP request. RID parameter is only to be used for "Administration of BSS access capacity" purposes.

**Table 39** *Command Attributes*

Attribute	Type	Description
CC=cc	Digit string 1 - 3 digits ALL - All countries with roaming distribution data	Country code
CID=cid	Numeral 0 - 31	Country identifier Only needed when CC=1 or CC=7
GPRS		General Packet Radio Service (GPRS) roaming distribution data
GRDP=grdp	Numeral 1 - 4 ALL - All GPRS roaming distribution profiles	GPRS roaming distribution profile identifier It is not allowed to enter the value ALL at the same time in parameters GRDP and CC
RID	Numeral 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier The RID parameter is optional but is not to be used unless the Administration of BSS Access Capacity is present. If the Administration of BSS Access Capacity is not used, providing the RID parameter leads to empty results.
RDP=rdp	Numeral 1 - 4 ALL - All roaming distribution profiles	Roaming distribution profile identifier It is not allowed to enter the value ALL at the same time in parameters RDP and CC

### 3.17.2 HESDCDP Result File Schema

The following is a result file schema for HESDCDP:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="CurrentRoamingDistributionData">
<xs:complexType>
<xs:sequence>
<xs:element name="TypeOfRoamingDistributionData" type="xs:string">
<xs:annotation>
<xs:documentation>
Allowed value for TypeOfRoamingDistributionData is GPRS or NON-GPRS
</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="CurrentRoamingDistribution" minOccurs="0"
maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="cc" type="xs:string"/>
<xs:element name="cid" type="xs:integer" minOccurs="0"/>
<xs:choice minOccurs="0">
<xs:element name="rdp" type="xs:string"/>
<xs:element name="grdp" type="xs:string"/>
</xs:choice>
<xs:element name="ccsubscnt" type="xs:integer"/>
<xs:element name="RoamingPLMNData" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="plmnid" type="xs:string"/>
<xs:element name="plmnsubscnt" type="xs:integer"/>
<xs:element name="percsbcs" type="xs:decimal"/>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HESDCDP response.

**Table 40** Result Attributes

Attribute	Type	Description
ccsubscnt	Numeral	Number of subscribers roaming in a country
cid	Numeral 0 - 31	Country identifier Only needed when CC=1 or CC=7
GPRS	String	General Packet Radio Service (GPRS) roaming distribution data
NON-GPRS	String	Non-General Packet Radio Service (GPRS) roaming distribution data
grdp	Numeral 1 - 4	GPRS roaming distribution profile identifier
rdp	Numeral 1 - 4	Roaming distribution profile identifier



Attribute	Type	Description
percsubs	Numerical	Percentage of subscribers roaming in the PLMN. It is calculated using ccsubscnt and plmnsbscnt.
plmnid	Numerical	PLMN identifier
plmnsbscnt	Numerical	Number of subscribers roaming in the PLMN

## 3.18 Print Subscriber Roaming Data (HEMSRLP)

The Subscriber Roaming Data CLI presents a list of all the subscriber identities, the VLR addresses, the SGSN addresses, and the region identifiers of subscribers located out of the HPLMN (outside the country or outside HPLMN but inside country).

### 3.18.1 HEMSRLP Request

Command Description:

```
HEMSRLP: [RID=rid...] [,GPRS];
```

#### Examples of HEMSRLP commands

```
HEMSRLP:RID=rid,GPRS;
```

This CLI command provides a list of all the subscriber identities, the RID and the SGSN addresses of subscribers located out of HPLMN.

```
HEMSRLP:RID=rid;
```

This CLI command provides a list of all the subscriber identities, the RID and the VLR addresses of subscribers located out of HPLMN.

```
HEMSRLP;
```

This CLI command provides a list of all the subscriber identities, the RID, the VLR addresses and the SGSN numbers of subscribers located out of HPLMN.

The following table explains the attributes that can be used in a HEMSRLP request.

**Table 41** *Command Attributes*

Attribute	Type	Description
GPRS		General Packet Radio Service (GPRS)  If given, only SGSN addresses are returned. Otherwise, only VLR addresses are returned.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.18.2

## HEMSRLP Result File Schema

The following is a result file schema for HEMSRLP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
  <xs:element name="SubscriberRoamingData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="SubscriberRoaming" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="imsi" type="xs:string"/>
              <xs:element name="msisdn" type="xs:string"/>
              <xs:element name="vlraddr" type="xs:string" minOccurs="0" />
              <xs:element name="sgsnum" type="xs:string" minOccurs="0" />
              <xs:element name="rid" type="xs:string" minOccurs="0" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSRLP response.

**Table 42** *Result Attributes*

Attribute	Type	Description
IMSI	Text string, 6-15 digits Each digit is 0-9	International Mobile Subscriber Identity
MSISDN	Text string, 5-15 digits Each digit is 0-9	Mobile Station International ISDN Number
VLRADDR	Text String expressed as <na>-<ai>  <na> is the Nature of Address where 3 means National and 4 means International.  <ai> is address information.	VLR Address





Attribute	Type	Description
SGSNNUM	Text String expressed as <na>-<ai>  <na> is the Nature of Address where 3 means National and 4 means International.  <ai> is address information.	SGSN Address
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 3.19 Print Subscribers Location Based on Geographic Area (HEMSSLP)

The Print Subscribers Location based on Geographic Area CLI command presents a list of subscribers (MSISDN, IMSI) located in a specific geographical area.

### 3.19.1 HEMSSLP Request

Command Description:

```
HEMSSLP: + [ SGSNNUM=number | VLRADD=address ] + [, RID=rid...];
```

#### Example of an HEMSSLP command

```
HEMSSLP: VLRADD=3-123456;
```

```
HEMSSLP: SGSNNUM=4-123456, RID=1;
```

The following table explains the attributes that can be used in a HEMSSLP request:

*Table 43 Command Attributes*

Attribute	Type	Description
SGSNNUM	String expressed as <na> or <ai>.  <na> is the Nature of Address where 3 means National and 4 means International  <ai> is the address information (2-15 digits where each is 0-9).	SGSN Number



Table 43 Command Attributes

Attribute	Type	Description
VLRAADD	String expressed as <na>-<ai>.  <na> is the Nature of Address where 3 means National and 4 means International  <ai> is the address information (2-15 digits where each is 0-9).	VLR Address
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 3.19.2 HEMSSLP Result File Schema

The following is the result file schema for HEMSSLP:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs=http://www.w3.org/2001/XMLSchema
  targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/"
  elementFormDefault="qualified" attributeFormDefault="qualified">
  <xs:element name="SubscriberLocationData">
    <xs:complexType>
      <xs:sequence>
        <xs:choice>
          <xs:element name="vlradd" type="xs:string" />
          <xs:element name="sgsnum" type="xs:string" />
        </xs:choice>
        <xs:element name="Subscriber" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="msisdn" type="xs:string" />
              <xs:element name="imsi" type="xs:string" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSSLP response:

Table 44 Result Attributes

Attribute	Type	Description
sgsnum	String expressed as <na>-<ai>.  <na> is the Nature of Address where 3 means National and 4 means International  <ai> is the address information (2-15 digits where each is 0-9).	SGSN Number



Attribute	Type	Description
vlradd	String expressed as <na>-<ai>.  <na> is the Nature of Address where 3 means National and 4 means International  <ai> is the address information (2-15 digits where each is 0-9).	VLR Address
msisdn	Digit String. 5-15 digits, each digit 0-9.	Mobile subscriber ISDN Number
imsi	Digit String. 6-15 digits, each digit 0-9.	International Mobile Subscriber Identity





## 4 MNP Conditional Search Commands

This section covers all MNP conditional search commands available through the Dynamic Activation CLI. All Conditional Search commands generate response files, rather than printing the answer directly to the client.

The following MNP search command is available for printing MNP or FAM data:

- Print MNP subscriber data (HEMSNTP), see Section 4.1 on page 79

### 4.1 Print MNP Subscriber Data (HEMSNTP)

The MNP CLI allows to request the MSISDN, the subscription type, the network prefix, and optionally the subscriber condition and network address, to be used towards the output network for the following cases:

- For all subscriber with MNP or FAM data
- For all imported MSISDNs.
- For all exported MSISDNs
- For all other subscribers (ported subscribers between networks) MSISDNs
- For all MSISDNs with a specific network address
- For a series of MSISDNs with MNP data
- For all imported subscribers in a MSISDNs series
- For all exported subscribers in a MSISDNs series
- For all other subscribers (ported subscribers between networks) subscribers in a MSISDNs series
- For all subscribers in an MSISDNs series with a specific network address
- For a range of MSISDNs or several MSISDNs with MNP data
- For all imported subscribers in a MSISDNs range or for several MSISDNs
- For all exported subscribers in a MSISDNs range or for several MSISDNs
- For all other subscribers (ported subscribers between networks) subscribers in a MSISDNs range or for several MSISDNs
- For all subscribers in an MSISDN range or for several MSISDNs with a specific network address



### 4.1.1 HEMSNTP Request

Command Description:

```
HEMSNTP: [ [ MSISDN=msisdn  
             MSISDNS=msisdns ] , [ IMPORTED  
                                   EXPORTED  
                                   OTHER  
                                   ADDRESS=address ] ]  
[ MSISDN=ALL , [ IMPORTED  
                 EXPORTED  
                 OTHER  
                 ADDRESS=address ] ] ;
```

#### Example of HEMSNTP command

```
HEMSNTP:MSISDN=1234567&&1234569, IMPORTED;
```

This CLI command obtains the MSISDN, subscription type, and network prefix for the imported subscribers defined in CUDb with MSISDN from 1234567 up to 1234569

The following table explains the attributes that can be used in a HEMSNTP request.

*Table 45 Command Attributes*

Attribute	Type	Description
MSISDN	ALL  Digit strings joined by ampersands (& or &&)  Each digit string consists of 5–15 digits. Each digit is 0–9.	If the value is ALL, all subscribers are fetched.  If the value contains two ampersands (&&), the search matches all MSISDN between the two given digits.  If the value contains several ampersands (&), the search matches these specified digits.  Only one MSISDN is allowed.
MSISDNS	Digit string, 1–15 digits  Each digit is 0–9.	MSISDN number series  The beginning of an MSISDN number. The search matches all MSISDN numbers beginning with the specified digits.
IMPORTED	This parameter has no value.	If the parameter is given, all subscribers with IMPORTED subtype are fetched.
EXPORTED	This parameter has no value.	If the parameter is given, all subscribers with EXPORTED subtype are fetched.



Attribute	Type	Description
OTHER	This parameter has no value.	If the parameter is given, all subscribers with OTHER subtype are fetched.
ADDRESS	Digit string, 5-28 digits Each digit is 0–9 or #10–#14	Network address.

## 4.1.2 HEMSNTF Result File Schema

The following is a Result File schema for HEMSNTF:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.ericsson.com/pg/ma/hlr/" elementFormDefault="qualified"
  attributeFormDefault="qualified">
  <xs:element name="MNPSubscriptionData">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="MobileNumberPortability" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="msisdn" type="xs:string"/>
              <xs:element name="subtype" type="xs:string"/>
              <xs:element name="nprefix" type="xs:string"/>
              <xs:element name="subcond" type="xs:string" minOccurs="0"/>
              <xs:element name="address" type="xs:string" minOccurs="0"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSNTF response.

**Table 46** *Result Attributes*

Attribute	Type	Description
msisdn	Digit string, 5–15 digits Each digit is 0–9.	Mobile Station International PSTN/ISDN Number
subtype	Text string <ul style="list-style-type: none"> <li>HOME <sup>(1)</sup></li> <li>IMPORTED = Imported from another network</li> <li>EXPORTED = Exported to another network</li> <li>OTHER = Ported between other networks</li> </ul>	Subscriber type
nprefix	Digit string 1-10 digits Each digit is 0–9 or #10–#14.	Network prefix (used for routing towards an output network)



Attribute	Type	Description
subcond	Text string <ul style="list-style-type: none"><li>• GSM/WCDMA</li><li>• PSTN/ISDN</li></ul>	Subscriber condition
address <sup>(2)</sup>	Digit string, 5-28 digits Each digit is 0–9 or #10-#14	Network address.

(1) *HOME* is only possible if *MSISDN* belongs to a *FAM* subscription.

(2) This parameter is returned if *MSISDN* belongs to a *FAM* subscription.





## 5 AUC Massive Update Commands

This section covers all AUC Massive Update commands. These commands have the purpose of updating the settings of many subscribers. All Massive Update commands generate response files, rather than echoing the answer directly back to the client.

The following AUC Massive Update commands are available:

- Change Authentication and Key Agreement Algorithm (AEMSAAC), Section 5.1 on page 83.
- Change Subscription (AEMSSUC), Section 5.2 on page 86.

### 5.1 Change Authentication and Key Agreement Algorithm (AEMSAAC)

The Change Authentication and Key Agreement Algorithm CLI allows requesting of the following information:

- To update the Authentication and Key Agreement (AKA) Algorithm indicator, either for all defined WCDMA subscribers or for the defined WCDMA subscribers belonging to an IMSI number series with the associated Function set indicator (FSETIND) supporting the two algorithm framework feature.

#### 5.1.1 AEMSAAC Request

Command Description:

$$\text{AEMSAAC:} \left[ \begin{array}{l} \text{IMSI}=\text{imsis} \\ \text{IMSIALL} \end{array} \right], \text{AKAALGIND}=\text{akaalgind}[, \text{RID}=\text{rid} \dots];$$

#### Example of a AEMSAAC command

```
AEMSAAC:IMSI=349255,AKAALGIND=2;
```

This CLI command updates the AKA algorithm indicator to value 2 of all subscribed WCDMA IMSI numbers of the IMSI number series 349255 with associated FSET supporting two algorithm framework.

The following table explains the attributes that can be used in a AEMSAAC request.

**Table 47** *Command Attributes*

Attribute	Type	Description
AKAALGIND	Text String 1 AKA algorithm 2 AKA algorithm	Authentication and Key Agreement (AKA) algorithm indicator
IMSIALL	This parameter has no value.	If <code>IMSTALL</code> is used, all IMSI with initiated trace data is printed.
IMSIS	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 5.1.2 AEMSAAC Result File Schema

The following is a Result File schema for AEMSAAC:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/auc/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="AKAAlgorithmSubscriptionDataLogData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="MassiveUpdateConditions">
<xs:complexType>
<xs:sequence>
<xs:choice>
<xs:element name="imsis" type="xs:string" />
<xs:element name="IMSIALL" />
</xs:choice>
<xs:element name="akaalgind" type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="FailedSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Subscriber" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="imsi" type="xs:string" />
<xs:element name="FaultReason">
<xs:complexType>
<xs:sequence>
<xs:element name="code" type="xs:integer" />
<xs:element name="message" type="xs:string" />
<xs:element name="additionalinfo" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="PendingSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="SubscriberRange" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="imsi" type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Subscriber" minOccurs="0" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="imsi" type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveUpdateStatistics">
<xs:complexType>
<xs:sequence>
<xs:element name="starttime" type="xs:string" />
<xs:element name="stoptime" type="xs:string" />
<xs:element name="NumberOfChangedSubscribers" type="xs:integer" />
<xs:element name="NumberOfFailedSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```



The following table covers the attributes that can be received in a AEMSAAC response.

**Note:** Error codes printed in the `FaultReason` element are related to the update of authentication subscription data for a single subscriber. These errors do not stop the massive update.

If an error stops the massive update, that error code is returned in the generic XML structure, which is outside the previous schema. The generic XML structure for file responses is specified in document *Generic CLI Interface Specification*, Reference [1].

*Table 48 Result Attributes*

Attribute	Type	Description
additionalinfo	Text string	Additional info about the error
akaalgind	Text string <ul style="list-style-type: none"><li>• “1”</li><li>• “2”</li><li>• “N/A”</li></ul>	Authentication and Key Agreement (AKA) algorithm indicator
code	Integer	The error code
imsi	Digit string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
IMSIALL	This parameter has no value.	If <code>IMSIALL</code> is used, all IMSI with initiated trace data is printed.
imsis	Digit string, 1-15 digits Each digit is 0-9	IMSI number series Printed if given as input parameter to the command
message	Text string	The error message
NumberOfChangedSubscribers	Integer	Number of successfully updated subscribers
NumberOfFailedSubscribers	Integer	Number of subscribers where the change failed
starttime	Text string	The start time for the massive change
stoptime	Text string	The stop time for the massive change

## 5.2 Change Subscription (AEMSSUC)

The Change Subscription CLI allows requesting of the following information:

- To update the Authentication Management Field (AMF), either for all defined WCDMA subscribers or for the defined WCDMA subscribers belonging to an IMSI number series with the associated Function set indicator (FSETIND) given as condition.



## 5.2.1 AEMSSUC Request

Command Description:

```
AEMSSUC: [ IMSIS=imsis
            IMSIALL ] , AMF=amf , FSETIND=fsetind[ , RID=rid... ] ;
```

### Example of a AEMSSUC command

```
AEMSSUC: IMSIS=349283 , AMF=14532 , FSETIND=2 ;
```

This CLI updates the AMF to value 14532 of the subscribed WCDMA IMSI numbers of the IMSI number series 349283 and FSETIND 2.

The following table explains the attributes that can be used in a AEMSSUC request.

*Table 49 Command Attributes*

Attribute	Type	Description
AMF	Integer 0-65535	Authentication Management Field (AMF).
FSETIND	Integer 0-31	Function set indicator
IMSIALL	This parameter has no value.	If <b>IMSIALL</b> is used, all IMSI with initiated trace data is printed.
IMSIS	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 5.2.2 AEMSSUC Result File Schema

The following is a Result File schema for AEMSSUC:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/auc/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="SubscriptionDataLogData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="MassiveUpdateConditions">
<xs:complexType>
<xs:sequence>
<xs:choice>
<xs:element name="imsis" type="xs:string" />
<xs:element name="IMSIALL" />
</xs:choice>
<xs:element name="amf" type="xs:integer" />
<xs:element name="fsetind" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="FailedSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Subscriber" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="imsi" type="xs:string" />
<xs:element name="FaultReason">
<xs:complexType>
<xs:sequence>
<xs:element name="code" type="xs:integer" />
<xs:element name="message" type="xs:string" />
<xs:element name="additionalinfo" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveUpdateStatistics">
<xs:complexType>
<xs:sequence>
<xs:element name="starttime" type="xs:string" />
<xs:element name="stoptime" type="xs:string" />
<xs:element name="NumberOfChangedSubscribers" type="xs:integer" />
<xs:element name="NumberOfFailedSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a AEMSSUC response.

**Note:** Error codes printed in the `FaultReason` element are related to the update of authentication subscription data for a single subscriber. These errors do not stop the massive update.

If an error stops the massive update, that error code is returned in the generic XML structure, which is outside the previous schema. The generic XML structure for file responses is specified in document *Generic CLI Interface Specification*, Reference [1].



Table 50 Result Attributes

Attribute	Type	Description
additionalinfo	Text string	Additional info about the error
amf	Integer 0-65535	Authentication Management Field (AMF).
code	Integer	The error code
fsetind	Integer 0-31	Function set indicator
imsi	Digit string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
IMSIALL	This parameter has no value.	If <code>IMSIALL</code> is used, all IMSI with initiated trace data is printed.
imsis	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series Printed if given as input parameter to the command
message	Text string	The error message
NumberOfChangedSubscribers	Text string	Number of successfully updated subscribers
NumberOfFailedSubscribers	Text string	Number of subscribers where the change failed
starttime	Text string	The start time for the massive change
stoptime	Text string	The stop time for the massive change







## 6 HLR Massive Update Commands

This section covers all HLR Massive Update commands. These commands have the purpose of updating the settings of many subscribers. All Massive Update commands generate response files, rather than echoing the answer directly back to the client.

The following HLR Massive Update commands are available:

- Initiate Massive Change of Subscriber Data (HEMSMCI), Section 6.1 on page 91
- End Monitoring Call Forwarding Registration (HEMSMRE), Section 6.2 on page 96
- Initiate Monitoring Call Forwarding Registration (HEMSMRI), Section 6.3 on page 99
- Massive Change of Primary HLR Identity (HEMSPIC), Section 6.4 on page 102.

### 6.1 Initiate Massive Change of Subscriber Data (HEMSMCI)

The Massive Change of Subscriber Data CLI operates on Standard HLR Subscription for Standard Subscriber Type and allows requesting of the following information:

- To initiate a massive update, of one or several SUDs for the connected subscribers belonging to an MSISDN or an IMSI number series and optionally the updating of the VLRs and the SGSNs where the selected subscribers are located.
- To initiate a massive update, of one or several SUDs for the connected subscribers belonging to an MSISDN or an IMSI number series with one or several specified SUDs given as condition and optionally the updating of the VLRs and the SGSNs where the selected subscribers are located.
- To initiate a massive update, of one or several SUDs for all connected subscribers with one or several specified SUDs given as condition and optionally the updating of the VLRs and the SGSNs where the selected subscribers are located.

For more information, see *Function Specification Layered HLR*, Reference [4].



## 6.1.1 HEMSMCI Request

Command Description:

$$\text{HEMSMCI:} \left[ \begin{array}{l} \left[ \begin{array}{l} \text{MSISDNS=msisdns} \\ \text{IMSI=imsi} \end{array} \right] \left[ \text{,SUD=sud...} \right] \\ \text{SUD=sud...} \end{array} \right] \text{,NEWSUD=newsud... [ ,UPDATENET] [ ,RID=rid... ] ;}$$

### Example of a HEMSMCI command

```
HEMSMCI : IMSI=3491683 , SUD=BOIC-1 , NEWSUD=CFU-1 , UPDATENET ;
```

This CLI command provides supplementary service Call Forwarding Unconditional for the connected subscribers that fulfill the following conditions:

- The IMSI number starts with 3491683
- Barring of all outgoing international calls is provided

The VLRs and SGSNs where subscribers are located are updated with the new SUD.

The following table explains the attributes that can be used in a HEMSMCI request.

*Table 51 Command Attributes*

Attribute	Type	Description
IMSI	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series  The beginning of an IMSI number. The search will match all IMSI numbers beginning with the specified digits.  Condition to find subscribers for which to update SUDs
MSISDN	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.  Condition to find subscribers for which to update SUDs
NEWSUD	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	New SUD or the new value of an existing SUD
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier



Attribute	Type	Description
SUD	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Subscriber Data Condition to find subscribers for which to update SUDs
UPDATENET	This parameter has no value.	If UPDATENET is given, an order is sent to update the VLR and SGSN after making the changes

### 6.1.2 HEMSMCI Result File Schema

The following is a Result File Schema for HEMSMCI:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="MassiveChangeOfSubscriberDataLogData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="MassiveUpdateConditions">
<xs:complexType>
<xs:sequence>
<xs:element name="newsud" type="xs:string" maxOccurs="unbounded" />
<xs:choice minOccurs="0">
<xs:element name="msisdns" type="xs:string" />
<xs:element name="imsis" type="xs:string" />
</xs:choice>
<xs:element name="sud" type="xs:string" minOccurs="0" maxOccurs="unbounded" />
<xs:element name="NetworkUpdatingRequested" type="xs:boolean" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="FailedSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Subscriber" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
<xs:element name="FaultReason">
<xs:complexType>
<xs:sequence>
<xs:element name="code" type="xs:integer" />
<xs:element name="message" type="xs:string" />
<xs:element name="additionalinfo" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveUpdateStatistics">
<xs:complexType>
<xs:sequence>
<xs:element name="starttime" type="xs:string" />
<xs:element name="stoptime" type="xs:string" />
<xs:element name="NumberOfChangedSubscribers" type="xs:integer" />
<xs:element name="NumberOfFailedSubscribers" type="xs:integer" />
<xs:element name="NumberOfRemainingSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSMCI response.

**Note:** Error codes printed in the `FaultReason` element are related to the update of data for a single subscriber. These errors do not stop the massive update.

If an error stops the massive update, that error code is returned in the generic XML structure, which is outside the schema above. The generic XML structure for file responses is specified in document *Generic CLI Interface Specification, Reference [1]*.



Table 52 Result Attributes

Attribute	Type	Description
additionalinfo	Text string	Additional info about the error
code	Integer	The error code
imsi	Digit string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
imsis	Digit string, 1-15 digits Each digit is 0-9.	IMSI number series Printed if given as input parameter to the command
message	Text string	The error message
msisdn	Digit string, 5-15 digits Each digit is 0-9.	Mobile station ISDN or ISDN number
msisdns	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series Printed if given as input parameter to the command
NetworkUpdatingRequested	Boolean	true if UPDATENET was given as input parameter to the command
newsud	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	New SUD or the new value of an existing SUD Contains the same values that were sent as input to this command
NumberOfChangedSubscribers	Text string	Number of successfully updated subscribers
NumberOfFailedSubscribers	Text string	Number of subscribers where the change failed
NumberOfRemainingSubscribers	Text string	Number of subscribers remaining when the cancel was executed
starttime	Text string	The start time for the massive change
stoptime	Text string	The stop time for the massive change
sud	String, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Subscriber Data Printed if given as input parameter to the command

### 6.1.3 SUD and NEWSUD Rules for HEMSMCI

The following rules apply for HEMSMCI command:

- The command sent to HLR must not exceed 140 characters.
- Up to 8 SUDs and 8 NEWSUDs can be given in the command.
- If either NEWSUD BS2G or NEWSUD BS2F has value 1, the NEWSUDs BS21, BS22, BS23, BS24, BS25, and BS26 must not have value 1.
- If either NEWSUD BS3G or NEWSUD BS3F has value 1, the NEWSUDs BS31, BS32, BS33, and BS34 must not have value 1.



- NEWSUDs PICI, PICI2 and PICI3 must not have the same value.
- If NEWSUD OBA has value 1, either NEWSUD OBI or NEWSUD OBO must be included in the command and have value 1.
- If NEWSUD OBA has value 0, either NEWSUD OBI or NEWSUD OBO must be included in the command and have value 0.
- If NEWSUDs DEMLPP and MEMLPP are included in the command, NEWSUD DEMLPP must have value lower than value of NEWSUD MEMLPP.
- If both NEWSUD BS2F and NEWSUD BS2G are included in the command, the value of NEWSUD BS2F must be 0 and the value of NEWSUD BS2G must be 1.
- If both NEWSUD BS3F and NEWSUD BS3G are included in the command, the value of NEWSUD BS3F must be 0 and the value of NEWSUD BS3G must be 1.
- If any of NEWSUDs PDPCP, CSP, RSA, and NAM are included in the command, other NEWSUDs must not be included.
- If NEWSUD MRDMCH is included in the command and has value 1, the NEWSUD MRDPID must not be included.

## 6.2 End Monitoring Call Forwarding Registration (HEMSMRE)

The End Monitoring Call Forwarding Registration CLI allows requesting of the following information:

- To deactivate the monitoring of Call Forwarding Registration function for connected subscriber belonging to an MSISDN number series.

### 6.2.1 HEMSMRE Request

Command Description:

```
HEMSMRE:MSISDNS=msisdns[,RID=rid...];
```

#### Example of a HEMSMRE command

```
HEMSMRE:MSISDNS=3492783;
```

This CLI command deactivates the monitoring of call forwarding registration for connected mobile subscribers within the MSISDN number series 3492783.

The following table explains the attributes that can be used in a HEMSMRE request.

*Table 53 Command Attributes*

Attribute	Type	Description
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series  The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits.  Condition to find subscribers for which to update SUDs
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

## 6.2.2 HEMSMRE Result File Schema

The following is a Result File schema for HEMSMRE:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="MonitoringCallForwardingRegistrationDataLogData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="MassiveUpdateConditions">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdns" type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="FailedSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Subscriber" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
<xs:element name="FaultReason">
<xs:complexType>
<xs:sequence>
<xs:element name="code" type="xs:integer" />
<xs:element name="message" type="xs:string" />
<xs:element name="additionalinfo" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveUpdateStatistics">
<xs:complexType>
<xs:sequence>
<xs:element name="starttime" type="xs:string" />
<xs:element name="stoptime" type="xs:string" />
<xs:element name="NumberOfChangedSubscribers" type="xs:integer" />
<xs:element name="NumberOfFailedSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSMRE response.

**Note:** Error codes printed in the `FaultReason` element are related to the monitoring call forwarding registration activation or deactivation for a single subscriber. These errors do not stop the massive update.

If an error stops the massive update, that error code is returned in the generic XML structure, which is outside the previous schema. The generic XML structure for file responses is specified in document *Generic CLI Interface Specification*, Reference [1].



**Table 54 Result Attributes**

Attribute	Type	Description
msisdns	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series Printed if given as input parameter to the command
mcf	Integer 1-2	Monitoring of call
msisdn	Digit string, 5-15 digits Each digit is 0-9.	Mobile station ISDN or ISDN number
imsi	Digit string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
code	Integer	The error code
message	Text string	The error message
additionalinfo	Text string	Additional info about the error
starttime	Text string	The start time for the massive change
stoptime	Text string	The stop time for the massive change
NumberOfChangedSubscribers	Text string	Number of successfully updated subscribers
NumberOfFailedSubscribers	Text string	Number of subscribers where the change failed

## 6.3 Initiate Monitoring Call Forwarding Registration (HEMSMRI)

The Initiate Monitoring Call Forwarding Registration CLI allows requesting of the following information:

- To activate the monitoring of Call Forwarding Registration function for either international or for all forwarded to number registrations for connected subscriber belonging to an MSISDN number series.

### 6.3.1 HEMSMRI Request

Command Description:

```
HEMSMRI:MSISDNS=msisdns,MCF=mcf[,RID=rid...];
```

#### Example of a HEMSMRI command

```
HEMSMRI:MSISDNS=3492783,MCF=2;
```

This CLI command activates the monitoring of call forwarding registration for all forwarded-to number registrations, for connected mobile subscribers within the MSISDN number series 3492783.



The following table explains the attributes that can be used in a `HEMSMRI` request.

*Table 55 Command Attributes*

Attribute	Type	Description
MCF	Integer 1-2 1 = International forwarded-to number registrations 2 = All forwarded-to number registrations	Monitoring of call forwarding registration indicator
MSISDNS	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series The beginning of an MSISDN number. The search will match all MSISDN numbers beginning with the specified digits. Condition to find subscribers for which to update SUDs
RID	Numerical 0-31, see <i>HLR Subscriber Data Type Definitions</i> , Reference [6].	Region Identifier

### 6.3.2 HEMSMRI Result File Schema

The following is a Result File schema for `HEMSMRI`:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="MonitoringCallForwardingRegistrationDataLogData" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="MassiveUpdateConditions">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdns" type="xs:string" />
<xs:element name="mcf" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="FailedSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Subscriber" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
<xs:element name="FaultReason">
<xs:complexType>
<xs:sequence>
<xs:element name="code" type="xs:integer" />
<xs:element name="message" type="xs:string" />
<xs:element name="additionalinfo" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveUpdateStatistics">
<xs:complexType>
<xs:sequence>
<xs:element name="starttime" type="xs:string" />
<xs:element name="stoptime" type="xs:string" />
<xs:element name="NumberOfChangedSubscribers" type="xs:integer" />
<xs:element name="NumberOfFailedSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSMRI response.

**Note:** Error codes printed in the `FaultReason` element are related to the monitoring call forwarding registration activation or deactivation for a single subscriber. These errors do not stop the massive update.

If an error stops the massive update, that error code is returned in the generic XML structure, which is outside the previous schema. The generic XML structure for file responses is specified in document *Generic CLI Interface Specification*, Reference [1].

**Table 56** *Result Attributes*

Attribute	Type	Description
additionalinfo	Text string	Additional info about the error
code	Integer	The error code
imsi	Digit string, 6-15 digits Each digit is 0-9.	International Mobile Subscriber Identity
message	Text string	The error message
msisdn	Digit string, 5-15 digits Each digit is 0-9.	Mobile station ISDN or ISDN number
msisdns	Digit string, 1-15 digits Each digit is 0-9.	MSISDN number series Printed if given as input parameter to the command
NumberOfChangedSubscribers	Text string	Number of successfully updated subscribers
NumberOfFailedSubscribers	Text string	Number of subscribers where the change failed
starttime	Text string	The start time for the massive change
stoptime	Text string	The stop time for the massive change

## 6.4 Massive Change of Primary HLR Identity (HEMSPIC)

The HEMSPIC command performs a massive change of multiple redundancy primary HLR identity for subscribers.

### 6.4.1 HEMSPIC Request

Command Description:

```
HEMSPIC[:MRDPID=mrdpid];
```

The HEMSPIC command triggers the following procedure:

A search is generated to fetch all subscribers with condition  $MRDMCH = 1$ . If the optional parameter MRDPID is present, only subscribers belonging to the given HLR identity and matching the condition are fetched. For each found subscriber a change request is sent towards the HLR server to generate a new Number Series Analysis that results in a new MRDPID for the given subscriber. The subscriber is updated with the new MRDPID value.

MRDMCH is a SUD data and  $MRDMCH = 1$  indicates that the Primary HLR identity is assigned using the Number Series Analysis Function. See *HLR Subscriber Data Type Definitions*, Reference [6], for more information.

#### Examples of a HEMSPIC command



HEMSPIC:MRDPID=2-10;

This CLI command triggers an update of the MRDPID for all subscribers with MRDPID =2-10 (Redundancy group= 2 and HLR identity in the group =10) and MRDMCH = 1.

HEMSPIC;

This CLI command triggers an update of the MRDPID for all subscribers with MRDMCH = 1.

The following table explains the attributes that can be used in a HEMSPIC request.

*Table 57 Command Attributes*

Attribute	Type	Description
MRDPID	String  Expressed as <a>-<b> where a is Redundancy Group with valid numerical values 1-15 and b is HLR Identity with valid numerical values 1-32.  For example 3-18 where 3 refers to Redundancy Group and 18 refers to HLR Identity.	Multiple Redundancy Primary HLR Identity

## 6.4.2 HEMSPIC Result File Schema

The following is a Result File schema for HEMSPIC:



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.ericsson.com/pg/hlr/13.5/" elementFormDefault="qualified"
attributeFormDefault="qualified">
<xs:element name="MassiveChangeOfPrimaryHLRIdentity" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="MassiveUpdateConditions" minOccurs="0" >
<xs:complexType>
<xs:sequence>
<xs:element name="mrdpid" type="xs:string" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="FailedSubscriberUpdates" minOccurs="0">
<xs:complexType>
<xs:sequence>
<xs:element name="Subscriber" maxOccurs="unbounded">
<xs:complexType>
<xs:sequence>
<xs:element name="msisdn" type="xs:string" />
<xs:element name="imsi" type="xs:string" />
<xs:element name="FaultReason">
<xs:complexType>
<xs:sequence>
<xs:element name="code" type="xs:integer" />
<xs:element name="message" type="xs:string" />
<xs:element name="additionalinfo" type="xs:string" minOccurs="0" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MassiveUpdateStatistics">
<xs:complexType>
<xs:sequence>
<xs:element name="starttime" type="xs:string" />
<xs:element name="stoptime" type="xs:string" />
<xs:element name="NumberOfChangedSubscribers" type="xs:integer" />
<xs:element name="NumberOfFailedSubscribers" type="xs:integer" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

The following table covers the attributes that can be received in a HEMSPIC response.

**Note:** Error codes printed in the FaultReason element are related to the update of data for a single subscriber. These errors do not stop the massive update.

If an error stops the massive update, that error code is returned in the generic XML structure, which is outside the previous schema. The generic XML structure for file responses is specified in document *Generic CLI Interface Specification*, Reference [1].

Table 58 Result Attributes

Attribute	Type	Description
additionalinfo	Text string	Additional info about the error



Attribute	Type	Description
code	Integer	The error code
imsi	Digit string, 6-15 digits Each digit is 0-9	International Mobile Subscriber Identity
message	Text String	The error message
mrddid	String Expressed as <a>-<b> where a= 1-15 = Redundancy Group and b = 1-32 = HLR Identity	Multiple Redundancy Primary HLR Identity
msisdn	Digit string, 5-15 digits Each digit is 0-9	Mobile Station ISDN or ISDN number
NumberOfChangedSubscribers	Text string	Number of successfully updated subscribers
NumberOfFailedSubscribers	Text string	Number of subscribers where the change failed
starttime	Text string	The start time for the massive change
stoptime	Text string	The stop time for the massive change







## 7 Faults or Errors

The CLI error codes can appear both directly 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.

### 7.1 General CLI Errors

The following table covers Dynamic Activation internal error codes. They can appear in any CLI responses.

*Table 59 General Dynamic Activation Internal Error Codes*

Error Code	Error Message
1001	Invalid resource.
1002	Invalid XPath.
1003	Unrecognized namespace. No data view associated.
1004	Access denied. Invalid principal or credentials.
1005	Not authorized to perform current operation on selected data view.
1006	Invalid parameter.
1007	The XPath failed to match any data in the processed XML.
1008	Failed to provision data.
1009	Unsupported operation.
1093	Could not process request because of limit of maximum number of concurrent ongoing CLI transactions reached.
1095	Communication error while interacting with a Network Element.
1096	Time-out expired during wait for answer from Network Element.
1097	Failure during processing of the request.
1098	Could not process request because of resource limitation.
1099	System error.
1100	Execution was canceled
1101	External error
1103	License error

### 7.2 Command Mapped Errors

This section covers UDC HLR/AUC Activation Interface errors that are mapped towards certain commands. The errors listed in this section can be assumed to be stopping, unless "(not stopping)" is stated. The errors are listed along with the commands that can return them.

*Table 60 Command Mapped Errors*

Error Code	Error Message	Command
2001	Format error	All CLI commands
2002	UNREASONABLE VALUE	All commands starting with AEMS
		All commands starting with HEMS except HEMSSCP and HEMSSLP
2003	FUNCTION BUSY	AEMSAAC
		AEMSSUC
		HEMSMCI
		HEMSMRE
		HEMSMRI
2004	DATABASE UPDATE ERROR	AEMSAAC (not stopping)
		AEMSSUC (not stopping)
		HEMSMCI (not stopping)
		HEMSMRE (not stopping)
		HEMSMRI (not stopping)
2005	STORAGE IO FAILURE	All commands starting with HEMS except HEMSSCP and HEMSSLP
		All commands starting with AEMS
2013	NO LOG FILE EXIST	AEMSAAC
		AEMSSUC (not stopping)
		HEMSMCI (not stopping)
		HEMSMRI (not stopping)
		HEMSMRE (not stopping)

## 7.3 HLR Errors

This section covers HLR errors that can be sent through UDC HLR/AUC/MNP Activation Interface. The error codes can only appear in certain commands. The commands listed in this section can be assumed to be stopping, unless “(not stopping)” is stated. The following table lists the HLR error codes for CLI.

*Table 61 HLR Error Codes*

Error Code	Error Message	Command
10014	MSISDN NOT DEFINED	HEMSMCI (not stopping)
		HEMSMRE (not stopping)
		HEMSMRI (not stopping)
		HEMSPIC (not stopping)
10015	SUBSCRIBER DATA NOT RECOGNIZED	HEMSMCI



Error Code	Error Message	Command
10031	SUBSCRIBER DATA INCLUDED MORE THAN ONCE	HEMSMCI
10032	SUBSCRIBER DATA NOT APPLICABLE	HEMSMCI
10075	FUNCTIONALITY NOT SUPPORTED BY THIS EXCHANGE	HEMSMRE
		HEMSMRI
10096	ZONE CODE SET NOT DEFINED	HEMSMCI
10122	PICI-IXC RELATION DOES NOT EXIST	HEMSMCI
10149	STORAGE SHORTAGE IN GPRS DATA FILE	HEMSMCI
10151	STORAGE SHORTAGE IN FACSIMILE TRANSMISSION DATA FILE	HEMSMCI
10153	STORAGE SHORTAGE IN DATA CIRCUIT ASYNCHRONOUS DATA FILE	HEMSMCI
10154	STORAGE SHORTAGE IN DATA CIRCUIT SYNCHRONOUS DATA FILE	HEMSMCI
10176	NEW SUBSCRIBER DATA VALUE INCOMPATIBLE	HEMSMCI
10182	GENERAL BEARER SERVICE NOT SUBSCRIBED	HEMSMCI (not stopping)
10189	PARAMETER VALUE NOT SUPPORTED BY THIS EXCHANGE	HEMSMCI
10201	NO SUBSCRIBER WITH THE GIVEN CONDITIONS	HEMSMCI (not stopping) <sup>(1)</sup>
		HEMSMRE
		HEMSMRI
10210	APN NOT VALID	HEMSAPP
10211	APN NOT DEFINED	HEMSAPP
10220	SUBSCRIBER NETWORK ACCESS MODE HAS ALREADY THAT VALUE	HEMSMCI (not stopping)
10221	SUBSCRIBER DATA INCOMPATIBLE WITH STORED SUBSCRIBER DATA	HEMSMCI (not stopping)
		HEMSPIC (not stopping)
10320	NO MORE NEW SUD ACCEPTED WITH GIVEN NEW SUD	HEMSMCI
10383	NAM VALUE NOT ALLOWED	HEMSMCI (not stopping)
10517	NO ROAMING DISTRIBUTION DATA	HESDCDP
10534	CENTRALIZED USER DATABASE NOT REACHABLE	HEMSMCI
		HEMSMRE
		HEMSMRI
		HEMSPIC
10535	RESOURCE LIMITATION	HEMSMCI
		HEMSMRE
		HEMSMRI
		HEMSPIC



Error Code	Error Message	Command
10536	PROVISIONING PROCESS NOT FOUND	HEMSMCI (not stopping)
10600	SUBSCRIBER NOT DEFINED IN THE REGION	HEMSMCI (not stopping)
		HEMSMRI (not stopping)
		HEMSMRE (not stopping)
10803	SUBSCRIBER DATA NOT APPLICABLE FOR THIS SUBSCRIBER	HEMSMCI (not stopping)

(1) This error can appear both as *stopping* and *not stopping*.

## 7.4 AUC Errors

This section covers AUC errors that can be sent through UDC HLR/AUC Activation Interface. The error codes can only appear in certain commands. The commands listed in this section can be assumed to be stopping, unless "(not stopping)" is stated. The following table lists the AUC error codes for CLI.

*Table 62 AUC Error Codes*

Error Code	Error Message	Command
11010	KEY DATA OPERATION IN PROGRESS	AEMSAAC
		AEMSSUC
11011	IMSI NOT SUBSCRIBED	AEMSAAC (not stopping)
		AEMSSUC (not stopping)
11013	SUBSCRIPTION OPERATION IN PROGRESS	AEMSAAC
11016	KEY DATA CHANGE IN PROGRESS	AEMSAAC
		AEMSSUC
11020	CUSTOMER KEY OPERATION IN PROGRESS	AEMSAAC
		AEMSSUC
11024	FUNCTIONALITY NOT SUPPORTED BY THIS EXCHANGE	AEMSAAC
		AEMSSUC
11026	PARAMETER VALUE NOT SUPPORTED BY THIS EXCHANGE	AEMSSUC
11027	FSETIND NOT SUPPORTED	AEMSSUC
11030	OP CHANGE IN PROGRESS	AEMSAAC
		AEMSSUC
11032	AKA ALGORITHM CHANGE IN PROGRESS	AEMSSUC
11039	SUBSCRIPTION DATA CHANGE IN PROGRESS	AEMSAAC
11045	BOP CHANGE IN PROGRESS	AEMSAAC
		AEMSSUC



Error Code	Error Message	Command
11052	NO WCDMA SUBSCRIBER DEFINED FOR SPECIFIED FSET	AEMSAAC
		AEMSSUC
11053	CENTRALIZED USER DATABASE NOT REACHABLE	AEMSAAC
		AEMSSUC
11055	THE SUBSCRIBER DEFINED IS NOT WCDMA	AEMSAAC (not stopping)
		AEMSSUC (not stopping)
11056	THE WCDMA SUBSCRIBER DEFINED HAS NOT THE SPECIFIED FSET	AEMSAAC (not stopping)
		AEMSSUC (not stopping)
11060	SUBSCRIBER NOT DEFINED IN THE REGION	AEMSAAC (not stopping)
		AEMSSUC (not stopping)
11257	TABLE READ RESTRICTED	AEMSAAC
11258	TABLE DOES NOT EXIST	AEMSAAC
11259	FIELD ACCESS RESTRICTED	AEMSAAC
11260	ACCESS TEMPORARILY RESTRICTED	AEMSAAC
11264	CONGESTION IN TABLE	AEMSAAC
11266	CONGESTION IN COMMAND HANDLER	AEMSAAC
11267	CONGESTION IN FORLOPP HANDLER	AEMSAAC
11275	WRONG TABLE TYPE	AEMSAAC
11280	CONGESTION IN APZ	AEMSAAC
11284	CONGESTION IN PRINTOUT HANDLER	AEMSAAC
11288	NO TABLE AREA DEFINED	AEMSAAC
11290	TABLE WORK AREA LOCKED	AEMSAAC
11292	EXTERNAL REPR VALUE NOT DEFINED	AEMSAAC
11293	ERROR AT ACCESS OF SYSTEM TABLE	AEMSAAC
11294	NO FIELD EXTERNALLY REPRESENTED	AEMSAAC
11295	BOTH REPR AND FORMAT UNALLOWED	AEMSAAC
11302	FILE ERROR	AEMSAAC
11303	VOLUME ERROR	AEMSAAC
11304	FILE CONGESTION	AEMSAAC
11305	DEVICE FAULT	AEMSAAC
11306	CONGESTION IN FILE SYSTEM	AEMSAAC
11307	BUFFER CONGESTION	AEMSAAC
11308	END OF MEDIA	AEMSAAC
11310	SYS TAB BUILD-UP IN PROGRESS	AEMSAAC
11311	FUNCTIONALITY NOT SUPPORTED	AEMSAAC
11802	COMMAND RESTRICTED DURING DUMP	AEMSAAC
		AEMSSUC





## 8 Appendix - HLR Classic and HLR-FE Layered Incompatibilities

For information about incompatibilities between UDB R13.0/13.2 and UDC 11B Layered Configuration, see Reference [5].







## Reference List

### Ericsson Documents

- [1] *Generic CLI Interface Specification*, 15/155 19-CSH 109 628 Uen
- [2] *Glossary of Terms and Acronyms*, 0033-CSH 109 628 Uen
- [3] *Library Overview*, 18/1553-CSH 109 628 Uen
- [4] *Function Specification Layered HLR*, 4/155 17-CSH 109 628 Uen
- [5] *User Data Register (UDR) 11B, Network Impact Report from UDB R13.0/13.2 to UDR 11B Layered Configuration*, 2/10948-FGC1011354 Uen
- [6] *HLR Subscriber Data Type Definitions*, 1/198 18-CSH 109 628 Uen