Copyright

Event Detail Record Reference Guide, Release 0.0.0

19.00

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About this Document

Scope
This document explains the final format of all existing types of Event Detail Records (EDRs) created on the Billing Engine and the USMS.

Audience
This guide is written primarily for system administrators of Oracle products.

Pre-requisites
Although there are no pre-requisites for using this guide, familiarity with the target platform would be an advantage.

Related documents
The following documents are related to this document:
- CCS Technical Guide
- CCS User's Guide
- CCS Voucher Management User's Guide
- CCS Task Management User's Guide
- CCS Transfer Management User's Guide
- CCS Feature Node User's Guide

Changes in this document
Here are the changes to the document since the last release.

<table>
<thead>
<tr>
<th>Version no.</th>
<th>Revision Date</th>
<th>Description</th>
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<td>01.00</td>
<td>2008-01-18</td>
<td>Initial release.</td>
</tr>
<tr>
<td>02.00</td>
<td>2008-05-23</td>
<td>Guide reformatted as a reference of all EDR tags for all products, including enhanced indexing.</td>
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CTS 36512 - ACS tags now documented:
- BCOR
- BFT
- DISC
- MCOR
- OA
- TPO
- WALR

CTS 37453 - re-instated SVC_ID tag for successful national call.
CTS 37091 - Time tags are 2dp, RATES can be up to 5dp.

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Added the EDR Overview chapter, explaining the EDRs documented.

03.00 CR36925/CTS36512 - amended CAET, CCET and TCE definitions.
04.00 Added EDR 52 (Periodic Charge).
Added NBTY as a error value for NACK tag.
Added SCRID and SSRID (see “SSRID (screening sub-rule id)” on page 305) tags

05.00 2008-10-21 New periodic charge EDRs for CCS 3.1.5.
06.00 2009-01-12 CTS 42232 - changed DISCOUNT_TYPES tag definition for ccs 3.1.1 onwards
07.00 2009-02-10 CTS 43080 - amended EDR 27 to include:
• OLD_BALANCE_EXPIRIES
• NEW_BALANCE_EXPIRIES
08.00 2009-03-13 CTS 40470 - added MMX tags GPRS, SCA and ESN
09.00 2009-03-30 CTS 42975 - changes to DISCOUNT_TYPE values.
10.00 2009-11-20 CTS 96791 - new edr tags.
11.00 2009-12-01 CTS 97360 - new/old acct state tags for type 8 edr success
12.00 2010-04-09 New wallet life cycle EDR (type 55) added.
Data Charge tags SESSION_SEQUENCE & MID_SEQUENCE added to EDR type 1 & 11
UUC tags TIMED_OUT & RNCF added to EDR type 1 & 11
13.00 2010-06-08 CTS 104995 - Updated TCE description.
CTS 104559 - Added to success types 5,12,25,27,32,49:
• OVERDRAWN_AMOUNT
• REMAINING_CHARGE

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<td>14.00</td>
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<td>Added tags for Periodic Charges EDR 49.</td>
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<tr>
<td>15.00</td>
<td>2010-08-11</td>
<td>CTS 110290 - fixed MID_SESSION tag name from MID_SEQUENCE.</td>
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<tr>
<td>16.00</td>
<td>2010-09-08</td>
<td>bug 10073754 - added reload bonus tags to EDR type 23.</td>
</tr>
<tr>
<td>17.00</td>
<td>2010-09-10</td>
<td>bug 10073754 - more tag changes to EDR type 23.</td>
</tr>
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</table>
| 18.00       | 2010-09-14      | bug 10073754 - more WALLET_TYPE tag from mandatory to optional for EDR type 23.
Before you start using this guide, it is important to understand the terms and typographical conventions used in the documentation. Specialised terms and acronyms are defined in the Glossary at the end of this guide.

<table>
<thead>
<tr>
<th>Formatting convention</th>
<th>Type of information</th>
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<tr>
<td><strong>Special Bold</strong></td>
<td>Items you must select such as menu options, or names of tabs. Emphasis within text. Names of database tables and fields.</td>
</tr>
<tr>
<td><strong>Italics</strong></td>
<td>Name of a document, chapter, topic or other publication.</td>
</tr>
<tr>
<td><strong>Button</strong></td>
<td>The name of a button to click or a key to press. Example: To close the window, either click Close or press Esc.</td>
</tr>
<tr>
<td><strong>Key+Key</strong></td>
<td>Key combinations for which the user must press and hold down one key and then press another. Example: Ctrl+P, or Alt+F4.</td>
</tr>
<tr>
<td><strong>Monospace</strong></td>
<td>Text that you must type and examples of code or standard output.</td>
</tr>
<tr>
<td><strong>variable</strong></td>
<td>Used to indicate variables or text that should be replaced.</td>
</tr>
<tr>
<td><strong>menu option &gt; menu option</strong></td>
<td>Used to indicate the cascading menu option to be selected, or the location path of a file. Example: Operator Functions &gt; Report Functions.</td>
</tr>
<tr>
<td><strong>hypertext link</strong></td>
<td>Used to indicate a hypertext link on an HTML page.</td>
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</tbody>
</table>

The following icons are used as visual cues to draw attention to important information.

**Note:** Indicates useful and complementary information. Explanation, comment, or short expansion of the text object that is intended to catch your attention.

**Tip:** Indicates practical but non-essential information that makes the solution easier to use or operate (e.g. keyboard shortcut, alternative way to perform a step in a procedure, etc).

**Warning:** Indicates a caution. If this information is ignored, it could cause possible and irreversible damage to the equipment, data or software.

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<table>
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<tr>
<th>Document format</th>
<th>This reference document lists EDR tag definitions for all versions of products that can produce EDR records. See chapters for CCS EDR Tag Definitions and UAS Generated EDRs. However the CCS EDR records are organised by EDR type, with each generic type within a chapter, for example Product Type Swap chapter defines the EDR record content of EDR Types 31 and 32.</th>
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<tbody>
<tr>
<td>Document version</td>
<td>Since this reference guide covers all EDRs for all products, a software number is meaningless. To satisfy various standards and formatting, what was the software version is now 0.0.0, with just the guide version increasing with each publication.</td>
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## EDR Overview

### Overview

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EDR Generation

Introduction
EDRs are generated by:

- CCS - on the:
  - UAS (refer to UAS Generated EDRs (on page 259)),
  - billing engine and the SMP (refer to Billing Engine and SMP EDR Definitions (on page 13)).
- ACS - slee_acs on the UAS. Refer to ACS EDRs (on page 263).
- Messaging Manager - xmsTrigger on the UAS. Refer to Messaging Manager EDRs (on page 292).
- Diameter Charging Driver - slee_acs on the UAS. Refer to DCD EDRs (on page 283).

About EDR and CDR
The industry standard abbreviation for a record of the event detail type is EDR (Event Detail Record). Previously, in Oracle documentation, the abbreviation CDR (Call Data Record) was used. Over time, EDR will replace CDR in this and other Oracle documentation.
EDR Tag List

Introduction
The following list identifies all the EDR tags documented within this guide.

EDR tag versions
Where a tag is redefined, for a new version of software, both the new and old
definition is included. Where the new version is used in a CCS EDR, the tag list
will also have both the old and new tags listed.

EDR tags - A
This list covers all application EDRs defined within this guide, starting with the
letter A.

- \textit{ACCOUNT\_TYPE} (on page 192) (Product Type ID)
- \textit{ACCT\_ID} (on page 192) (changed wallet ID)
- \textit{ACCT\_REF\_ID} (on page 192) (changed account ID)
- \textit{ACS\_CUST\_ID} (on page 192) (ACS Customer ID)
- \textit{ACTIVATION\_DATE} (on page 193) (account activation date)
- \textit{ADJUSTMENT} (on page 193) (generated by an adjustment)
- \textit{AIDL} (on page 266) (played announcement ID list)
- \textit{ALPH} (on page 294) (alphabet name)
- \textit{ANS\_TM} (on page 260) (answer time)
- \textit{APPLICATION\_DESC} (on page 193) (application freeform)
- \textit{ASAD} (on page 294) (ip of originating asp)
- \textit{ASPDF} (on page 295) (asp definition)
- \textit{ASPID} (on page 295) (inbound and outbound path)
- \textit{AXAD} (on page 295) (ip connections from asp)

EDR tags - B
This list covers all application EDRs defined within this guide, starting with the
letter B.

- \textit{BAD\_PINS} (on page 193) (number of attempts)
- \textit{BALANCE\_EXPIRIES} (on page 193) (period hours)
- \textit{BALANCE\_TYPES} (on page 194) (account changed or created)
- \textit{BALANCE\_TYPES} (on page 195) (account changed or created) - mid call rate changes
- \textit{BALANCE\_TYPES} (on page 196) (existing account)
- \textit{BILANCE\_TYPES} (on page 196) (pre-call or account creation)
- \textit{BILANCE\_TYPES} (on page 197) (pre-call or account creation) - mid call rate changes
- \textit{BILANCE\_TYPES} (on page 198) (pre-transaction account balances)
- \textit{BARRED\_LIST\_TYPE} (on page 198) (description)
- \textit{BATCH\_DESCRIPTION} (on page 198) (for voucher batch)
- \textit{BCOR} (balance cascade override)
- \textit{BEARER\_TYPE} (on page 260) (bearer type id)
- \textit{BFT} (billing failure treatment)
- \textit{BILLING\_ENGINE\_ID} (on page 198) (BE where account resides)
- \textit{BONUS\_TYPE} (on page 199) (name)
- \textit{BUCKET\_IDS} (on page 199) (within balance type recharged)

\textit{Continued on next page}
EDR Tag List, Continued

EDR tags - C

This list covers all application EDRs defined within this guide, starting with the letter C.

• CA (on page 267) (called address)
• CAET (on page 267) (call attempt elapsed time)
• CALLINGNUM (on page 290) (lcr set calling number)
• CALLINGNOA (on page 289) (noa of callingnum)
• CARRIERNAME (on page 290) (carrier name)
• CARRIERPOS (on page 290) (position of carrier name in hunt list)
• CASCADE (on page 199) (always empty for pi)
• CASCADE_ID (on page 200) (balance type cascade IDs)
• CASCADE_ID (on page 201) (balance type cascade IDs) - mid call rate change
• CBAT (on page 267) (connected by attempt termination)
• CBTD_BALANCE_TYPES (on page 201) (list to apply to discounts)
• CBTD_BALANCE_TYPES (on page 202) (list to apply to discounts) - mid call rate changes
• CBTD_BALANCES (on page 202) (value for each cross balance type)
• CBTD_BALANCES (on page 203) (value for each cross balance type) - mid call rate change
• CBTD.Cascade_ID (on page 203) (used for this call)
• CBTD.Cascade_ID (on page 204) (used for this call) - mid call rate change
• CBTD_COSTS (on page 204) (costs applied to each cross balance type)
• CBTD_COSTS (on page 205) (costs applied to each cross balance type) - mid call rate changes
• CBTD_DISCOUNTS (on page 205) (discounts applied to balance types)
• CBTD_DISCOUNTS (on page 206) (discounts applied to balance types) - mid call rate changes
• CC (on page 268) (carrier code)
• CCET (on page 268) (call connect elapsed time)
• CCTS (on page 268) (call connect timestamp)
• CDR_TYPE (on page 206) (reason for record generation)
• CDR_TYPE (on page 285) (sca reason for record generation)
• CELLID (on page 260) (cell id in the idp)
• CGN (on page 268) (calling network number)
• CGNA (on page 269) (global calling network address)
• CGNN (on page 269) (calling party nature of number)
• CHARGE_EXPIRY (see "CHARGE_EXPIRY (new periodic charge expiry)" on page 206) (new periodic charge expiry)
• CHARGE_NAME (on page 206) (of periodic charge)
• CID (on page 269) (slee call ID)
• CLI (on page 269) (calling logical number)
• CLI (on page 207) (for the account that will be changed)
• CLI (on page 207) (initiating call number)
• CLI (on page 207) (initiating call number) - mid call rate changes

Continued on next page
# EDR Tag List, Continued

## EDR tags - C (continued)

- **CLI** (on page 208) (roaming initiating call number)
- **COMPONENT** (on page 208) (from pi command reference)
- **COSTS** (on page 209) (rated calls)
- **COSTS** (on page 210) (rated calls) - mid call rate changes
- **CPC** (on page 270) (calling party category)
- **CPN** (on page 270) (control plan name)
- **CPNI** (on page 270) (calling private network ID)
- **CPNN** (on page 270) (called party nature of number)
- **CPPI** (on page 271) (calling party presentation restricted indicator)
- **CS** (on page 210) (call status, always D)
- **CS** (on page 211) (call status, always S)
- **CS** (on page 272) (acs connect status)
- **CT_NAME** (on page 211) (credit transfer)
- **CT_TYPE** (on page 211) (credit transfer)
- **CU_NAME** (on page 211) (closed user group)
- **CUST** (on page 273) (customer database ID)

## EDR tags - D

This list covers all application EDRs defined within this guide, starting with the letter D.

- **DADR** (on page 296) (destination address)
- **DATE** (on page 296) (timestamp sms sent to mmx)
- **DELTs** (on page 296) (timestamp of delivery attempt)
- **DIA_RC** (on page 283) (result code)
- **DIA_REQ** (on page 283) (current session message number)
- **DIA_SID** (on page 283) (session id)
- **DIA_TIME** (on page 283) (time ccr sent)
- **DICWR** (on page 211) (Disable Incoming Calls When Roaming)
- **DIMSI** (on page 297) (destination imsi)
- **DISC** (on page 273) (discount override)
- **DISCOUNT** (on page 211) (always zero for pi)
- **DISCOUNT_TYPE** (on page 212) (applied to this call)
- **DISCOUNT_TYPE** (on page 212) (applied to this call) - R*W
- **DISCOUNT_TYPE** (on page 212) (applied to this call) - service discount
- **DISCOUNTS** (on page 213) (for each named event)
- **DISCOUNTS** (on page 213) (rated calls)
- **DISCOUNTS** (on page 214) (rated calls) - mid call rate changes
- **DISTs** (on page 297) (timestamp of discard)
- **DLOC** (on page 297) (terminating party location information)
- **DLVR** (on page 297) (message delivered flag)
- **DSCA** (on page 298) (destination service center address)
- **DSCGT** (on page 298) (destination gt)

*Continued on next page*
**EDR Tag List, Continued**

**EDR tags - D** (continued)
- DSTL (on page 298) (destination gt of fda msc)
- DURATION (on page 215) (call length)
- DURATION (on page 286) (session duration)

**EDR tags - E**
This list covers all application EDRs defined within this guide, starting with the letter E.
- ESN (on page 298) (electronic serial number)
- EVENT_CLASS (on page 215) (list of classes used)
- EVENT_COST (on page 215) (for each named event)
- EVENT_COUNT (on page 215) (for each named event)
- EVENT_NAME (on page 216) (list used for this call)
- EVENT_TIME_COST (on page 216) (for a named event)
- EXPIRED_WALLET (on page 216) (ID of expired wallet)
- EXT(0-9) (on page 273) (extension buffer contents)

**EDR tags - F**
This list covers all application EDRs defined within this guide, starting with the letter F.
- FATS (on page 273) (first announcement timestamp)
- FCA (on page 216) (final call address)
- FROM (on page 286) (sip message from header)

**EDR tags - G**
This list covers all application EDRs defined within this guide, starting with the letter G.
- GPRS (on page 299) (general packet radio service)

**EDR tags - H**
This list covers all application EDRs defined within this guide, starting with the letter H.
- HOST (on page 216) (initiating credit transfer)
- HTS (on page 274) (hunting timestamp)

**EDR tags - I**
This list covers all application EDRs defined within this guide, starting with the letter I.
- IGNORE_Barred (on page 216) (ignore numbers in call barring list)
- IPRI (on page 299) (incoming protocol value)
- IPRN (on page 299) (incoming protocol name)
- ITS (on page 299) (incoming tele service)

**EDR tags - L**
This list covers all application EDRs defined within this guide, starting with the letter L.
- LAC (on page 274) (last account code used)
- LENGTHS (on page 217) (rate durations)
- LENGTHS (on page 218) (rate durations) - mid call rate changes
- LGID (on page 274) (language ID)

Continued on next page
EDR Tag List, Continued

EDR tags - L (continued)

- LI_LOC_NUM (on page 260) (location information for loc_num)
- LOC_NUM (on page 261) (location number in idp)
- LOCAD (on page 218) (additional configuration prefixes)
- LPN (on page 274) (most recent pin entered)

EDR tags - M

This list covers all application EDRs defined within this guide, starting with the letter M.

- MAX_CHARGE (on page 218) (for this call)
- MAX_CHARGE (on page 219) (for this call) - mid call rate changes
- MAX_CONCURRENT (on page 219) (maximum concurrent accesses allowed)
- MCOR (maximum charge override)
- METHOD (on page 286) (sip method of request)
- MFILE (on page 219) (for rating data)
- MID_SESSION (on page 219) (partial EDR)
- MS_CA (on page 300) (smsc address)
- MSGD (on page 300) (message destination)
- MSGR (on page 300) (message reference number)
- MSISDN (on page 220) (account calling number)
- MTYP (on page 300) (message type)

EDR tags - N

This list covers all application EDRs defined within this guide, starting with the letter N.

- NACK (on page 220) (freeform recharge list)
- NACK (on page 221) (long list of codes)
- NACK (on page 221) (short list of codes)
- NEW_ACCOUNT (on page 222) (ID of account type)
- NEW_ACCT_EXPIRY (on page 222) (date after account deleted)
- NEW_ACCT_EXPIRY (on page 222) (date after account deleted)
  If the expiry date is updated then this tag will be present.
- NEW_ACCT_EXPIRY (on page 222) (date after recharge)
- NEW_ACCT_EXPIRY (on page 222) (date after update)
- NEW_ACCT_STATE (on page 223) (after update)
- NEW_ACCT_STATE (on page 222) (always active - A)
- NEW_ACCT_STATE (on page 222) (always frozen - F)
- NEW_ACCT_STATE (on page 223) (always preuse - P)
- NEW_ACCT_STATE (on page 223) (always terminated - T)
- NEW_ACCT_TYPE (on page 223) (ID of account after recharge)
- NEW_ACCT_TYPE (on page 224) (prod type swap)
- NEW_ACTIVE_SVC (on page 224) (account type)
- NEW_BALANCE_EXPIRIES (on page 224) (date after balance update)
- NEW_BALANCE_EXPIRIES (on page 224) (dates after voucher recharge)
- NEW_BARRIED_LIST (on page 225) (of call barring numbers)
- NEW_CHARGE_STATE (on page 225) (periodic charge subscription state)

Continued on next page
EDR Tag List, Continued

EDR tags - N (continued)

- **NEW_FD** (on page 225) (friends destination number)
- **NEW_FF** (on page 225) (list of friends and family numbers)
- **NEW_LAST_USE** (on page 225) (date last used)
- **NEW_WLC_PERIOD** (on page 225) (after update)
- **NEW_WLC_PLAN** (on page 226) (Id)
- **NOAT** (on page 275) (number of attempt terminations)
- **NRQ** (on page 300) (status report requested for message)
- **NRQD** (on page 301) (emi with defined nrq)
- **NT** (on page 275) (network type)

EDR tags - O

This list covers all application EDRs defined within this guide, starting with the letter O.

- **OA** (on page 275) (sccp originating address)
- **OADR** (on page 301) (originating address)
- **OAID** (on page 301) (originating adapter id)
- **OCAU** (on page 301) (acs cause value)
- **OCPI** (on page 276) (original called party)
- **OGEO_ID** (on page 226) (originating geo node id)
- **OIMSI** (on page 301) (originating imsi)
- **OIPA** (on page 301) (originating ip address)
- **OLD_ACCOUNT** (on page 226) (ID of account type)
- **OLD_ACCT_EXPIRY** (on page 226) (date before recharge)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
  If the expiry date is updated then this tag will be present.
- **OLD_ACCT_STATE** (on page 227) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_ACCT_STATE** (on page 227) (P or D before update)
- **OLD_ACCT_STATE** (on page 227) (pre-call)
- **OLD_ACCT_TYPE** (on page 227) (ID of account before recharge)
- **OLD_ACCT_TYPE** (on page 227) (prod type swap)
- **OLD_ACTIVE_SVC** (on page 228) (account type)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **OLD_BARRED_LIST** (on page 228) (of call barring numbers)
- **OLD_CHARGE_STATE** (on page 228) (periodic charge subscription state)
- **OLD_FD** (on page 229) (friends destination number)
- **OLD_FF** (on page 229) (list of friends and family numbers)
- **OLD_WLC_PERIOD** (on page 229) (before update)
- **OLD_WLC_PLAN** (on page 229) (Id)
- **OLOC** (on page 302) (originating party location information)
- **OPERATOR_RELEASED** (on page 229) (commit/revoke reservation)
- **OPRI** (on page 302) (outgoing priority)

Continued on next page
EDR Tag List, Continued

EDR tags - O (continued)

- OPPN (on page 302) (output protocol name)
- OPRT (on page 302) (originating port number)
- ORIGTRUNK (on page 290) (idp location number content)
- OVERDRAWN_AMOUNT (on page 230) (take Balance Negative)
- OTI (on page 276) (originating transaction ID)
- OTS (on page 302) (outgoing tele service)
- OVERRIDDEN_TARIFF_PLAN (on page 230) (ID)

EDR tags - P

This list covers all application EDRs defined within this guide, starting with the letter P.

- PCNA (on page 276) (calling private network address)
- PC_TYPE (on page 230) (periodic charge type)
- PERR (on page 303) (protocol specific error)
- PI (on page 230) (logon name and IP address)
- PID (on page 290) (unix process id)
- PORTED (on page 231) (name of porting carrier)
- PTI (on page 290) (product type id)
- PTNA (on page 276) (private terminating network address)
- PRES (on page 303) (terminating adapter response)
- PRID (on page 303) (protocol identifier)
- PRO_RATE (on page 231) (periodic charge subscription)
- PURCHASING_ACCT_ID (on page 231) (purchasing wallet ID)
- PURCHASING_MSISDN (on page 231) (purchasing CLI)

EDR tags - R

This list covers all application EDRs defined within this guide, starting with the letter R.

- RATES (on page 232) (rated calls)
- RATES (on page 233) (rated calls) - mid call rate changes
- RDPN (on page 261) (redirecting party id)
- RDPPN (on page 261) (normalised redirecting party id)
- RDRES (on page 261) (redirection reason)
- RECIPIENT_ACCT_ID (on page 234) (receiving wallet ID)
- RECIPIENT_MSISDN (on page 234) (receiving CLI)
- RECORD_DATE (on page 234) (creation date)
- REDEEMING_ACCT_REF (on page 234) (ID of account)
- REDEEMING_ACCT_TYPE (on page 234) (name of account type)
- REFERENCE (on page 235) (credit card reference, always cc)
- REFERENCE (on page 235) (from pi reference)
- REFERENCE (on page 235) (operator freeform)
- REFERENCE (on page 236) (voucher freeform)
- REFERENCE (on page 236) (web site reference - ws)

Continued on next page
EDR Tag List, Continued

EDR tags - R (continued)

- RELC (on page 277) (acs release cause)
- RELC (on page 236) (inap release cause)
- RELOAD_BONUS (on page 236) (promotion name)
- RELOAD_BONUS_AMOUNT (on page 236) (amount applied)
- RELOAD_BONUS_EXPIRY (on page 237) (date remaining bonus expires)
- RELOAD_BONUS_LEFT (on page 237) (bonus amount remaining)
- REMAINING_CHARGE (on page 237) (partial Charge)
- REQUEST_URI (on page 286) (uri request content)
- RESL (on page 304) (submit result)
- RESULT (on page 238) (frozen or suspended)
- RESULT (on page 237) (general cause)
- RESULT (on page 238) (pi failure)
- RESULT (on page 238) (voucher redemption, always Success)
- RESULT (on page 238) (web - success)
- REVERSE_CHARGE (on page 238) (generated by a reverse charge)
- REWARD (on page 238) (ID)
- REWARD_AMOUTNS (on page 239) (value of reward)
- REWARD_TYPES (on page 239) (balance types getting reward)
- RNCF (on page 239) (Reservation Not Charged For)
- ROAMING_COUNTRY (on page 239) (name)
- ROAMING_TYPE (on page 240) (of call)
- ROUTEDEST (on page 291) (routing destination for call)

EDR tags - S

This list covers all application EDRs defined within this guide, starting with the letter S.

- SC (on page 262) (service category)
- SCA (on page 304) (service center address)
- SCENARIO (on page 240) (voucher scenario number)
- SCP_ID (on page 240) (where call originated)
- SCRID (on page 304) (screening rule ID of the message)
- SEGN (on page 304) (message segment number)
- SEGR (on page 305) (concatenated message reference)
- SEGT (on page 305) (total message segments)
- SEQUENCE_NUMBER (on page 240) (call identifier)
- SESSION_SEQUENCE (on page 241) (partial EDR)
- SK (on page 277) (service key)
- SN (on page 277) (service number)
- SRCL (on page 305) (source location)
- SSAD (on page 305) (ip of originating smsc)
- SSRID (see "SSRID (screening sub-rule id)" on page 305) (screening sub-rule ID of the message)
- SSTN (on page 306) (smpp service type)
- STATE (on page 241) (of recharge)

Continued on next page
# EDR Tag List, Continued

## EDR tags - S (continued)
- **STRR** (on page 306) (status report request)
- **SUB_STATUS** (on page 306) (subscriber status)
- **SVC_ID** (on page 242) (single tariff rated calls)

## EDR tags - T
This list covers all application EDRs defined within this guide, starting with the letter T.
- **TAID** (on page 307) (terminating adapter id)
- **TARIFF_CODE** (on page 242) (name)
- **TCAU** (on page 307) (acs terminate cause value)
- **TCE** (on page 277) (acs time call ended)
- **TCE** (on page 242) (ccs time call ended)
- **TCS** (on page 278) (acs time call started)
- **TCS** (on page 242) (ccs time call started)
- **TERMINAL** (on page 242) (Network ID)
- **TFN** (on page 279) (tracked feature node list)
- **TGEO_ID** (on page 242) (terminating geo node id)
- **TGNA** (on page 281) (global terminating network address)
- **THRD** (on page 307) (throttled flag)
- **TIME** (on page 291) (creation timestamp of lcr edr)
- **TIMED_OUT** (reservation confirmation)
- **TIMESTAMP** (on page 286) (creation timestamp of scr edr)
- **TLEN** (on page 307) (length of user data in characters)
- **TN** (on page 281) (acs termination number)
- **TN** (on page 243) (ccs called number)
- **TN** (on page 243) (roaming called number)
- **TNNUM** (on page 291) (lcr terminating number)
- **TNNOA** (on page 291) (noa of terminating number)
- **TO** (on page 286) (sip to header content)
- **TPNI** (on page 281) (terminating private network ID)
- **TPO** (on page 281) (tariff plan override)
- **TYPE** (on page 307) (type of edr)
- **TYPE_DESCRIPTION** (on page 243) (voucher type)

## EDR tags - U
This list covers all application EDRs defined within this guide, starting with the letter U.
- **ULEN** (on page 307) (length of user data)
- **USER** (on page 243) (operator logon name)
- **USRD** (on page 308) (user data)

## EDR tags - V
This list covers all application EDRs defined within this guide, starting with the letter V.
- **VOUCHER** (on page 244) (ID of redeemed voucher)
- **VOUCHER** (on page 244) (serial number of redeemed voucher - 3.1.5)

*Continued on next page*
EDR Tag List, Continued

EDR tags - V (continued)

- VOUCHER_NUMBER (on page 244) (redeemed voucher)
- VOUCHER_TYPE (on page 244) (name)
- VP (on page 308) (validity period)

EDR tags - W

This list covers all application EDRs defined within this guide, starting with the letter W.

- WALLET_DELETED (on page 244) (always success - Y)
- WALLET_TYPE (on page 244) (ID of wallet changed)
- WALLET_TYPE (on page 245) (ID of wallet recharged)
- WALR (on page 282) (wallet reference)
Chapter 2

Billing Engine and SMP EDR Definitions

Overview

Introduction

This chapter explains the final format of all existing types of Event Data Records (EDRs) created by the billing engine and the SMP.

EDRs are generated for billing operations that occur as part of a voice call, SMS management interaction or voucher redemption. A number of processes may produce EDRs, and EDRs may be produced on either the billing engine or the SMP.

EDR records are enriched on the SMP by ccsCDRLoader and various plug-in processes.

The ccsCDRLoader has two responsibilities:

• it populates the ccs_be_cdr table of the SMP database with formatted EDR records and
• it moves the inputted EDR files into an output EDR file directory structure.

The plug-in processes may add additional fields to EDR records and may also update various tables on the SMP database. A detailed description of all the plug-in processes is beyond the scope of this document.

In this chapter

This chapter contains the following topics.

CCS EDR Files .............................................................................................. 14
CCS EDR Types ............................................................................................ 16
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EDRs ............................................................................................................. 21
CCS EDR Files

**Introduction**

EDR files will contain multiple EDRs, potentially of different types.

**EDR file names**

EDR file names have the following format:

```
<name of process>-<BEID>-<PID><SecondsSinceEpoch><uSeconds>
```

where:

- `<name of process>` is the name of the process that generated the EDR. One of the following:
  1. bewriter - if the EDR was generated on the billing engine, or
  2. ccsCDRFileGenerator - if the EDR was generated on the SMP
- `<BEID>` is the id of the billing engine that generated the EDR. This will be '0' if the EDR was generated on the SMP.
- `<PID>` is the id of the process that generated the EDR
- `<SecondsSinceEpoch>` indicates the time and date, and
- `<uSeconds>` is microseconds

Example:

```
beWriter-21-18730-1091693014-151357
```

**EDR lines**

Each EDR file consists of a series of single line, newline terminated (Unix style newline - `\n`) EDR records.

**EDR formats**

Each EDR record consists of pipe-separated fields as follows:

```
field1|field2|field3|...|fieldN
```

Each EDR field consists of tag-value pairs using a tag=value format. In the case where there are many values to list, the values will be comma separated. An example of this format follows:

```
tag1=value1|tag2=value2|tag3=value3a,value3b|...|tagN=valueN
```

Example:

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=441234|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=1|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,0.00|DISCOUNTS=0,0|MAX_CHARGE=1|DURATION=60|TN=E441234|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S*W*R|WALLET_TYPE=1
```

**EDR record content**

Each CCS caused EDR record consists of two parts: the “header” tags that exists for all CCS EDR types and additional information that will be different depending on the EDR type. The sequence of all fields in the header and the additional information is not guaranteed.

Non-CCS caused EDR records may have “header” tags, but only as defined in the relevant producing application chapters.

Continued on next page
### CCS EDR Files, Continued

Each field in an EDR is in a particular format, summarised in this table.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
</table>
| Boolean   | Value of "TRUE" or "FALSE"  
**Example:** DICWR=TRUE |
| Date      | A time to the nearest second, in format YYYYMMDDHHmmSS where:
- YYYY = year (e.g. 2004)
- MM = month (e.g. 04 for March)
- DD = day of the month (e.g. 09)
- HH = hours (e.g. 13 for 1pm)
- mm = minutes (e.g. 32)
- SS = seconds (e.g. 00)  
**Example:** A call answered on 16th May 2004 1 minute and 14 seconds after midnight TCS=20040516000114 |
| Integer   | A decimal number. Will never exceed a 32 bit number (11 digits), but is often shorter. Leading zeros will not normally be present.  
**Example:** WALLET_TYPE=1  
In the case where there are multiple values to list, the values will be comma separated.  
**Example:** RATES=50,100 |
| String    | String of characters. Can be any length. Should not contain the characters = or |. May include spaces. When the parameter is a string, the string consists of all the characters after the = sign up to the | separator between this parameter and the next.  
**Example:** DISCOUNT_TYPE=S*W*R| |
| Float     | Float is an integer with digits after a decimal point.  
List      | List is a comma separated list of string values. |

### Notes:
- Tags may not necessarily be in a fixed order, as the order of processing may vary from one transaction sequence to another.
- Some fields will not be present if the transaction sequence does not reach the state that produces them.
# CCS EDR Types

## Introduction

The current CCS EDR types created on the Billing Engine or the USMS are listed in this topic.

## List of EDR types

Each CCS EDR type is summarised in this table.

<table>
<thead>
<tr>
<th>Type</th>
<th>EDR No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGULAR_CALL</td>
<td>1</td>
<td>1 A national voice call that may include IVR interaction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 A roaming voice call - CAMEL originating or Mobile terminating (depends on current software installed – see EDR type 11).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 A USSD Callback call (depends on current software installed – see EDR type 11).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 Failed SMSMO Roaming or National Call.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 Failed SMSMT Roaming or National Call.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Failed OSA Reservation Seconds Charging.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 Reservation Revoke.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 Reservation Commit.</td>
</tr>
<tr>
<td>OPERATOR_UPDATE</td>
<td>2</td>
<td>1 Updating an account using the SMS screens.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 When the account is activated (the account state moves from Pre-Use to Active).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 A freeform recharge using the PI (negative amounts only).</td>
</tr>
<tr>
<td>EXPIRATION</td>
<td>3</td>
<td>1 An account expires.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 An account balance expires.</td>
</tr>
<tr>
<td>RECHARGE</td>
<td>4</td>
<td>1 Successful or failed voucher recharge using the IVR except where the voucher details entered are invalid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Successful or failed voucher recharge using the SMS screens except where the voucher details entered are invalid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Successful voucher recharge using the PI.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 Successful voucher recharge using USSD.</td>
</tr>
<tr>
<td>EVENT</td>
<td>5</td>
<td>1 Successful or failed FnF FnD Config change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Successful or failed PrePaid Data Content charging.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Failed OSA Reservation Named Events charging.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 Failed PrePaid Data Volume/Duration charging.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 Failed SMSMO Roaming or National Call.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Failed SMSMT Roaming or National Call.</td>
</tr>
<tr>
<td>Voice Calls</td>
<td>6</td>
<td>1 Direct Amount Charge</td>
</tr>
<tr>
<td>Control Plan</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Service Invoke</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## CCS EDR Types, Continued

### List of EDR types (continued)

<table>
<thead>
<tr>
<th>Type</th>
<th>EDR No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREEFORM_</td>
<td>8</td>
<td>1 A freeform recharge using the screens.</td>
</tr>
<tr>
<td>RECHARGE</td>
<td></td>
<td>2 A freeform recharge using the PI (positive amounts only).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 A credit card recharge using the PI (WS prefix for value in REFERENCE field).</td>
</tr>
<tr>
<td>CREDITCARD_</td>
<td>9</td>
<td>1 A credit card recharge using the screens.</td>
</tr>
<tr>
<td>RECHARGE</td>
<td></td>
<td>2 A credit card recharge using the PI (CC prefix for value in REFERENCE field).</td>
</tr>
<tr>
<td>VOUCHER_</td>
<td>10</td>
<td>1 A voucher freeform recharge using the screens.</td>
</tr>
<tr>
<td>FREEFORM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROAMING</td>
<td>11</td>
<td>1 This EDR type will only be present if the EDR filter is installed to convert the EDR type from type 1.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 A roaming voice call - CAMEL originating or Mobile terminating.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 A USSD Callback call.</td>
</tr>
<tr>
<td>SHORT_</td>
<td>12</td>
<td>1 Successful SMSMO national call.</td>
</tr>
<tr>
<td>MESSAGE</td>
<td></td>
<td>2 Successful SMSMT national call.</td>
</tr>
<tr>
<td>Named Event</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHORT_</td>
<td>13</td>
<td>1 Successful or failed SMSMO roaming call.</td>
</tr>
<tr>
<td>MESSAGE</td>
<td></td>
<td>2 Successful or failed SMSMT roaming call.</td>
</tr>
<tr>
<td>Tariffed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PREPAID_</td>
<td>14</td>
<td>1 Successful PrePaid Data Volume/Duration charging.</td>
</tr>
<tr>
<td>DATA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOUCHER_</td>
<td>15</td>
<td>1 Successful or failed voucher recharge using the IVR.</td>
</tr>
<tr>
<td>REDEEM</td>
<td></td>
<td>2 Successful or failed voucher recharge using the screens.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Successful voucher recharge using the PI.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 Successful voucher recharge using USSD</td>
</tr>
<tr>
<td>REWARDS</td>
<td>16</td>
<td>1 Successful or failed reward application resulting from a balance update or expiry.</td>
</tr>
<tr>
<td>OSA</td>
<td>21</td>
<td>1 Successful or failed OSA amount based charging using amount-based reservations.</td>
</tr>
<tr>
<td>Reservation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSA</td>
<td>23</td>
<td>1 Successful or failed OSA amount based charging using single amount-based debits/credits.</td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSA</td>
<td>24</td>
<td>1 Successful or failed OSA tariffed based charging using tariffed reservations.</td>
</tr>
</tbody>
</table>
## CCS EDR Types, Continued

### List of EDR types (continued)

<table>
<thead>
<tr>
<th>Type</th>
<th>EDR No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSA Reservation Named Events</td>
<td>25</td>
<td>1 Successful or failed OSA named event based charging using named event reservations.</td>
</tr>
<tr>
<td>OSA Direct Seconds</td>
<td>26</td>
<td>1 Successful or failed OSA tariff based charging using single tariff-based debits/credits.</td>
</tr>
<tr>
<td>OSA Direct Named Events</td>
<td>27</td>
<td>1 Successful or failed OSA named event based charging using single named event-based debits/credits.</td>
</tr>
<tr>
<td>Friends Number Change</td>
<td>28</td>
<td>1 Successful FnF FnD change using PI.</td>
</tr>
<tr>
<td>Disable Incoming Calls when Roaming</td>
<td>29</td>
<td>1 The ‘disable incoming calls when roaming’ check box is changed using the screens.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 The ‘disable incoming calls when roaming’ check box is changed using PI.</td>
</tr>
<tr>
<td>Call Barring</td>
<td>30</td>
<td>1 Successful call barring number changes using PI.</td>
</tr>
<tr>
<td>PRODUCT_ TYPE_SWAP</td>
<td>31</td>
<td>1 The product type changes using the screens (may or may not have an associated cost).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 The product type changes using the IVR (may or may not have an associated cost).</td>
</tr>
<tr>
<td>PRODUCT_ TYPE_SWAP_ BILLED</td>
<td>32</td>
<td>1 The product type changes using the screens where there is an associated cost involved.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 The product type changed using the IVR.</td>
</tr>
<tr>
<td>BAD_PIN</td>
<td>33</td>
<td>1 Invalid voucher number entered using the screens or using the IVR.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Invalid secret code entered using the IVR.</td>
</tr>
<tr>
<td>Standard voucher type recharge</td>
<td>47</td>
<td>1 Successful voucher recharge from a control plan.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Successful voucher recharge from a periodic charge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Successful voucher recharge from a credit transfer.</td>
</tr>
<tr>
<td>Voucher Update</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Periodic charge</td>
<td>49</td>
<td>Successful or failed recharge and/or charge from a periodic charge.</td>
</tr>
<tr>
<td>Periodic charge state change</td>
<td>52</td>
<td>Successful or failed periodic charge state change.</td>
</tr>
</tbody>
</table>

*Continued on next page*
**CCS EDR Types, Continued**

<table>
<thead>
<tr>
<th>Type</th>
<th>EDR No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallet Migration</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Wallet Life Cycle</td>
<td>55</td>
<td>Wallet life cycle plan updates.</td>
</tr>
</tbody>
</table>

**Note:** These EDR types were accurate when the document was written, but additional types may have been created since publication.
EDR Definition

Introduction

Each EDR record contains common header fields and extra information fields that are service specific.

EDR header fields

Each EDR record contains a set of common header fields. Header fields contain generic information that should be available for every call. The standard header fields are listed here:

- **ACCT_ID** (on page 192) (changed wallet ID)
- **ACCT_REF_ID** (on page 192) (changed account ID)
- **BILLING_ENGINE_ID** (on page 198) (BE where account resides)
- **CDR_TYPE** (on page 206) (reason for record generation)
- **RECORD_DATE** (on page 234) (creation date)
- **SCP_ID** (on page 240) (where call originated)
- **SEQUENCE_NUMBER** (on page 240) (call identifier)

Notes

- The sequence of all fields is not guaranteed.
- If the EDR was generated as a result of a change to the account using the SMS screens then the:
  - SCP_ID will be zero.
  - SEQUENCE_NUMBER will be zero.
- EDR records associated with each wallet expiry contain the MSISDN and product types of all affected subscribers.

**Example:** A user may have both a mobile and a data card - each with its own SIM. The mobile and data cards are each represented as subscriber records but they share a single wallet.

If:
- the MSISDN of the mobile card is 01234 and that of the data card is 01235, and
- the product type of the mobile card is 1 (Prepaid Voice) and the product type of the data card is 2 (Prepaid Data).

then the expiry EDR would contain the following fields:

MSISDN=01234,01235
ACCOUNT_TYPE=1,2

EDR extra information fields

The extra information field varies for each type of EDR record and contains additional information specific to the EDR type.

The extra information fields are detailed in the following chapters, based on the type of service provided where for each service the extra information fields are summarised in a table.

EDR Examples

Most of the EDR definitions have one or more examples of what a raw EDR record looks like.

Due to the ever changing use of EDR contents, these examples will usually pertain to the most current version of the software that produces them.

That means tag content examples will not necessarily be correct of previous versions of software.
EDRs

Introduction

This section explains how EDRs are used in CCS. For more information, see CCS Technical Guide.

Viewing active rules for a subscriber

Follow these steps to view the active rules for a subscriber.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open the Subscriber Management screen for the &lt;PrePaidCharging&gt; service.</td>
</tr>
<tr>
<td>2</td>
<td>On the Subscriber tab, select the subscriber record you want, and click Edit.</td>
</tr>
<tr>
<td>3</td>
<td>In the left pane of the Edit Subscriber screen, select the Balance Topup Rules option.</td>
</tr>
</tbody>
</table>

**Result:** The Balance Topup Rules screen appears. The rules that apply to this subscriber are displayed on the screen. You see the name of the rule and the date for the last time it will be executed.

**Note:** This information is read only.

Continued on next page
Here is an example showing EDR creation, transfer to the USMS and processing.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The UAS is the originator of all events that cause Billing Engines to perform tasks during call processing, as the UAS controls how the service responds to network events. The UAS signals events to the UBE Billing Engine using the CCS Billing Engine Protocol. The service sends messages to the Billing Engines via the ccsBeClient interface.</td>
</tr>
<tr>
<td>2</td>
<td>EDRs are written out to disk as ASCII files on the UBE.</td>
</tr>
<tr>
<td>3</td>
<td>The files are transferred to the USMS.</td>
</tr>
</tbody>
</table>

*Continued on next page*
EDRs, Continued

### Dataflow (continued)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The files are indexed and made available to the Java User Screens and external EDR post-processing tools.</td>
</tr>
<tr>
<td>5</td>
<td>CCS screens created EDRs are written by the ccsCDRGenerator process to the same directory the UBE flat files are transferred into. The ccsCDRLoader then loads both the same way.</td>
</tr>
</tbody>
</table>

**Stage 2**

On the BE in /IN/service_packages/eserv.config the following configuration item tells the beWriter which directory to write the finished flat file of EDRs:

BE.beWriter.beCdrOutDirectory = 
"/IN/service_packages/E2BE/logs/CDR"

**Stage 3**

On the BE in /IN/service_packages/eserv.config the following configuration item tells the cmnPushFiles process which directory to upload flat file EDRs from to the SMP:

BE.cmnPushFiles.CDR
  # local BE directory for flat file CDRs
  
  "$d", "/IN/service_packages/E2BE/logs/CDR"

  # upload files to this directory on the SMP
  
  "$r", "/IN/service_packages/CCS/logs/CDR-in"

  # Send files to this SMP hostname
  
  "$h", "ccssmp"

The local directory defined with the -d switch must match the path defined in the BE.beWriter.beCdrOutDirectory configuration item.

Continued on next page
EDRs, Continued

Dataflow (continued)

Stage 4
On the USMS in /IN/service_packages/eserv.config the following configuration item tells the ccsCDRLoader process where to get the uploaded flat file EDRs for processing:

CCS.ccsCDRLoader.inDir = "/IN/service_packages/CCS/logs/CDR-in"

Note: The inDir configuration item must be the same path as the -r switch defined by the BE.cmnPushFiles.CDR section on the Billing Engine.

The following configuration item is where the ccsCDRLoader will place the original flat file EDRs once all the plugins have been run:

CCS.ccsCDRLoader.outDir = "/IN/service_packages/CCS/logs/CDR-store"

The following configuration section on the USMS tell the ccsCDRLoader which plugins to run over every record in the flat file EDRs:

CCS.ccsCDRLoader.pluginLibs = ["libCDRStoreDBPlugin.so", "libFileWriterCDRLoaderPlugin.so"]

The EDR Store DB plugin loads the EDR record from the input flat file into the CCS_BE_CDR table. The data for each record may have been modified by other plugins, so is usually last in the list. If database loading of EDRs is not required, then this plugin should not be configured to achieve the required behaviour.

Other plugins may be available, e.g. to place modified EDRs into a separate flat file than the original ones, or to update the account history etc.

Stage 5
The ccsCDRFileGenerator process writes USMS produced EDRs to a directory for the ccsCDRLoader process to read. The following configuration item in eserv.config should be a different directory to any the ccsCDRLoader uses, as it stores the partially written files until the finished file will be written:

CCS.ccsCDRFileGenerator.TempOutputDirectory = "/IN/service_packages/CCS/logs/CDR-tmp"

The following configuration item should always be set to the same value of the CCS.ccsCDRLoader.inDir parameter and is where the ccsCDRFileGenerator writes the finished flat file EDRs for USMS activity:

CCS.ccsCDRFileGenerator.OutputDirectory = "/IN/service_packages/CCS/logs/CDR-in"

The ccsCDRLoader then reads flat file EDRs produced by the UBE and USMS without knowing where they have come from.

Continued on next page
## EDRs, Continued

This table describes the processes involved in EDR creation, transfer and processing in CCS.

<table>
<thead>
<tr>
<th>Process</th>
<th>Role</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>beWriter</td>
<td>beWriter writes EDRs on the UBE based on UBE Account, Wallet and Balance transactions.</td>
<td><a href="#">UBE Technical Guide</a></td>
</tr>
<tr>
<td>cmnPushFiles</td>
<td>cmnPushFiles reads EDRs on the UBE and sends them to a configured directory on the USMS. Once the files have been sent, the read files on the UBE are archived by cmnPushFiles.</td>
<td>cmnPushFiles</td>
</tr>
<tr>
<td>cmnReceiveFiles</td>
<td>cmnReceiveFiles accepts EDRs sent from cmnPushFiles and writes them to the directory on the USMS specified by cmnReceiveFiles.</td>
<td><a href="#">SMS Technical Guide</a></td>
</tr>
<tr>
<td>ccsCDRLoader</td>
<td>ccsCDRLoader scans the input directory written to by cmnReceiveFiles and loads any EDRs into the CCS_BE_CDRS table in the SMF database.</td>
<td>ccsCDRLoader</td>
</tr>
<tr>
<td>ccsCDRFileGenerator</td>
<td>ccsCDRFileGenerator creates EDRs recording relevant actions taken in the CCS Java Administration screens. Relevant actions include changes to the balances or wallets.</td>
<td>ccsCDRFileGenerator</td>
</tr>
<tr>
<td>ccsCDRTrimDB</td>
<td>ccsCDRTrimDB periodically scans the CCS_BE_CDR table in the SMF and removes records past a specified age.</td>
<td>ccsCDRTrimDB</td>
</tr>
<tr>
<td>ccsCDRTrimFiles</td>
<td>ccsCDRTrimFiles periodically scans the EDR archive directory on the USMS and removes files over a specified age.</td>
<td>ccsCDRTrimFiles</td>
</tr>
</tbody>
</table>

**CCS Java Administration Screens**

The CCS Admin screens enable:

- Subscriber details and Wallets to be updated via EDRs created by ccsCDRGenerator, and
- EDRs in CCS_BE_CDR to be viewed.

---

*Continued on next page*
## EDRs, Continued

### EDR triggers

The following messages, among others, cause the beWriter to write EDRs:

- Call End Notification
- Wallet Recharge Request, and
- Named Event.

### CCS-UBE Protocol overview

The new CCS-UBE protocol is built upon an extensible self-describing message format called Escher. The new protocol is easily extensible, versioned, and allows additions without breaking backward compatibility. The CCS-UBE protocol definition is defined for internal use only.

### Controlling the flow of EDRs

There are configuration items in eserv.config that link where files are read and written to that allow the flow to happen. The out directory of an earlier stage must match the in directory path for the system to function. The defaults at install time are set to work without further modification.

### Checking the values in eserv.config

The current value of a configuration item in eserv.config can be checked by using the Configuration Read tool. To use this tool use the following command:

```
/IN/service_packages/SMS/bin/cmnConfigRead <config item>
```

**Example:**

```
/IN/service_packages/SMS/bin/cmnConfigRead
BE.beWriter.beCdrOutDirectory
```

**gives:**

```
/IN/service_packages/E2BE/logs/CDR
```

### Checking the validity of eserv.config

The validity of an eserv.config file can be checked using:

```
/IN/service_packages/SMS/bin/cmnConfigSyntaxCheck -v
/IN/service_packages/eserv.config
```

**Result:**

```
Syntax check passed for file
/IN/service_packages/eserv.config
```
Chapter 3

Operator Updates

Overview

Introduction

This chapter defines the CCS EDRs for operator updates.

In this chapter

This chapter contains the following topics.

- Account Creation using Screens (EDR 2) ..................................................... 28
- Account Creation using PI (EDR 2) ............................................................... 29
- Account Balance Changes using Screens (EDR 2) ...................................... 30
- Account Balance Changes using PI (EDR 2) ................................................ 31
- Account State Update using Screens (EDR 2) ............................................. 32
- Account State Update using PI (EDR 2) ....................................................... 33
- Account Expiry Update using Screens (EDR 2) ............................................ 34
- Balance Expiry Update using Screens (EDR 2) ............................................ 35
- Account Deleted using Screens (EDR 2) ...................................................... 36
- Account Activated by System (EDR 2) .......................................................... 37
Account Creation using Screens (EDR 2)

Mandatory EDR 2 fields
This list identifies the mandatory EDR record fields for account creation using screens (CDR type 2):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `COSTS` (on page 209) (rated calls)
- `MAX_CONCURRENT` (on page 219) (maximum concurrent accesses allowed)
- `MSISDN` (on page 220) (account calling number)
- `NEW_ACCT_STATE` (on page 223) (always preuse - P)
- `TERMINAL` (on page 242) (Network ID)
- `USER` (on page 243) (operator logon name)

Optional EDR 2 fields
This list identifies the optional EDR record fields for account creation using screens (CDR type 2):

- `ACTIVATION_DATE` (on page 193) (account activation date)
- `NEW_ACCT_EXPIRY` (on page 222) (date after update)

Example EDR 2
`BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|RECORD_DATE=20040803121758|ACCT_ID=20054|ACCT_REF_ID=0|BALANCE_TYPES=1,2,5|BALANCES=0,0,0|COSTS=2000,0,0|ACTIVATION_DATE=0|NEW_ACCT_EXPIRY=0|MAX_CONCURRENT=1|NEW_ACCT_STATE=P|ACS_CUST_ID=1|TERMINAL=192.168.25.108|USER=SU|ACCOUNT_TYPE=1|MSISDN=1394111111`

Note
The sequence of all fields is not guaranteed.
# Account Creation using PI (EDR 2)

## Mandatory EDR 2 fields

This list identifies the mandatory EDR record fields for account creation using PI (CDR type 2):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BLENCE_TYPES` (on page 196) (pre-call or account creation)
- `COSTS` (on page 209) (rated calls)
- `MAX_CONCURRENT` (on page 219) (maximum concurrent accesses allowed)
- `MSISDN` (on page 220) (account calling number)
- `NEW_ACCT_STATE` (on page 223) (always preuse - P)
- `PI` (on page 230) (logon name and IP address)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

## Optional EDR 2 fields

This list identifies the optional EDR record fields for account creation using PI (CDR type 2):

- `ACTIVATION_DATE` (on page 193) (account activation date)
- `NEW_ACCT_EXPIRY` (on page 222) (date after update)

## Example EDR 2

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|
RECORD_DATE=20070703121758|ACCT_ID=20054|ACCT_REF_ID=0|ACCOUNT_TYPE=11|BALANCE_TYPES=1,2,5|BALANCES=0,0,0|COSTS=2000,0,0|ACTIVATION_DATE=0|NEW_ACCT_EXPIRY=0|MAX_CONCURRENT=1|NEW_ACCT_STATE=P|ACS_CUST_ID=1|MSISDN=013947777777|WALLET_TYPE=1|PI= adminAT192.168.25.106
```

## Note

The sequence of all fields is not guaranteed.
Account Balance Changes using Screens (EDR 2)

**Mandatory EDR 2 fields**

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 196) (existing account)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `COSTS` (on page 209) (rated calls)
- `MSISDN` (on page 220) (account calling number)
  When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- `NEW_BALANCE_EXPIRIES` (on page 224) (date after balance update)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before balance update)
- `TERMINAL` (on page 242) (Network ID)
- `USER` (on page 243) (operator logon name)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

**Example EDR 2**

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|RECORD_DATE=20040803122430|ACCT_ID=83|ACCT_REF_ID=83|USER=SU|TERMINAL=123.123.123.123|ACCOUNT_TYPE=1|BALANCE_TYPES=1|BALANCES=2000|COSTS=-1000|OLD_BALANCE_EXPIRIES=|NEW_BALANCE_EXPIRIES=0|ACS_CUST_ID=1|WALLET_TYPE=1|MSISDN=1394111111
```

**Note**

The sequence of all fields is not guaranteed.
### Account Balance Changes using PI (EDR 2)

**Mandatory EDR 2 fields**

This list identifies the mandatory EDR record fields for account balance changes using PI (CDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MSISDN** (on page 220) (account calling number)
  
  When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **PI** (on page 230) (logon name and IP address)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

**Example EDR 2**

```
BILLING_ENGINE_ID=4|SCP_ID=161986004|SEQUENCE_NUMBER=9|CDR_TYPE=2|RECORD_DATE=20070809121732|ACCT_ID=1021|ACCT_REF_ID=1021|PI=adminAT192.168.25.108|WALLET_TYPE=1|ACCOUNT_TYPE=41|OLD_ACCT_EXPIRY=20080901185959|NEW_ACCT_EXPIRY=20080901185959|BALANCE_TYPES=1|BALANCES=124495|COSTS=3322|OLD_BALANCE_EXPIRIES=20080131190018|NEW_BALANCE_EXPIRIES=20080131190018|ACS_CUST_ID=1|MSISDN=11012
```

**Note**

The sequence of all fields is not guaranteed.
### Mandatory EDR 2 fields

This list identifies the mandatory EDR record fields for account state update using screens (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MSISDN** (on page 220) (account calling number)
  - When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)

### Optional EDR 2 fields

This table lists the optional fields for account state update using screens (EDR type 2):

- **ACTIVATION_DATE** (on page 193) (account activation date)
- **MAX_CONCURRENT** (on page 219) (maximum concurrent accesses allowed)
- **NEW_ACCT_STATE** (on page 223) (after update)
- **NEW_LAST_USE** (on page 225) (date last used)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)

### Example EDR 2

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|RECORD_DATE=20040803122626|ACCT_ID=83|ACCT_REF_ID=83|USER=S|TERMINAL=192.168.25.108|ACCOUNT_TYPE=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|BALANCE_TYPES=1|BALANCES=3000|COSTS=0|OLD_BALANCE_EXPIRIES=|NEW_BALANCE_EXPIRIES=0|ACS_CUST_ID=1|MSISDN=1394111111
```

### Note

The sequence of all fields is not guaranteed.
# Account State Update using PI (EDR 2)

## Mandatory EDR 2 fields

This list identifies the mandatory EDR record fields for account state update using PI (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MSISDN** (on page 220) (account calling number)
  - When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_ACCT_STATE** (on page 223) (after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **PI** (on page 230) (logon name and IP address)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

## Optional EDR 2 fields

This list identifies the optional EDR record fields for account state update using PI (EDR type 2):

- **ACTIVATION_DATE** (on page 193) (account activation date)
- **MAX_CONCURRENT** (on page 219) (maximum concurrent accesses allowed)
- **NEW_LAST_USE** (on page 225) (date last used)

## Example EDR 2

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|RECORD_DATE=20070719085005|ACCT_ID=83|ACCT_REF_ID=83|ACCOUNT_TYPE=24|PI=adminAT192.168.25.106|OLD_ACCT_STATE=F|NEW_ACCT_STATE=A|OLD_ACCT_EXPIRY=0|NEW_ACCT_EXPIRY=0|BALANCE_TYPES=1|BALANCES=3000|COSTS=0|OLD_BALANCE_EXPIRIES=0|NEW_BALANCE_EXPIRIES=0|ACS_CUST_ID=1|WALLET_TYPE=1|MSISDN=01892111111
```

## Note

The sequence of all fields is not guaranteed.
Account Expiry Update using Screens (EDR 2)

Mandatory EDR 2 fields

This list identifies the mandatory EDR record fields for account expiry update using screens (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MSISDN** (on page 220) (account calling number)
  When the cosCDRLoader plugin is installed on the USMS, this tag will be present.
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)
- **WALLET_DELETED** (on page 244) (always success - Y)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

Optional EDR 2 fields

This list identifies the optional EDR record fields for account state expiry using screens (EDR type 2):

- **ACTIVATION_DATE** (on page 193) (account activation date)
- **MAX_CONCURRENT** (on page 219) (maximum concurrent accesses allowed)

Example EDR 2

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=13954|CDR_TYP E=2|RECORD_DATE=20040803123349|ACCT_ID=83|ACCT_REF_ID=83|USER=SU|TE RMINAL=192.168.25.108|ACCOUNT_TYPE=1|OLD_ACCT_EXPIRY=20050803120000
|NEW_ACCT_EXPIRY=20051103120000|BALANCE_TYPES=1|BALANCES=3000|COSTS =0|WALLET_DELETED=N|OLD_ACCT_STATE=A|OLD_BALANCE_EXPIRIES=|NEW_BALA NCE_EXPIRIES=0|ACS_CUST_ID=1|WALLET_TYPE=1|MSISDN=1394111111
```

Note

The sequence of all fields is not guaranteed.
Balance Expiry Update using Screens (EDR 2)

### Mandatory EDR 2 fields

This list identifies the mandatory EDR record fields for balance expiry update using screens (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) *(Product Type ID)*
- **ACS_CUST_ID** (on page 192) *(ACS Customer ID)*
- **BALANCE_TYPES** (on page 196) *(existing account)*
- **BALANCES** (on page 198) *(pre-transaction account balances)*
- **COSTS** (on page 209) *(rated calls)*
- **MSISDN** (on page 220) *(account calling number)*  
  When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- **NEW_BALANCE_EXPIRIES** (on page 224) *(date after balance update)*
- **OLD_BALANCE_EXPIRIES** (on page 228) *(dates before balance update)*
- **TERMINAL** (on page 242) *(Network ID)*
- **USER** (on page 243) *(operator logon name)*

**Example EDR 2**

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139540184|CDR_TYPE=2|RECORD_DATE=20040803123655|ACCT_ID=83|ACCT_REF_ID=83|USER=S\U|ACCOUNT_TYPE=1|BALANCE_TYPES=1,2|BALANCES=1000,3500|COSTS=0,0|OLD_BALANCE_EXPIRIES=20040903122900,20040805122900|NEW_BALANCE_EXPIRIES=20040910122900,20040812122900|ACS_CUST_ID=1|MSISDN=1394111111
```

**Note**

The sequence of all fields is not guaranteed.
Account Deleted using Screens (EDR 2)

Mandatory EDR 2 fields

This list identifies the mandatory EDR record fields for account deleted using screens (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACTIVATION_DATE** (on page 193) (account activation date)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MAX_CONCURRENT** (on page 219) (maximum concurrent accesses allowed)
- **MSISDN** (on page 220) (account calling number)
  When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)
- **WALLET_DELETED** (on page 244) (always success - Y)

Example EDR 2

```
BILLING_ENGINE_ID=21|SCP_ID=175677458|SEQUENCE_NUMBER=139540184|CDR_TYPE=2|RECORD_DATE=20070716112330|ACCT_ID=20056|ACCT_REF_ID=20056|
USER=SU|TERMINAL=192.168.25.108|BALANCE_TYPES=1,2,3,4,5|BALANCES=10000,0,0,0,0|COSTS=10000,0,0,0,0|WALLET_DELETED=Y|ACTIVATION_DATE=20040703122900|NEW_ACCT_EXPIRY=0|MAX_CONCURRENT=1|OLD_ACCT_STATE=P|ACCOUNT_TYPE=1|NEW_BALANCE_EXPIRIES=0|OLD_BALANCE_EXPIRIES=20040811100354|OLD_ACCT_EXPIRY=20040811100357|MSISDN=13941111111
```

Note

The sequence of all fields is not guaranteed.
Account Activated by System (EDR 2)

Mandatory EDR 2 fields

The account will be activated by the system when a call is made on an account that is in a 'PreUse' state.

This list identifies the mandatory EDR record fields for an account activated by the system (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MSISDN** (on page 220) (account calling number)

When the cosCDRLoader plugin is installed on the USMS, this tag will be present.

- **NEW_ACCT_EXPIRY** (on page 222) (date after account deleted)
  - If the expiry date is updated then this tag will be present.
- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
  - If the expiry date is updated then this tag will be present.
- **OLD_ACCT_STATE** (on page 227) (P or D before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)

Example EDR 2

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|RECORD_DATE=20040806100354|ACCT_ID=20064|ACCT_REF_ID=20026|
BALANCE_TYPES=1|NEW_ACCT_STATE=A|OLD_ACCT_STATE=P|ACS_CUST_ID=1|ACCOUNT_TYPE=1|MSISDN=1394111111
```

Note

The sequence of all fields is not guaranteed.
Voucher Recharges

Overview

Introduction

This chapter defines the CCS EDRs for voucher recharges.

In this chapter

This chapter contains the following topics.

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Voucher Recharge Succeeds using Screens (EDR 4,15)

**Introduction**

Two or three EDRs are created for this event:

- a type 4
- a type 15, and
- a type 16 when the Rewards plugin is being used. See Rewards chapter for the EDR definition.

**Mandatory EDR 4 fields**

This list identifies the mandatory EDR record fields for voucher recharge succeeds using screens (EDR type 4):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 196) (existing account)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `BATCH_DESCRIPTION` (on page 198) (for voucher batch)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `NEW_ACCT_EXPIRY` (on page 222) (date after update)
- `NEW_BALANCE_EXPIRIES` (on page 224) (dates after voucher recharge)
- `OLD_ACCT_EXPIRY` (on page 226) (dates before update)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before voucher recharge)
- `TERMINAL` (on page 242) (Network ID)
- `TYPE_DESCRIPTION` (on page 243) (voucher type)
- `USER` (on page 243) (operator logon name)

If they are not present, the ccsCDRLoader voucher plug-in does not process the EDR. For more information about ccsCDRLoader, see Process descriptions.

This list identifies the optional EDR record fields for voucher recharge succeeds using screens (EDR type 4):

- `REFERENCE` (on page 236) (voucher freeform)
- VOUCHER - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)

**Mandatory EDR 15 fields**

This list identifies the mandatory EDR record fields for voucher recharge succeeds using screens (EDR type 15):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_EXPIRIES` (on page 193) (period hours)
- `BALANCE_TYPES` (on page 196) (existing account)
- `COSTS` (on page 209) (rated calls)
- `REDEEMING_ACCT_REF` (on page 234) (ID of account)
- `RESULT` (on page 238) (voucher redemption, always Success)
- VOUCHER - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)

*Continued on next page*
This list identifies the optional EDR record fields for voucher recharge succeeds using screens (EDR type 15):

- BATCH_DESCRIPTION (on page 198) (for voucher batch)
- NEW_ACCOUNT (on page 222) (ID of account type)
- OLD_ACCOUNT (on page 226) (ID of account type)
- REDEEMING_ACCT_TYPE (on page 234) (name of account type)
- SCENARIO (on page 240) (voucher scenario number)
- TYPE_DESCRIPTION (on page 243) (voucher type)

If the account is activated, the following fields are generated:

- NEW_ACCT_STATE (on page 222) (always active - A)
- OLD_ACCT_STATE (on page 227) (P or D before update)

If the account has a promotional reload bonus configured, the following fields are generated (EDR types 4, 15 and 16):

- RELOAD_BONUS (on page 236) (promotion name)
- RELOAD_BONUS_AMOUNT (on page 236) (amount applied)
- RELOAD_BONUS_EXPIRY (on page 237) (date remaining bonus expires)
- RELOAD_BONUS_LEFT (on page 237) (bonus amount remaining)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

The sequence of all fields is not guaranteed.
## Voucher Recharge Succeeds using IVR (EDR 4,15)

### Introduction

Two or three EDRs are created for this event:

- a type 4
- a type 15, and
- a type 16 when the Rewards plugin is being used. See Rewards chapter for the EDR definition.

### Mandatory EDR 4 fields

This list identifies the mandatory EDR record fields for voucher recharge succeeds using IVR (EDR type 4):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 196) (existing account)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `BATCH_DESCRIPTION` (on page 198) (for voucher batch)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `NEW_BALANCE_EXPIRIES` (on page 224) (dates after voucher recharge)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before voucher recharge)
- `TYPE_DESCRIPTION` (on page 243) (voucher type)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

### Optional EDR 4 fields

If they are not present, the ccsCDRLoader voucher plug-in does not process the EDR. For more information about ccsCDRLoader, see Process descriptions.

This list identifies the optional EDR record fields for voucher recharge succeeds using IVR (EDR type 4):

- `REFERENCE` (on page 236) (voucher freeform)
- VOUCHER - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)

### Mandatory EDR 15 fields

This list identifies the mandatory EDR record fields for voucher recharge succeeds using IVR (EDR type 15):

- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_EXPIRIES` (on page 193) (period hours)
- `BALANCE_TYPES` (on page 196) (existing account)
- `COSTS` (on page 209) (rated calls)
- `REDEEMING_ACCT_REF` (on page 234) (ID of account)
- `RESULT` (on page 238) (voucher redemption, always Success)
- VOUCHER - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)

### Optional EDR 15 fields

This list identifies the optional EDR record fields for voucher recharge succeeds using IVR (EDR type 15):

- `BATCH_DESCRIPTION` (on page 198) (for voucher batch)
- `NEW_ACCOUNT` (on page 222) (ID of account type)

*Continued on next page*
Optional EDR 15 fields (continued)

- `OLD_ACCOUNT` (on page 226) (ID of account type)
- `REDEEMING_ACCT_TYPE` (on page 234) (name of account type)
- `SCENARIO` (on page 240) (voucher scenario number)
- `TYPE_DESCRIPTION` (on page 243) (voucher type)

Account Activated additional fields

If the account is activated, the following fields are generated:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (P or D before update)

Reload Bonus additional fields

If the account has a promotional reload bonus configured, the following fields are generated (EDR types 4, 15 and 16):

- `RELOAD_BONUS` (on page 236) (promotion name)
- `RELOAD_BONUS_AMOUNT` (on page 236) (amount applied)
- `RELOAD_BONUS_EXPIRY` (on page 237) (date remaining bonus expires)
- `RELOAD_BONUS_LEFT` (on page 237) (bonus amount remaining)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

Example EDR 4

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=488297|
CDR_TYPE=4|RECORD_DATE=20040804103532|ACCT_ID=61|ACCT_REF_ID=61|
ACS_CUST_ID=1|VOUCHER=7609766|VOUCHER_NUMBER=0000000081|CS=S|
WALLET_TYPE=1|ACCOUNT_TYPE=1|BALANCE_TYPES=1|BALANCES=1005800|
COSTS=-1000|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=0
```

Example EDR 15

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=488297|
CDR_TYPE=15|RECORD_DATE=20040803152952|ACCT_ID=61|ACCT_REF_ID=61|
ACS_CUST_ID=1|REDEEMING_ACCT_REF=61|VOUCHER=7609766|VOUCHER_NUMBER=0000000081|RESULT=Success
```

Note

The sequence of all fields is not guaranteed.
Voucher Recharge Succeeds using PI (EDR 4,15)

Introduction
Two or three EDRs are created for this event:
- a type 4
- a type 15, and
- a type 16 when the Rewards plugin is being used. See Rewards chapter for the EDR definition.

Mandatory EDR 4 fields
This list identifies the mandatory EDR record fields for voucher recharge succeeds using PI (EDR type 4):
- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 196) (existing account)
- BALANCES (on page 198) (pre-transaction account balances)
- CS (on page 211) (call status, always S)
- NEW_BALANCE_EXPIRIES (on page 224) (dates after voucher recharge)
- OLD_BALANCE_EXPIRIES (on page 228) (dates before voucher recharge)
- PI (on page 230) (logon name and IP address)
- TYPE_DESCRIPTION (on page 243) (voucher type)
- WALLET_TYPE (on page 244) (ID of wallet changed)

Optional EDR 4 fields
If they are not present, the ccsCDRLoader voucher plug-in does not process the EDR. For more information about ccsCDRLoader, see Process descriptions.
This list identifies the optional EDR record fields for voucher recharge succeeds using PI (EDR type 4):
- REFERENCE (on page 236) (voucher freeform)
- VOUCHER - one of:
  - VOUCHER (on page 244) (ID of redeemed voucher)
  - VOUCHER (on page 244) (serial number of redeemed voucher - 3.1.5)

Mandatory EDR 15 fields
This list identifies the mandatory EDR record fields for voucher recharge succeeds using PI (EDR type 15):
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_EXPIRIES (on page 193) (period hours)
- BALANCE_TYPES (on page 196) (existing account)
- COSTS (on page 209) (rated calls)
- REDEEMING_ACCT_REF (on page 234) (ID of account)
- RESULT (on page 238) (voucher redemption, always Success)
- VOUCHER - one of:
  - VOUCHER (on page 244) (ID of redeemed voucher)
  - VOUCHER (on page 244) (serial number of redeemed voucher - 3.1.5)

Optional EDR 15 fields
This list identifies the optional EDR record fields for voucher recharge succeeds using PI (EDR type 15):
- BATCH_DESCRIPTION (on page 198) (for voucher batch)
- NEW_ACCOUNT (on page 222) (ID of account type)

Continued on next page
Voucher Recharge Succeeds using PI (EDR 4,15), Continued

### Optional EDR 15 fields
(continued)

- *OLD_ACCOUNT* (on page 226) (ID of account type)
- *REDEEMING_ACCT_TYPE* (on page 234) (name of account type)
- *SCENARIO* (on page 240) (voucher scenario number)
- *TYPE_DESCRIPTION* (on page 243) (voucher type)

### Account Activated additional fields
If the account is activated, the following fields are generated:

- *NEW_ACCT_STATE* (on page 222) (always active - A)
- *OLD_ACCT_STATE* (on page 227) (P or D before update)

### Reload Bonus additional fields
If the account has a promotional reload bonus configured, the following fields are generated (EDR types 4, 15 and 16):

- *RELOAD_BONUS* (on page 236) (promotion name)
- *RELOAD_BONUS_AMOUNT* (on page 236) (amount applied)
- *RELOAD_BONUS_EXPIRY* (on page 237) (date remaining bonus expires)
- *RELOAD_BONUS_LEFT* (on page 237) (bonus amount remaining)

### MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- *MSISDN* (on page 220) (account calling number)

#### Example EDR 4

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=2|CDR_TYPE=4|
RECORD_DATE=20040804111124|ACCT_ID=61|ACS_CUST_ID=1|
VOUCHER=7609766|VOUCHER_NUMBER=0000000086|CS=S|PI=adminAT192.168.25 .106|
WALLET_TYPE=1|ACCOUNT_TYPE=1|BALANCE_TYPES=1|BALANCES=1006800|
COSTS=-1000|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=0
```

#### Example EDR 15

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=2|
CDR_TYPE=15|RECORD_DATE=20040803152952|ACCT_ID=61|ACS_CUST_ID=1|
REDEEMING_ACCT_REF=61|VOUCHER=7609766|VOUCHER_NUMBER=0000000086|RESULT=Success
```

### Note
The sequence of all fields is not guaranteed.
### Voucher Recharge Succeeds using USSD (EDR 4,15)

#### Introduction

Two or three EDRs are created for this event:

- a type 4
- a type 15, and
- a type 16 when the Rewards plugin is being used. See Rewards (on page 53) chapter for the EDR definition.

#### Mandatory EDR 4 fields

This list identifies the mandatory EDR record fields for voucher recharge succeeds using USSD (EDR type 4):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 196) (existing account)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `NEW_BALANCE_EXPIRIES` (on page 224) (dates after voucher recharge)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before voucher recharge)
- `TYPE_DESCRIPTION` (on page 243) (voucher type)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

If they are not present, the ccsCDRLoader voucher plug-in does not process the EDR. For more information about ccsCDRLoader, see Process descriptions.

#### Optional EDR 4 fields

This list identifies the optional EDR record fields for voucher recharge succeeds using USSD (EDR type 4):

- `REFERENCE` (on page 236) (voucher freeform)
- VOUCHER - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)

#### Mandatory EDR 15 fields

This list identifies the mandatory EDR record fields for voucher recharge succeeds using USSD (EDR type 15):

- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_EXPIRIES` (on page 193) (period hours)
- `BALANCE_TYPES` (on page 196) (existing account)
- `COSTS` (on page 209) (rated calls)
- `REDEEMING_ACCT_REF` (on page 234) (ID of account)
- `RESULT` (on page 238) (voucher redemption, always Success)
- VOUCHER - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)

#### Optional EDR 15 fields

This list identifies the optional EDR record fields for voucher recharge succeeds using USSD (EDR type 15):

- `BATCH_DESCRIPTION` (on page 198) (for voucher batch)
- `NEW_ACCOUNT` (on page 222) (ID of account type)
- `OLD_ACCOUNT` (on page 226) (ID of account type)

*Continued on next page*
Voucher Recharge Succeeds using USSD (EDR 4,15), Continued

Optional EDR 15 fields (continued)

- **REDEEMING_ACCT_TYPE** (on page 234) (name of account type)
- **SCENARIO** (on page 240) (voucher scenario number)
- **TYPE_DESCRIPTION** (on page 243) (voucher type)

Account Activated additional fields

If the account is activated, the following fields are generated:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (P or D before update)

Reload Bonus additional fields

If the account has a promotional reload bonus configured, the following fields are generated (EDR types 4, 15 and 16):

- **RELOAD_BONUS** (on page 236) (promotion name)
- **RELOAD_BONUS_AMOUNT** (on page 236) (amount applied)
- **RELOAD_BONUS_EXPIRY** (on page 237) (date remaining bonus expires)
- **RELOAD_BONUS_LEFT** (on page 237) (bonus amount remaining)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Example EDR 4

```
BILLING_ENGINE_ID=1|SCP_ID=114207220|SEQUENCE_NUMBER=139450184|CDR_TYPE=4|
RECORD_DATE=20041216162449|ACCT_ID=46|ACCT_REF_ID=46|ACS_CUST_ID=1|
VOUCHER=7609766|VOUCHER_NUMBER=23439221779469|CS=S|
USSD=VOUCHER_REDEEMED|ACCOUNT_TYPE=23|BALANCE_TYPES=1|
BALANCES=113495,113495|COSTS=1,-20500|NEW_BALANCE_EXPIRIES=,|
OLD_BALANCE_EXPIRIES=0,0|RELOAD_BONUS_AMOUNT=500|
RELOAD_BONUS_LEFT=113494
```

Example EDR 15

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=2|
CDR_TYPE=15|RECORD_DATE=20040803152952|ACCT_ID=61|
ACCT_REF_ID=61|ACS_CUST_ID=1|REDEEMING_ACCT_REF=61|
VOUCHER=7609766|VOUCHER_NUMBER=0000000086|RESULT=Success
```

Note

The sequence of all fields is not guaranteed.
Voucher Recharge Fails using Screens or IVR (EDR 4)

Introduction
In this scenario, recharge fails because the account is in either a frozen or suspended state.
A type 4 EDR is created for this event.

Mandatory EDR 4 fields
This list identifies the mandatory EDR record fields for voucher recharge failures using screens or IVR (EDR type 4):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BATCH_Description (on page 198) (for voucher batch)
- CS (on page 210) (call status, always D)
- NACK (on page 221) (long list of codes)
- RESULT (on page 238) (frozen or suspended)
- TERMINAL (on page 242) (Network ID)
- TYPE_Description (on page 243) (voucher type)
- USER (on page 243) (operator logon name)

If they are not present, the ccsCDRLoader voucher plug-in does not process the EDR. For more information about ccsCDRLoader, see Process descriptions.

Optional EDR 4 fields
This list identifies the optional EDR record fields for voucher recharge failures using screens or IVR (EDR type 4):

- REFERENCE (on page 236) (voucher freeform)
- SCENARIO (on page 240) (voucher scenario number)
- VOUCHER - one of:
  - VOUCHER (on page 244) (ID of redeemed voucher)
  - VOUCHER (on page 244) (serial number of redeemed voucher - 3.1.5)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

Example EDR 4
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=4|
RECORD_DATE=20040804105430|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1|
VOUCHER=7609766|VOUCHER_NUMBER=0000000085|CS=D|RESULT=Frozen Wallet

Note
The sequence of all fields is not guaranteed.
**Voucher Recharge Fails using Screens or IVR (EDR 15,33)**

### Introduction
The recharge fails because the voucher details entered are invalid or the voucher is in an invalid state. There are two EDR records created for this event:
- a EDR of type 15, and
- a EDR of type 33.

### Mandatory EDR 15 fields
This list identifies the mandatory EDR record fields for voucher recharge failure using screens or IVR (EDR type 15):
- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `REDEEMING_ACCT_REF` (on page 234) (ID of account)
- `RESULT` (on page 237) (general cause)
- `VOUCHER` - one of:
  - `VOUCHER` (on page 244) (ID of redeemed voucher)
  - `VOUCHER` (on page 244) (serial number of redeemed voucher - 3.1.5)
- `VOUCHER_NUMBER` (on page 244) (redeemed voucher)

### Optional EDR 15 fields
This list identifies the optional EDR record fields for voucher recharge failures using screens or IVR (EDR type 15):
- `BATCH_DESCRIPTION` (on page 198) (for voucher batch)
- `TERMINAL` (on page 242) (Network ID)
- `TYPE_DESCRIPTION` (on page 243) (voucher type)
- `USER` (on page 243) (operator logon name)

### Mandatory EDR 33 fields
This list identifies the mandatory EDR record fields for voucher recharge failure using screens or IVR (EDR type 33):
- `ACS_CUST_ID` (on page 192)
- `BAD_PINS` (on page 193)
- `TERMINAL` (on page 242)
- `USER` (on page 243)

### Optional EDR 33 fields
This list identifies the optional EDR record fields for voucher recharge failures using screens or IVR, when the account is frozen due to the maximum number of bad pins being exceeded (EDR type 33):
- `NEW_ACCT_STATE` (on page 222) (frozen)
- `OLD_ACCT_STATE` (on page 226) (active)

### MSISDN additional fields
If the MSISDN cssCDRLoader plugin is installed on the USMS, the following fields will be present:
- `MSISDN` (on page 220) (account calling number)

### Example
```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=488298|CDR_TYPE=15|RECORD_DATE=20070719113914|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1|REDEEMING_ACCT_REF=61|VOUCHER=8709766|VOUCHER_NUMBER=0000000086|BATCH_DESCRIPTION=Test
Batch|TYPE_DESCRIPTION=STANDARD|RESULT=Failed
Auth|ACCOUNT_TYPE=24|USER=SU|TERMINAL=192.168.25.108
```

*Continued on next page*
Voucher Recharge Fails using Screens or IVR (EDR 15,33), Continued

Example EDR 33

| BILLING_ENGINE_ID=21 | SCP_ID=366273322 | SEQUENCE_NUMBER=488298 | CDR_TYPE=33 | RECORD_DATE=20070703145823 | ACCT_ID=61 | ACCT_REF_ID=61 | BAD_PINS=1 | ACS_CUST_ID=1 | ACCOUNT_TYPE=24 | USER=SU | TERMINAL=192.168.25.108 |

Note

The sequence of all fields is not guaranteed.
Voucher Type Recharge

Introduction

A type 47 EDR is created for this event.

Note: The type 47 EDR contains fields identical to a type 4. It is given its own EDR number because it is handled differently from a normal voucher recharge. A type 4 EDR generates a recharge notification from the EDR loader plugin. In the case of the type 47, the notification is generated by the process calling it. This process can be a Control Plan, Periodic Charge or a Credit Transfer.

Mandatory EDR 47 fields

This list identifies the mandatory EDR record fields for voucher type recharge (EDR type 47):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 196) (existing account)
- BALANCES (on page 198) (pre-transaction account balances)
- COSTS (on page 209) (rated calls)
- CS (on page 211) (call status, always S)
- NEW_BALANCE_EXPIRIES (on page 224) (dates after voucher recharge)
- OLD_BALANCE_EXPIRIES (on page 228) (dates before voucher recharge)
- VOUCHER_TYPE (on page 244) (name)

Optional EDR 47 fields

This list identifies the optional EDR record fields for voucher type recharge (EDR type 47):

- NEW_ACCT_TYPE (on page 223) (ID of account after recharge)
- OLD_ACCT_TYPE (on page 227) (ID of account before recharge)
Chapter 5

Rewards

Overview

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## Reward Application Successful (EDR 16)

### Introduction
All successful balance updates (for example: rated voice calls, voucher recharge, balance update or balance expiry, by whatever mechanism) may produce an EDR type 16 if the Rewards Plugin is being used and Rewards are configured, in addition to the normal update EDR(s).

### Mandatory EDR 16 fields
This list identifies the mandatory EDR record fields for successful reward application using any of screens, IVR, PI or USSD (EDR type 16):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `NEW_BALANCE_EXPIRIES` (on page 224) (dates after voucher recharge)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before voucher recharge)
- `RESULT` (on page 238) (voucher redemption, always Success)
- `REWARD` (on page 238) (ID)
- `REWARD_AMOUNTS` (on page 239) (value of reward)
- `REWARD_TYPES` (on page 239) (balance types getting reward)

### Optional EDR 16 fields
This list identifies the optional EDR record fields for successful reward application using any of screens, IVR, PI or USSD (EDR type 16):

- `NEW_ACCT_EXPIRY` (on page 222) (date after update)
- `OLD_ACCT_EXPIRY` (on page 226) (dates before update)

### Account Activated additional fields
If the account is activated, the following fields are generated:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (P or D before update)

### Reload Bonus additional fields
If the account has a promotional reload bonus configured, the following fields are generated (EDR types 4, 15 and 16):

- `RELOAD_BONUS` (on page 236) (promotion name)
- `RELOAD_BONUS_AMOUNT` (on page 236) (amount applied)
- `RELOAD_BONUS_EXPIRY` (on page 237) (date remaining bonus expires)
- `RELOAD_BONUS_LEFT` (on page 237) (bonus amount remaining)

### MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

### Example EDR 16
```
ACCOUNT_TYPE=46|ACCT_ID=2129|ACCT_REF_ID=2124|ACS_CUST_ID=1|
BALANCES=5,7|BALANCE_TYPES=2,5|BILLING_ENGINE_ID=4|CDR_TYPE=16|
COSTS=-2,-1|CS=S|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|
RECORD_DATE=20071101114725|RESULT=Success|REWARD=62|
REWARD_AMOUNTS=1,2|REWARD_TYPES=5,2|SCP_ID=110537566|SEQUENCE_NUMBE
R=139450184
```

### Note
The sequence of all fields is not guaranteed.
Reward Application Fails using Screens or IVR (EDR 16)

Introduction
All failed balance updates (for example: voucher recharge, balance update or balance expiry, by screens or IVR) will produce an EDR type 16 if the Rewards Plugin is being used, in addition to the normal update failed EDR(s).

Mandatory EDR 16 fields
This list identifies the mandatory EDR record fields for reward application failures using screens or IVR (EDR type 16):

- ACS_CUST_ID (on page 192) (ACS Customer ID)
- CS (on page 210) (call status, always D)
- NACK (on page 221) (long list of codes)
- REWARD (on page 238) (ID)
- REWARD_AMOUNTS (on page 239) (value of reward)
- REWARD_TYPES (on page 239) (balance types getting reward)

Optional EDR 16 fields
This list identifies the optional EDR record fields for reward application failures using screens or IVR (EDR type 16):

- BATCH_DESCRIPTION (on page 198) (for voucher batch)

MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

Example EDR 16
ACCT_ID=2129|ACCT_REF_ID=2124|ACS_CUST_ID=1|BILLING_ENGINE_ID=4|CDR_TYPE=16|CS=D|NACK=BDVR|RECORD_DATE=20071101115704|RESULT=Invalid Balance Type|REWARD=62|REWARD_AMOUNTS=1,2|REWARD_TYPES=5,27|SCP_ID=110537566|SEQUENCE_NUMBER=139450184

Note
The sequence of all fields is not guaranteed.
# Chapter 6

## Voice Calls

### Overview

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Successful National Call (EDR 1)

This list identifies the mandatory EDR record fields for a successful national call (CDR type 1):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** - use one of:
  - **BALANCE_TYPES** (on page 194) (account changed or created)
  - **BALANCE_TYPES** (on page 195) (account changed or created) - mid call rate changes
- **BALANCES** - use one of:
  - **BALANCES** (on page 196) (pre-call or account creation)
  - **BALANCES** (on page 197) (pre-call or account creation) - mid call rate changes
- **CASCADE_ID** - use one of:
  - **CASCADE_ID** (on page 200) (balance type cascade IDs)
  - **CASCADE_ID** (on page 201) (balance type cascade IDs) - mid call rate change
- **CLI** - use one of:
  - **CLI** (on page 207) (initiating call number)
  - **CLI** (on page 207) (initiating call number) - mid call rate changes
- **COSTS** - use one of:
  - **COSTS** (on page 209) (rated calls)
  - **COSTS** (on page 210) (rated calls) - mid call rate changes
- **DISCOUNTS** - use one of:
  - **DISCOUNTS** (on page 213) (rated calls)
  - **DISCOUNTS** (on page 214) (rated calls) - mid call rate changes
- **DURATION** (on page 215) (call length)
- **FCA** (on page 216) (final call address)
- **LENGTHS** - use one of:
  - **LENGTHS** (on page 217) (rate durations)
  - **LENGTHS** (on page 218) (rate durations) -1end duration
  - **LENGTHS** (on page 218) (rate durations) - mid call rate changes
- **MAX_CHARGE** - use one of:
  - **MAX_CHARGE** (on page 218) (for this call)
  - **MAX_CHARGE** (on page 219) (for this call) - mid call rate changes
- **OGEO_ID** (on page 226) (originating geo node id)
- **RATES** - use one of:
  - **RATES** (on page 232) (rated calls)
  - **RATES** (on page 233) (rated calls) - mid call rate changes
- **SVC_ID** (on page 242) (single tariff rated calls)
- **TCE** (on page 242) (ccs time call ended)
- **TCS** (on page 242) (ccs time call started)
- **TGEO_ID** (on page 242) (terminating geo node id)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

Continued on next page
Successful National Call (EDR 1), Continued

<table>
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<th>This list identifies the optional EDR record fields for a successful national call (CDR type 1):</th>
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<th>Partial EDRs may be created when the Commit Volume Threshold (Rating Management &gt; Reservation Config &gt; Add/Edit Reservation Config panel) is enabled. These additional tags are on all the partial EDRs, but not on the final, complete EDR:</th>
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<td></td>
<td>• SESSION_SEQUENCE (on page 241) (partial EDR)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Timed-out reservation confirmation additional fields</th>
<th>If a confirmed reservation times out, these tags will be added to the EDR.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• RNCF (on page 239) (Reservation Not Charged For)</td>
</tr>
<tr>
<td></td>
<td>• TIMED_OUT (reservation confirmation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Activated additional fields</th>
<th>If the account is activated, the following fields are generated:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• NEW_ACCT_STATE (on page 222) (always active - A)</td>
</tr>
<tr>
<td></td>
<td>• OLD_ACCT_STATE (on page 227) (P or D before update)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cross balance type discount additional fields</th>
<th>If the cross balance type discounting has been applied during the call, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• CBTD_BALANCE_TYPES (on page 201) (list to apply to discounts)</td>
</tr>
<tr>
<td></td>
<td>• CBTD_BALANCE_TYPES (on page 202) (list to apply to discounts) - mid call rate changes</td>
</tr>
<tr>
<td></td>
<td>• CBTD_BALANCES (on page 202) (value for each cross balance type)</td>
</tr>
<tr>
<td></td>
<td>• CBTD_BALANCES (on page 203) (value for each cross balance type) - mid call rate change</td>
</tr>
<tr>
<td></td>
<td>• CBTD.Cascade_ID (on page 203) (used for this call)</td>
</tr>
<tr>
<td></td>
<td>• CBTDCASCADE_ID (on page 204) (used for this call) - mid call rate change</td>
</tr>
<tr>
<td></td>
<td>• CBTD.COSTS (on page 204) (costs applied to each cross balance type)</td>
</tr>
<tr>
<td></td>
<td>• CBTD.COSTS (on page 205) (costs applied to each cross balance type) - mid call rate changes</td>
</tr>
<tr>
<td></td>
<td>• CBTD_DISCOUNTS (on page 205) (discounts applied to balance types)</td>
</tr>
<tr>
<td></td>
<td>• CBTD_DISCOUNTS (on page 206) (discounts applied to balance types) - mid call rate changes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSISDN additional fields</th>
<th>If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• MSISDN (on page 220) (account calling number)</td>
</tr>
</tbody>
</table>

Continued on next page
If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

Example EDR 1 for single tariff rated call

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20070423190107|ACCT_ID=83
ACCT_REF_ID=83|CLI=01206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=49880|COSTS=120|ACCOUNT_TYPE=22|CASCADE_ID=44|RATES=60|LENGTHS=2810.00|DISCOUNTS=0
MAX_CHARGE=500|DURATION=120.00|TN=01473|TCS=20070423181310|TCE=20070423181510|CS=S|DISCOUNT_TYPE=S*W*R|WALLET_TYPE=1|FCA=01473254338
```

The sequence of all fields is not guaranteed.
Commit Reservation (EDR 1)

This list identifies the mandatory EDR record fields when a Commit Reservation has been performed (CDR type 1):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** - use one of:
  - **BALANCE_TYPES** (on page 194) (account changed or created)
  - **BALANCE_TYPES** (on page 195) (account changed or created) - mid call rate changes
- **BALANCES** - use one of:
  - **BALANCES** (on page 196) (pre-call or account creation)
  - **BALANCES** (on page 197) (pre-call or account creation) - mid call rate changes
- **CASCADE_ID** - use one of:
  - **CASCADE_ID** (on page 200) (balance type cascade IDs)
  - **CASCADE_ID** (on page 201) (balance type cascade IDs) - mid call rate change
- **CLI** - use one of:
  - **CLI** (on page 207) (initiating call number)
  - **CLI** (on page 207) (initiating call number) - mid call rate changes
- **COSTS** - use one of:
  - **COSTS** (on page 209) (rated calls)
  - **COSTS** (on page 210) (rated calls) - mid call rate changes
- **CS** (on page 211) (call status, always S)
- **DISCOUNTS** - use one of:
  - **DISCOUNTS** (on page 213) (rated calls)
  - **DISCOUNTS** (on page 214) (rated calls) - mid call rate changes
  - **DISCOUNT_TYPE** (on page 212) (applied to this call) - R*W
- **DURATION** (on page 215) (call length)
- **LENGTHS** - use one of:
  - **LENGTHS** (on page 217) (rate durations)
  - **LENGTHS** (on page 218) (rate durations) -1end duration
  - **LENGTHS** (on page 218) (rate durations) - mid call rate changes
- **MAX_CHARGE** - use one of:
  - **MAX_CHARGE** (on page 218) (for this call)
  - **MAX_CHARGE** (on page 219) (for this call) - mid call rate changes
- **MFILE** (on page 219) (for rating data)
- **OPERATOR_RELEASED** (on page 229) (commit/revoke reservation)
- **RATES** - use one of:
  - **RATES** (on page 232) (rated calls)
  - **RATES** (on page 233) (rated calls) - mid call rate changes
- **TCE** (on page 242) (ccs time call ended)
- **TCS** (on page 242) (ccs time call started)
- **TERMINAL** (on page 242) (Network ID)
- **TN** (on page 243) (ccs called number)
- **USER** (on page 243) (operator logon name)

Continued on next page
### Commit Reservation (EDR 1), Continued

<table>
<thead>
<tr>
<th>Copy of Example EDR 1 for reservation commit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BILLING ENGINE_ID=21</td>
</tr>
<tr>
<td>ACCT REF ID=83</td>
</tr>
</tbody>
</table>
Revoke Reservation (EDR 1)

**Mandatory EDR 1 fields**

This list identifies the mandatory EDR record fields when a Revoke Reservation has been performed (CDR type 1):

- *ACCOUNT_TYPE* (on page 192) (Product Type ID)
- *ACS_CUST_ID* (on page 192) (ACS Customer ID)
- *CLI* - use one of:
  - *CLI* (on page 207) (initiating call number)
  - *CLI* (on page 207) (initiating call number) - mid call rate changes
- *CS* (on page 211) (call status, always S)
- *DISCOUNT_TYPE* (on page 212) (applied to this call) - R*W
- *DURATION* (on page 215) (call length)
- *MFILE* (on page 219) (for rating data)
- *OPERATOR_RELEASED* (on page 229) (commit/revoke reservation)
- *TCE* (on page 242) (ccs time call ended)
- *TCS* (on page 242) (ccs time call started)
- *TERMINAL* (on page 242) (Network ID)
- *TN* (on page 243) (ccs called number)
- *USER* (on page 243) (operator logon name)

**Example EDR 1 for single tariff rated call**

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20070423190107|ACCT_ID=83
ACCT_REF_ID=83|ACS_CUST_ID=1|ACCOUNT_TYPE=21|DURATION=0.00|TN=477777|TCS=20100602034410|TCE=20100602034432|CS=S|DISCOUNT_TYPE=R*W|MFILE=20100602032245|OPERATOR_RELEASED=1|USER=SU|TERMINAL=192.168.2.68|CLI=49393520
```
## Declined National Call

### Mandatory EDR 1 fields
This list identifies the mandatory EDR record fields for a declined national call (EDR type 1):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **NACK** (on page 221) (long list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

### Optional EDR 1 fields
This list identifies the optional EDR record fields for a declined national call (EDR type 1):

- **CUG_NAME** (on page 211) (closed user group)

### Account Activated additional fields
If the account is activated, the following fields are generated:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (P or D before update)

### MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Mobile number portability additional fields
If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

### Example EDR 1 for declined national call
```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TY
PE=1|RECORD_DATE=20070703121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=01206
233252|TN=01473289900|TCS=20070725124332|CS=D|ACCOUNT_TYPE=15|
NACK=INSF|WALLET_TYPE=1|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A
```

### Example Account Activated
```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TY
PE=1|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=01206
233252|TN=01473289900|TCS=20040625124332|CS=D|ACCOUNT_TYPE=15|NACK=
INSF|WALLET_TYPE=1|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A
```

### Example MSISDN
```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=01206
233252|TN=01473289900|TCS=20040625124332|CS=D|ACCOUNT_TYPE=15|NACK=INSF|WALLET_TYPE=1|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A
```

### Note
The sequence of all fields is not guaranteed.
Direct Amount Charge (EDR 6)

This list identifies the mandatory EDR record fields for a direct amount charge (EDR type 6):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `APPLICATION_DESC` (on page 193) (application freeform)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `NEW_ACCT_EXPIRY` (on page 222) (date after update)
- `NEW_ACCT_STATE` (on page 223) (after update)
- `NEW_BALANCE_EXPIRIES` (on page 224) (date after balance update)
- `OGEO_ID` (on page 226) (originating geo node id)
- `OLD_ACCT_STATE` (on page 227) (before update)
- `OLD_ACCT_EXPIRY` (on page 226) (dates before update)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before voucher recharge)
- `REFERENCE` (on page 235) (OSA bonus)
- `TCE` (on page 242) (ccs time call ended)
- `TCS` (on page 242) (ccs time call started)
- `TGEO_ID` (on page 242) (terminating geo node id)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

Note: See EDR header fields (on page 20) for a list of fields common to every EDR.

Note: The sequence of all fields is not guaranteed.
Chapter 7

Freeform Recharges

Overview

<table>
<thead>
<tr>
<th>Introduction</th>
<th>This chapter defines the CCS EDRs for freeform recharges.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this chapter</td>
<td>This chapter contains the following topics.</td>
</tr>
<tr>
<td></td>
<td>Freeform Recharge Succeeds using Screens (EDR 8) ............. 68</td>
</tr>
<tr>
<td></td>
<td>Freeform Recharge Succeeds using PI (EDR 8) .......................... 70</td>
</tr>
<tr>
<td></td>
<td>Freeform Recharge Succeeds using PI (EDR 2) .......................... 71</td>
</tr>
<tr>
<td></td>
<td>Freeform Recharge Fails using PI (EDR 2, 8) .......................... 72</td>
</tr>
</tbody>
</table>
Freeform Recharge Succeeds using Screens (EDR 8)

**Mandatory EDR 8 fields**

The recharge succeeds where the account is credited.

This list identifies the mandatory EDR record fields for a successful freeform recharge using screens (EDR type 8):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALS** (on page 198) (pre-transaction account balances)
- **BONUS_TYPE** (on page 199) (name)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **REFERENCE** (on page 235) (operator freeform)
- **RELOAD_BONUS** (on page 236) (promotion name)
- **RELOAD_BONUS_AMOUNT** (on page 236) (amount applied)
- **RELOAD_BONUS_EXPIRY** (on page 237) (date remaining bonus expires)
- **RESULT** (on page 238) (voucher redemption, always Success)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

**Optional EDR 8 fields**

This list identifies the optional EDR record fields for a freeform recharge succeeds using screens (EDR type 8):

- **ADJUSTMENT** (on page 193) (generated by an adjustment)
- **REVERSE_CHARGE** (on page 238) (generated by a reverse charge)
- **NEW_ACCT_STATE** (on page 223) (after update)
- **OLD_ACCT_STATE** (on page 227) (before update)

**MSISDN additional fields**

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

**Note:** The NEW_ACCT_STATE and OLD_ACCT_STATE tags will always be present when the freeform recharge causes a change to the wallet state.

**Example EDR 8 for freeform succeeds**

<table>
<thead>
<tr>
<th>BILLING_ENGINE_ID=21</th>
<th>SCP_ID=110537566</th>
<th>SEQUENCE_NUMBER=139450184</th>
<th>CDR_TYPE=8</th>
<th>RECORD_DATE=20040804132135</th>
<th>ACCT_ID=61</th>
<th>ACCT_REF_ID=61</th>
<th>USER=SU</th>
<th>TERMINAL=192.168.25.108</th>
<th>RESULT=Success</th>
<th>BONUS_TYPE=CUSTOM</th>
<th>CS=S</th>
<th>REFERENCE=FreeForm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recharge</td>
<td>ACCOUNT_TYPE=1</td>
<td>BALANCE_TYPES=1</td>
<td>BALANCES=1000</td>
<td>COSTS=-100</td>
<td>OLD_BALANCE_EXPIRIES=0</td>
<td>NEW_BALANCE_EXPIRIES=0</td>
<td>ACS_CUST_ID=1</td>
<td>WALLET_TYPE=1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Continued on next page*
Freeform Recharge Succeeds using Screens (EDR 8), Continued

**Example MSISDN**

```
BILLINGENGINEID=21|SCPID=110537566|SEQUENCENUMBER=13950184|CDRTYPE=8|RECORDDATE=20040804132135|ACCTID=61|ACCTREFID=61|USER=SÜ
RESULT=Success|CLI=1234|REFERENCE=FreeForm
Recharge|ACCOUNTTYPE=1|OLDACCTEXPIRY=0|NEWACCTEXPIRY=0|MAXCURRENT=10|NEWLASTUSE=20040804132122|BALANCETYPES=1|BANCES=100
0|COSTS=-100|OLDBALANCEEXPIRIES=0|NEWBALANCEEXPIRIES=0|ACS_CUST_ID=1|MSISDN=1234
```

**Note**
The sequence of all fields is not guaranteed.
Freeform Recharge Succeeds using PI (EDR 8)

### Mandatory EDR 8 fields

The recharge succeeds where the account is credited. This list identifies the mandatory EDR record fields for a successful freeform recharge using PI (EDR type 8):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **BUCKET_IDS** (on page 199) (within balance type recharged)
- **COSTS** (on page 209) (rated calls)
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **PI** (on page 230) (logon name and IP address)
- **RELOAD_BONUS** (on page 236) (promotion name)
- **RELOAD_BONUS_AMOUNT** (on page 236) (amount applied)
- **RELOAD_BONUS_EXPIRY** (on page 237) (date remaining bonus expires)
- **RELOAD_BONUS_LEFT** (on page 237) (bonus amount remaining)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

### Optional EDR 8 fields

This list identifies the optional EDR record fields for a freeform recharge succeeds using PI (EDR type 8):

- **NEW_ACCT_STATE** (on page 223) (after update)
- **OLD_ACCT_STATE** (on page 227) (before update)

**Note:** The **NEW_ACCT_STATE** and **OLD_ACCT_STATE** tags will always be present when the freeform recharge causes a change to the wallet state.

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Platform dependant additional fields

Depending on the installed platform, the following field will be present:

- **COMPONENT** (on page 208) (from pi command reference)

### Example EDR 8 for freeform succeeds

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=12|CDR_TYPE=8 |RECORD_DATE=20040704141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1 |BALANCES=1000|BALANCE_TYPES=1|BUCKET_IDS=45844|COSTS=-100|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|PI=adminAT192.168.2 5.106|OLD_ACCT_EXPIRY=0|NEW_ACCT_EXPIRY=0|WALLET_TYPE=1|ACCOUNT_TYP E=1
```

### Example MSISDN

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=12|CDR_TYPE=8 |RECORD_DATE=20040804141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1 |BALANCES=1000|BALANCE_TYPES=1|BUCKET_IDS=45844|COSTS=-100|CS=5|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|PI=adminAT192. 168.25.106|REFERENCE=PIFreeForm|WALLET_TYPE=1|ACCOUNT_TYP E=1 |LAST_USED=200401101234|MSISDN=1394111111
```

**Note**

The sequence of all fields is not guaranteed.
# Freeform Recharge Succeeds using PI (EDR 2)

## Mandatory EDR 2 fields

The recharge succeeds where the account is debited.

This list identifies the mandatory EDR record fields for a successful freeform recharge using PI (EDR type 2):

- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **BONUS_TYPE** (on page 199) (name)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **PI** (on page 230) (logon name and IP address)
- **REFERENCE** (on page 235) (operator freeform)
- **RESULT** (on page 238) (voucher redemption, always Success)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

## MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

## Example EDR 2 for freeform succeeds

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=13|CDR_TYPE=2
|RECORD_DATE=20040804141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1
|BALANCES=1100|BALANCE_TYPES=1|RESULT=Success|COSTS=100|CS=S|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|PI=adminAT192.168.25.106|REFERENCE=PI
|WALLET_TYPE=1|BONUS_TYPE=CUSTOM|ACCOUNT_TYPE=1|OLD_ACCT_EXPIRY=0|NEW_ACCT_EXPIRY=0
```

## Example MSISDN

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=13|CDR_TYPE=2
|RECORD_DATE=20040804141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1
|BALANCES=1100|BALANCE_TYPES=1|BUCKET_IDS=45844|COSTS=100|CS=S|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|PI=adminAT192.168.25.106|REFERENCE=PI
|WALLET_TYPE=1|ACCOUNT_TYPE=1|OLD_ACCT_EXPIRY=0|NEW_ACCT_EXPIRY=0|MSISDN=1394111111
```

## Note

The sequence of all fields is not guaranteed.
### Freeform Recharge Fails using PI (EDR 2, 8)

#### Mandatory EDR 2 fields
A EDR type 2 will be produced for a charge attempt, and a EDR type 8 will be produced for a refund attempt.

This list identifies the mandatory EDR record fields for an unsuccessful PI promotional recharge using PI:

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BONUS_TYPE** (on page 199) (name)
- **CS** (on page 210) (call status, always D)
- **NACK** (on page 220) (freeform recharge list)
- **PI** (on page 230) (logon name and IP address)
- **RESULT** (on page 238) (pi failure)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

#### MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

#### Example EDR 8 for freeform fails
*BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=12|CDR_TYPE=8|RECORD_DATE=20070704141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=admin|ACS_CUST_ID=1|CS=D|PI=adminAT192.168.25.106|REFERENCE=PI-FreeForm|WALLET_TYPE=1|NACK=WDISP|ACCOUNT_TYPE=1|RESULT=Frozen Wallet

#### Example MSISDN
*BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=12|CDR_TYPE=8|RECORD_DATE=20040804141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1|CS=D|PI=adminAT192.168.25.106|REFERENCE=PI-FreeForm|WALLET_TYPE=1|NACK=NACK|ACCOUNT_TYPE=1|MSISDN=1394111111

#### Note
The sequence of all fields is not guaranteed.
Credit Card Recharges

Overview

Introduction
This chapter defines the CCS EDRs for credit card recharges.

In this chapter
This chapter contains the following topics.

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Credit Card Recharge Succeeds using PI (EDR 9) .............................75
Credit Card Recharge Succeeds using Screens (EDR 9)

**Mandatory EDR 9 fields**

This list identifies the mandatory EDR record fields for a successful credit card recharge using screens (EDR type 9):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **BONUS_TYPE** (on page 199) (name)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **REFERENCE** (on page 235) (operator freeform)
- **RESULT** (on page 238) (voucher redemption, always Success)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

**MSISDN additional fields**

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

**Example EDR 9 for cc recharge**

```
BILLING_ENGINE_ID=21|SCP_ID=175677458|SEQUENCE_NUMBER=14578|CDR_TYPE=9|RECORD_DATE=20070716035736|ACCT_ID=61|ACCT_REF_ID=61|RESULT=Success|REFERENCE=Credit Card Recharge|
ACCOUNT_TYPE=24|BALANCE_TYPES=1|BONUS_TYPE=CUSTOM|BALANCES=1000|COSTS=-100|CS=S|OLD_BALANCE_EXPIRIES=0|NEW_BALANCE_EXPIRIES=0|ACS_CUST_ID=1|TERMINAL=192.168.25.108|USER=SU|WALLET_TYPE=1
```

**Note**

The sequence of all fields is not guaranteed.
## Credit Card Recharge Succeeds using PI (EDR 9)

### Mandatory EDR 9 fields

The recharge succeeds where the REFERENCE field of the EDR record has a CC prefix indicating this is a credit card recharge that was initiated through the IVR and the PI was used to recharge the account.

This list identifies the mandatory EDR record fields for a successful credit card recharge using PI (EDR type 9):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **PI** (on page 230) (logon name and IP address)
- **REFERENCE** (on page 235) (credit card reference, always cc)
- **STATE** (on page 241) (of recharge)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

### Optional EDR 9 fields

This list identifies the optional EDR record fields for a successful credit card recharge using PI (EDR type 9):

- **BONUS_TYPE** (on page 199) (name)

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Example EDR 9 for cc succeeds

```
BILLING ENGINE_ID=21|SCP_ID=161986004|SEQUENCE NUMBER=15|CDR TYPE=9
RECORD DATE=20040804141927|ACCT ID=61|ACCT REF ID=61|ACS CUST ID=1
BALANCES=1000|BALANCE TYPES=1|COSTS=-100|CS=S|NEW BALANCE EXPIRIES=|OLD BALANCE EXPIRIES=|PI=adminAT192.168.25.106|REFERENCE=CC040804028091|STATE=verified|WALLET TYPE=1
```

### Note

The sequence of all fields is not guaranteed.
Chapter 9

Voucher Freeform Recharges

Overview

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## Voucher Freeform Recharge Succeeds using Screens (EDR 10)

### Mandatory EDR 10 fields

This list identifies the mandatory EDR record fields for a successful voucher freeform recharge using screens (EDR type 10):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **BONUS_TYPE** (on page 199) (name)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **REFERENCE** (on page 236) (voucher freeform)
- **RESULT** (on page 238) (voucher redemption, always Success)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Example EDR 10 for voucher freeform succeeds

**BILLING_ENGINE_ID=21|SCP_ID=175677458|SEQUENCE_NUMBER=12457|CDR_TYPE=10|RECORD_DATE=20070716103449|ACCT_ID=61|ACCT_REF_ID=61|ACCOUNT_TYPE=24|ACS_CUST_ID=1|BALANCES=1000|BALANCE_TYPES=1|RESULT=Success|CS=S|REFERENCE=Voucher Freeform Recharge|COSTS=-100|OLD_BALANCE_EXPIRIES=0|BONUS_TYPE=CUSTOM|NEW_BALANCE_EXPIRIES=0|ACS_CUST_ID=1|USER=SU|TERMINAL=192.168.25.108|WALLET_TYPE=1**

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Note

The sequence of all fields is not guaranteed.
Chapter 10

Periodic Charge

Overview

Introduction

This chapter defines the CCS EDRs for periodic charges.

In this chapter

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Change Subscription State Succeeds (EDR 52) ........................................... 84
Change Subscription State Fails (EDR 52) ................................................... 85
Periodic Charge Recharge Succeeds (EDR 49)

This list identifies the mandatory EDR record fields for a successful recharge from a Periodic Charge (EDR type 49):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **VOUCHER_TYPE** (on page 244) (name)

This list identifies the optional EDR record fields for a successful recharge from a Periodic Charge (EDR type 49):

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **NEW_ACCT_TYPE** (on page 223) (ID of account after recharge)
- **OLD_ACCT_STATE** (on page 227) (P or D before update)
- **OLD_ACCT_TYPE** (on page 227) (ID of account before recharge)
- **PC_TYPE** (on page 230) (periodic charge type)
- **PRO_RATE** (on page 231) (periodic charge subscription)
- **RELOAD_BONUS** (on page 236) (promotion name)
- **RELOAD_BONUS_AMOUNT** (on page 236) (amount applied)
- **RELOAD_BONUS_EXPIRY** (on page 237) (date remaining bonus expires)
- **RELOAD_BONUS_LEFT** (on page 237) (bonus amount remaining)
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<tr>
<th>Mandatory EDR 49 fields</th>
<th>This list identifies the mandatory EDR record fields for a successful Periodic Charge for a named event (EDR type 49):</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCOUNT_TYPE</td>
<td>ACCOUNT_TYPE (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td>ACS_CUST_ID</td>
<td>ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td>BALANCE_TYPES</td>
<td>BALANCE_TYPES (on page 196) (existing account)</td>
</tr>
<tr>
<td>BALANCES</td>
<td>BALANCES (on page 198) (pre-transaction account balances)</td>
</tr>
<tr>
<td>CASCADE_ID</td>
<td>CASCADE_ID (on page 200) (balance type cascade IDs)</td>
</tr>
<tr>
<td>CHARGE_NAME</td>
<td>CHARGE_NAME (on page 206) (of periodic charge)</td>
</tr>
<tr>
<td>COSTS</td>
<td>COSTS (on page 209) (rated calls)</td>
</tr>
<tr>
<td>CS</td>
<td>CS (on page 211) (call status, always S)</td>
</tr>
<tr>
<td>DISCOUNTS</td>
<td>DISCOUNTS (on page 213) (for each named event)</td>
</tr>
<tr>
<td>EVENT_CLASS</td>
<td>EVENT_CLASS (on page 215) (list of classes used)</td>
</tr>
<tr>
<td>EVENT_COST</td>
<td>EVENT_COST (on page 215) (for each named event)</td>
</tr>
<tr>
<td>EVENT_COUNT</td>
<td>EVENT_COUNT (on page 215) (for each named event)</td>
</tr>
<tr>
<td>EVENT_NAME</td>
<td>EVENT_NAME (on page 216) (list used for this call)</td>
</tr>
<tr>
<td>EVENT_TIME_COST</td>
<td>EVENT_TIME_COST (on page 216) (for a named event)</td>
</tr>
<tr>
<td>TCS</td>
<td>TCS (on page 242) (ccs time call started)</td>
</tr>
<tr>
<td>WALLET_TYPE</td>
<td>WALLET_TYPE (on page 244) (ID of wallet changed)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional EDR 49 fields</th>
<th>This list identifies the optional EDR record fields for a successful Periodic Charge for a named event (EDR type 49):</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW_ACCT_STATE</td>
<td>NEW_ACCT_STATE (on page 222) (always active - A)</td>
</tr>
<tr>
<td>OLD_ACCT_STATE</td>
<td>OLD_ACCT_STATE (on page 227) (P or D before update)</td>
</tr>
<tr>
<td>OVERDRAWN_AMOUNT</td>
<td>OVERDRAWN_AMOUNT (on page 230) (take Balance Negative)</td>
</tr>
<tr>
<td>PC_TYPE</td>
<td>PC_TYPE (on page 230) (periodic charge type)</td>
</tr>
<tr>
<td>PRO_RATE</td>
<td>PRO_RATE (on page 231) (periodic charge subscription)</td>
</tr>
<tr>
<td>REMAINING_CHARGE</td>
<td>REMAINING_CHARGE (on page 237) (partial Charge)</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Mandatory EDR 49 fields</th>
<th>This list identifies the mandatory EDR record fields for an unsuccessful recharge using a periodic charge (EDR type 49):</th>
</tr>
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<tbody>
<tr>
<td>ACCOUNT_TYPE (on page 192) (Product Type ID)</td>
<td></td>
</tr>
<tr>
<td>ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
<td></td>
</tr>
<tr>
<td>CS (on page 210) (call status, always D)</td>
<td></td>
</tr>
<tr>
<td>NACK (on page 221) (short list of codes)</td>
<td></td>
</tr>
<tr>
<td>RESULT (on page 237) (general cause)</td>
<td></td>
</tr>
<tr>
<td>WALLET_TYPE (on page 244) (ID of wallet changed)</td>
<td></td>
</tr>
</tbody>
</table>
Periodic Charge Named Event Fails (EDR 49)

This list identifies the mandatory EDR record fields for an unsuccessful Periodic Charge for a named event (EDR type 49):

- ACS_CUST_ID (on page 192) (ACS Customer ID)
- CS (on page 210) (call status, always D)
- EVENT_CLASS (on page 215) (list of classes used)
- EVENT_NAME (on page 216) (list used for this call)
- NACK (on page 221) (short list of codes)
- TCS (on page 242) (ccs time call started)
### Change Subscription State Succeeds (EDR 52)

#### Mandatory EDR 52 fields

This list identifies the mandatory EDR record fields for a successful periodic charge subscription state change (EDR type 52):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACCT_ID` (on page 192) (changed wallet ID)
- `ACCT_REF_ID` (on page 192) (changed account ID)
- `BILLING_ENGINE_ID` (on page 198) (BE where account resides)
- `CHARGE_EXPIRY` (see "CHARGE_EXPIRY (new periodic charge expiry)" on page 206) (new periodic charge expiry)
- `CHARGE_NAME` (on page 206) (of periodic charge)
- `CLI` (on page 207) (for the account that will be changed)
- `CS` (on page 211) (call status, always S)
- `NEW_CHARGE_STATE` (on page 225) (periodic charge subscription state)
- `OLD_CHARGE_STATE` (on page 228) (periodic charge subscription state)
- `RECODate` (on page 234) (creation date)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

#### Optional EDR 52 fields

This list identifies the optional EDR record fields for a successful periodic charge subscription state change (EDR type 52):

- `SCP_ID` (on page 240) (where call originated)
- `SEQUENCE_NUMBER` (on page 240) (call identifier)
### Change Subscription State Fails (EDR 52)

<table>
<thead>
<tr>
<th>Mandatory EDR 52 fields</th>
<th>This list identifies the mandatory EDR record fields for a failed periodic charge subscription state change (EDR type 52):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <code>ACCOUNT_TYPE</code> (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td></td>
<td>• <code>ACCT_ID</code> (on page 192) (changed wallet ID)</td>
</tr>
<tr>
<td></td>
<td>• <code>ACCT_REF_ID</code> (on page 192) (changed account ID)</td>
</tr>
<tr>
<td></td>
<td>• <code>BILLING_ENGINE_ID</code> (on page 198) (BE where account resides)</td>
</tr>
<tr>
<td></td>
<td>• <code>CHARGE_EXPIRY</code> (see &quot;CHARGE_EXPIRY (new periodic charge expiry)&quot; on page 206) (new periodic charge expiry)</td>
</tr>
<tr>
<td></td>
<td>• <code>CHARGE_NAME</code> (on page 206) (of periodic charge)</td>
</tr>
<tr>
<td></td>
<td>• <code>CLI</code> (on page 207) (for the account that will be changed)</td>
</tr>
<tr>
<td></td>
<td>• <code>CS</code> (on page 210) (call status, always D)</td>
</tr>
<tr>
<td></td>
<td>• <code>NEW_CHARGE_STATE</code> (on page 225) (periodic charge subscription state)</td>
</tr>
<tr>
<td></td>
<td>• <code>OLD_CHARGE_STATE</code> (on page 228) (periodic charge subscription state)</td>
</tr>
<tr>
<td></td>
<td>• <code>RECORD_DATE</code> (on page 234) (creation date)</td>
</tr>
<tr>
<td></td>
<td>• <code>WALLET_TYPE</code> (on page 244) (ID of wallet changed)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional EDR 52 fields</th>
<th>This list identifies the optional EDR record fields for a failed periodic charge subscription state change (EDR type 52):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <code>NEW_CHARGE_STATE</code> (on page 225) (periodic charge subscription state)</td>
</tr>
<tr>
<td></td>
<td>• <code>OLD_CHARGE_STATE</code> (on page 228) (periodic charge subscription state)</td>
</tr>
<tr>
<td></td>
<td>• <code>CHARGE_EXPIRY</code> (see &quot;CHARGE_EXPIRY (new periodic charge expiry)&quot; on page 206) (new periodic charge expiry)</td>
</tr>
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Chapter 11

Web Initiated Recharges

Overview

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</tr>
</tbody>
</table>
### Web Initiated Recharge Succeeds using PI (EDR 8)

**Mandatory EDR 8 fields**

The recharge succeeds where the REFERENCE field of the EDR record has a WS prefix indicating this is a recharge that was initiated through a web interface.

This list identifies the mandatory EDR record fields for a successful web initiated recharge using PI (EDR type 8):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `BONUS_TYPE` (on page 199) (name)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `NEW_BALANCE_EXPIRIES` (on page 224) (dates after voucher recharge)
- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before voucher recharge)
- `PI` (on page 230) (logon name and IP address)
- `REFERENCE` (on page 236) (web site reference - ws)
- `RESULT` (on page 238) (web - success)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

**Optional EDR 8 fields**

This list identifies the optional EDR record fields for a web recharge succeeds using PI (EDR type 8):

- `NEW_ACCT_STATE` (on page 223) (after update)
- `OLD_ACCT_STATE` (on page 227) (before update)

Note: The `NEW_ACCT_STATE` and `OLD_ACCT_STATE` tags will always be present when the freeform recharge causes a change to the wallet state.

**Example EDR 8 for web**

ACCOUNT_TYPE=145|ACCT_ID=83938|ACCT_REF_ID=83200|ACS_CUST_ID=11|BALANCES=0|BALANCE_TYPES=25|BILLING_ENGINE_ID=16|BONUS_TYPE=CUSTOM|CDR_TYPE=8|COSTS=-2000000|CS=S|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|PI=sdgAT10.11.169.14|RECORD_DATE=20091102100721|REFERENCE=WS_Recharge|RESULT=Success|SCP_ID=265805204|SEQUENCE_NUMBER=144298|WALLET_TYPE=21

**Note**

The sequence of all fields is not guaranteed.
# PI Promotional Recharges

## Overview

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PI Promotional Recharge Succeeds using PI (EDR 2)

This list identifies the mandatory EDR record fields for a successful PI promotional recharge using PI (EDR type 2):

- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **BUCKET_IDS** (on page 199) (within balance type recharged)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (dates after voucher recharge)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **PI** (on page 230) (logon name and IP address)
- **REFERENCE** (on page 235) (from pi reference)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Example EDR 2 for pi promo

```
BILLING_ENGINE_ID=21|SCP_ID=161986004|SEQUENCE_NUMBER=12|CDR_TYPE=2|RECORD_DATE=20040804141927|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1|BALANCES=1000|BALANCE_TYPES=1|BUCKET_IDS=45844|COSTS=-100|CS=S|NEW_BALANCE_EXPIRIES=|OLD_BALANCE_EXPIRIES=|PI=adminAT192.168.25.106|REFERENCE=PI Promotional|WALLET_TYPE=1
```

The sequence of all fields is not guaranteed.
Overview

This chapter defines the CCS EDRs for Friends & Family and Friends & Destination configuration changes.

In this chapter

This chapter contains the following topics.

- F&F/F&D Change Succeeds using IVR (EDR 5) ...........................................92
- F&F/F&D Change Fails using IVR (EDR 5) ..................................................93
- F&F/F&D Change Succeeds using PI (EDR 28) ...........................................94
- F&F/F&D Change Fails using PI (EDR 5) .....................................................95
- F&F/F&D New Entry Succeeds using PI (EDR 5) .........................................96
# F&F/F&D Change Succeeds using IVR (EDR 5)

**Mandatory EDR 5 fields**

This list identifies the mandatory EDR record fields for a successful F&F and F&D change using IVR (EDR type 5):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `CS` (on page 211) (call status, always S)
- `DISCOUNTS` (on page 213) (for each named event)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_COST` (on page 215) (for each named event)
- `EVENT_COUNT` (on page 215) (for each named event)
- `EVENT_NAME` (on page 216) (list used for this call)
- `EVENT_TIME_COST` (on page 216) (for a named event)
- `TCS` (on page 242) (ccs time call started)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

**Optional EDR 5 fields**

This list identifies the optional EDR record fields for a successful F&F, F&D configuration change (EDR type 5):

- `OVERDRAWN_AMOUNT` (on page 230) (take Balance Negative)
- `REMAINING_CHARGE` (on page 237) (partial Charge)

**Account Activated additional fields**

If the account is activated, the following fields are generated:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (P or D before update)

**MSISDN additional fields**

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

**Example EDR 5 for fnf**

```
BILLING_ENGINE_ID=21|SCP_ID=230612513|SEQUENCE_NUMBER=488297|CDR_TYPE=5|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|WALLET_TYPE=1|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COSTS=50|ACCOUNT_TYPE=4|EVENT_CLASS=FnF FnD
Events|EVENT_NAME=FnF Config Change|EVENT_TIME_COST=0.00|EVENT_COUNT=50|EVENT_COST=50|DISCOUNT=0|CASCADE=5
```

**Note**

The sequence of all fields is not guaranteed.
### F&F/F&D Change Fails using IVR (EDR 5)

**Mandatory EDR 5 fields**

This list identifies the mandatory EDR record fields for an unsuccessful F&F and F&D change using IVR (EDR type 5):

- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

**Example EDR 5 for fnf**

BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20070723084009|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=FnF FnD Events|EVENT_NAME=FnF Config Change|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1

**Note**

The sequence of all fields is not guaranteed.
### F&F/F&D Change Succeeds using PI (EDR 28)

<table>
<thead>
<tr>
<th>Mandatory EDR 28 fields</th>
<th>This list identifies the mandatory EDR record fields for a successful F&amp;F and F&amp;D change using PI (EDR type 28):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
<td></td>
</tr>
<tr>
<td>• CLI (on page 207) (initiating call number)</td>
<td></td>
</tr>
<tr>
<td>• NEW_ACTIVE_SVC (on page 224) (account type)</td>
<td></td>
</tr>
<tr>
<td>• NEW_FD (on page 225) (friends destination number)</td>
<td></td>
</tr>
<tr>
<td>• NEW_FF (on page 225) (list of friends and family numbers)</td>
<td></td>
</tr>
<tr>
<td>• OLD_ACTIVE_SVC (on page 228) (account type)</td>
<td></td>
</tr>
<tr>
<td>• OLD_FD (on page 229) (friends destination number)</td>
<td></td>
</tr>
<tr>
<td>• OLD_FF (on page 229) (list of friends and family numbers)</td>
<td></td>
</tr>
<tr>
<td>• PI (on page 230) (logon name and IP address)</td>
<td></td>
</tr>
<tr>
<td>• WALLET_TYPE (on page 245) (ID of wallet recharged)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSISDN additional fields</th>
<th>If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• MSISDN (on page 220) (account calling number)</td>
<td></td>
</tr>
</tbody>
</table>

| Example EDR 28 for fnf | BILLING_ENGINE_ID=1|SCP_ID=110537566|SEQUENCE_NUMBER=26|CDR_TYPE=28 |RECORD_DATE=20050111105223|PI=adminAT192.168.25.182|ACCT_ID=22|ACCT_REF_ID=22|ACS_CUST_ID=1|CLI=473111222|OLD_FF=488122346,777777779|NEW_FF=488122346,777777776|OLD_ACTIVE_SVC=D|NEW_ACTIVE_SVC=F|OLD_FD=44|NEW_FD=22|WALLET_TYPE=1 |

| Note | The sequence of all fields is not guaranteed. |

---

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

**Example EDR 28 for fnf**

```plaintext
BILLING_ENGINE_ID=1|SCP_ID=110537566|SEQUENCE_NUMBER=26|CDR_TYPE=28
RECORD_DATE=20050111105223|PI=adminAT192.168.25.182|ACCT_ID=22|ACCT_REF_ID=22|ACS_CUST_ID=1|CLI=473111222|OLD_FF=488122346,777777779|NEW_FF=488122346,777777776|OLD_ACTIVE_SVC=D|NEW_ACTIVE_SVC=F|OLD_FD=44|NEW_FD=22|WALLET_TYPE=1
```
## F&F/F&D Change Fails using PI (EDR 5)

### Mandatory EDR 5 fields

This list identifies the mandatory EDR record fields for an unsuccessful F&F and F&D change using PI (EDR type 5):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **NACK** (on page 221) (short list of codes)
- **TCE** (on page 242) (ccs time call ended)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Example EDR 5 for fnf

```plaintext
BILLING_ENGINE_ID=4|SCP_ID=161986004|SEQUENCE_NUMBER=10|CDR_TYPE=5|
RECORD_DATE=20070810043324|ACCT_ID=1021|ACCT_REF_ID=1021|EVENT_CLASS=FnF FnD Events|EVENT_NAME=FnD Config
Change|NACK=WDIS|TCS=20070810043324|CS=D|ACCOUNT_TYPE=41|PI=adminAT192.168.25.108|WALLET_TYPE=1|ACS_CUST_ID=1
```

### Note

The sequence of all fields is not guaranteed.
## F&F/F&D New Entry Succeeds using PI (EDR 5)

**Mandatory EDR 5 fields**

This list identifies the mandatory EDR record fields for a successful F&F and F&D new entry using PI (EDR type 5):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNTS** (on page 213) (for each named event)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_COST** (on page 215) (for each named event)
- **EVENT_COUNT** (on page 215) (for each named event)
- **EVENT_NAME** (on page 216) (list used for this call)
- **EVENT_TIME_COST** (on page 216) (for a named event)
- **PI** (on page 230) (logon name and IP address)
- **TCS** (on page 242) (ccs time call started)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

**Optional EDR 5 fields**

This list identifies the optional EDR record fields for a successful F&F, F&D configuration change (EDR type 5):

- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **REMAINING_CHARGE** (on page 237) (partial Charge)

**MSISDN additional fields**

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

**Note**

The sequence of all fields is not guaranteed.
Chapter 14

Call Barring Config Change

Overview

Introduction

This chapter defines the CCS EDRs for Call Barring configuration changes.

In this chapter

This chapter contains the following topics.

Call Barring Change Succeeds using PI (EDR 30) ........................................98
Call Barring Change Succeeds using PI (EDR 30)

This list identifies the mandatory EDR record fields for a successful Call Barring change using PI (EDR type 30):

- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BARRED_LIST_TYPE** (on page 198) (description)
- **CLI** (on page 207) (initiating call number)
- **IGNORE_BARRED** (on page 216) (ignore numbers in call barring list)
- **NEW_BARRED_LIST** (on page 225) (of call barring numbers)
- **OLD_BARRED_LIST** (on page 228) (of call barring numbers)
- **PI** (on page 230) (logon name and IP address)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

The sequence of all fields is not guaranteed.
Change 'Disable Incoming Calls when Roaming' Flag

Overview

| Introduction | This chapter defines the CCS EDRs for 'Disable Incoming Calls when Roaming' (DICWR) flag changes. |
| In this chapter | This chapter contains the following topics. |

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<th>Topic</th>
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<tr>
<td>DICWR Flag Change Succeeds using PI (EDR 29)</td>
<td>101</td>
</tr>
</tbody>
</table>
### DICWR Flag Change Succeeds using Screens (EDR 29)

<table>
<thead>
<tr>
<th>Mandatory EDR 29 fields</th>
<th>This list identifies the mandatory EDR record fields for a successful DICWR change using screens (EDR type 29):</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCOUNT_TYPE</td>
<td>(Product Type ID)</td>
</tr>
<tr>
<td>ACS_CUST_ID</td>
<td>(ACS Customer ID)</td>
</tr>
<tr>
<td>CLI</td>
<td>(for the account that will be changed)</td>
</tr>
<tr>
<td>DICWR</td>
<td>(Disable Incoming Calls When Roaming)</td>
</tr>
<tr>
<td>USER</td>
<td>(operator logon name)</td>
</tr>
<tr>
<td>WALLET_TYPE</td>
<td>(ID of wallet recharged)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSISDN additional fields</th>
<th>If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSISDN</td>
<td>(account calling number)</td>
</tr>
</tbody>
</table>

| Example EDR 29          | BILLING_ENGINE_ID=0|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=29|RECORD_DATE=20070704145441|ACCT_ID=61|ACCT_REF_ID=61|USER=SU|CLI=1234|ACS_CUST_ID=1|WALLET_TYPE=1|DICWR=TRUE|ACCOUNT_TYPE=24 |

| Note                    | The sequence of all fields is not guaranteed.                                                        |
## DICWR Flag Change Succeeds using PI (EDR 29)

### Mandatory EDR 29 fields

This list identifies the mandatory EDR record fields for a successful DICWR change using PI (EDR type 29):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `CLI` (on page 207) (for the account that will be changed)
- `DICWR` (on page 211) (Disable Incoming Calls When Roaming)
- `PI` (on page 230) (logon name and IP address)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

### Example EDR 29

```
BILLING_ENGINE_ID=2|SCP_ID=110537566|SEQUENCE_NUMBER=1061|CDR_TYPE=29|RECORD_DATE=20070809120324|ACCT_ID=1032|ACCT_REF_ID=1032|CLI=11023|ACS_CUST_ID=1|WALLET_TYPE=1|PI=adminat192.168.25.108|DICWR=TRUE|MSISDN=11023|ACCOUNT_TYPE=24
```

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

### Note

The sequence of all fields is not guaranteed.
# PI Adds Service Charge

## Overview

<table>
<thead>
<tr>
<th>Introduction</th>
<th>This chapter defines the CCS EDRs for Provisioning Interface (PI) adds service charges.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this chapter</td>
<td>This chapter contains the following topics.</td>
</tr>
<tr>
<td></td>
<td>PI Adds Service Charges Succeeds using PI (EDR 2,5)........................................ 104</td>
</tr>
</tbody>
</table>
PI Adds Service Charges Succeeds using PI (EDR 2,5)

**Mandatory EDR 2 fields CCSSC1**

This EDR is produced when **CHARGE** or **REFUND** is specified in the PI command but not **EVENT**.

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CCSSC1 ADD (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_ACCT_STATE** (on page 223) (after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **PI** (on page 230) (logon name and IP address)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

**Optional EDR 2 fields CCSSC1**

This list identifies the optional EDR record fields for a successful PI adds service charge using PI command CCSSC1 ADD (EDR type 2):

- **REFERENCE** (on page 235) (from pi reference)

**Mandatory EDR 5 fields CCSSC1**

This EDR is produced when **EVENT** or **CLASS** is specified in the PI command but not **CHARGE** or **REFUND**.

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CCSSC1 ADD (EDR type 5):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **CS** (on page 211) (call status, always S)
- **TCS** (on page 242) (ccs time call started)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

**Optional EDR 5 fields CCSSC1**

This EDR is produced when **EVENT** or **CLASS** is specified in the PI command but not **CHARGE** or **REFUND**.

This list identifies the optional EDR record fields for a successful PI adds service charge using PI command CCSSC1 ADD (EDR type 5):

- **NEW_ACCT_STATE** (on page 223) (after update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **REFERENCE** (on page 235) (from pi reference)
- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **REMAINING_CHARGE** (on page 237) (partial Charge)

**Mandatory EDR 5 fields CCSSC1**

This EDR is produced when **CHARGE** or **REFUND** is specified, and also **EVENT** is specified in the PI command.

Continued on next page
PI Adds Service Charges Succeeds using PI (EDR 2,5),
Continued

Mandatory EDR 5 fields CCSSC1 (continued)

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CCSSC1 ADD (EDR type 5):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **CASCADE** (on page 199) (always empty for pi)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNT** (on page 211) (always zero for pi)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_COST** (on page 215) (for each named event)
- **EVENT_COUNT** (on page 215) (for each named event)
- **EVENT_NAME** (on page 216) (list used for this call)
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_ACCT_STATE** (on page 223) (after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **PI** (on page 230) (logon name and IP address)
- **TCS** (on page 242) (ccs time call started)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

Optional EDR 5 fields CCSSC1

This EDR is produced when **CHARGE** or **REFUND** is specified, and also **EVENT** is specified in the PI command.

This list identifies the optional EDR record fields for a successful PI adds service charge using PI command CCSSC1 ADD (EDR type 5):

- **REFERENCE** (on page 235) (from pi reference)
- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **REMAINING_CHARGE** (on page 237) (partial Charge)

Mandatory EDR 2 fields CCSSC2

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CCSSC2 ADD (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **CLI** (on page 207) (initiating call number)
- **COSTS** (on page 209) (rated calls)

*Continued on next page*
PI Adds Service Charges Succeeds using PI (EDR 2,5),
Continued

Mandatory EDR 2 fields CCSSC2 (continued)

- CS (on page 211) (call status, always S)
- DISCOUNT_TYPE - one of:
  - DISCOUNT_TYPE (on page 212) (applied to this call)
  - DISCOUNT_TYPE (on page 212) (applied to this call) - R*W
- DISCOUNTS (on page 213) (rated calls)
- DURATION (on page 215) (call length)
- FCA (on page 216) (final call address)
- LENGTHS - one of:
  - LENGTHS (on page 217) (rate durations)
  - LENGTHS (on page 218) (rate durations) -1end duration
- MAX_CHARGE (on page 218) (for this call)
- RATES (on page 232) (rated calls)
- TCE (on page 242) (ccs time call ended)
- TCS (on page 242) (ccs time call started)
- TN (on page 243) (ccs called number)
- WALLET_TYPE (on page 244) (ID of wallet changed)

This EDR is produced when CHARGE or REFUND is specified in the PI command but not EVENT.

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CTLSC1 ADD (EDR type 2):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 196) (existing account)
- BALANCES (on page 198) (pre-transaction account balances)
- COSTS (on page 209) (rated calls)
- NEW_ACCT_EXPIRY (on page 222) (date after update)
- NEW_ACCT_STATE (on page 223) (after update)
- NEW_BALANCE_EXPIRIES (on page 224) (date after balance update)
- OLD_ACCT_EXPIRY (on page 226) (dates before update)
- OLD_ACCT_STATE (on page 227) (before update)
- OLD_BALANCE_EXPIRIES (on page 228) (dates before balance update)
- PI (on page 230) (logon name and IP address)
- WALLET_TYPE (on page 245) (ID of wallet recharged)

This EDR is produced when EVENT or CLASS is specified in the PI command but not CHARGE or REFUND.

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CTLSC1 ADD (EDR type 5):

- ACCOUNT_TYPE (on page 192) (Product Type ID)

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PI Adds Service Charges Succeeds using PI (EDR 2,5),
Continued

Mandatory EDR 5 fields CTLSC1 (continued)
- CS (on page 211) (call status, always S)
- TCS (on page 242) (ccs time call started)
- WALLET_TYPE (on page 244) (ID of wallet changed)

Optional EDR 5 fields CTLSC1
This EDR is produced when EVENT or CLASS is specified in the PI command but not CHARGE or REFUND.
This list identifies the optional EDR record fields for a successful PI adds service charge using PI command CTLSC1 ADD (EDR type 5):
- NEW_ACCT_STATE (on page 223) (after update)
- OLD_ACCT_STATE (on page 227) (before update)
- OVERDRAWN_AMOUNT (on page 230) (take Balance Negative)
- REMAINING_CHARGE (on page 237) (partial Charge)

Mandatory EDR 5 fields CTLSC1
This EDR is produced when CHARGE or REFUND is specified, and also EVENT is specified in the PI command.
This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CTLSC1 ADD (EDR type 5):
- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 196) (existing account)
- BALANCES (on page 198) (pre-transaction account balances)
- CASCADE (on page 199) (always empty for pi)
- COSTS (on page 209) (rated calls)
- CS (on page 211) (call status, always S)
- DISCOUNT (on page 211) (always zero for pi)
- EVENT_CLASS (on page 215) (list of classes used)
- EVENT_COST (on page 215) (for each named event)
- EVENT_COUNT (on page 215) (for each named event)
- EVENT_NAME (on page 216) (list used for this call)
- NEW_ACCT_EXPIRY (on page 222) (date after update)
- NEW_ACCT_STATE (on page 223) (after update)
- NEW_BALANCE_EXPIRIES (on page 224) (date after balance update)
- OLD_ACCT_EXPIRY (on page 226) (dates before update)
- OLD_ACCT_STATE (on page 227) (before update)
- OLD_BALANCE_EXPIRIES (on page 228) (dates before balance update)
- PI (on page 230) (logon name and IP address)
- TCS (on page 242) (ccs time call started)
- WALLET_TYPE (on page 245) (ID of wallet recharged)

Optional EDR 5 fields CTLSC1
This EDR is produced when CHARGE or REFUND is specified, and also EVENT is specified in the PI command.

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Chapter 16   Commercial In Confidence

PI Adds Service Charges Succeeds using PI (EDR 2,5), Continued

Optional EDR 5 fields CTLSC1 (continued)

This list identifies the optional EDR record fields for a successful PI adds service charge using PI command CTLSC1 ADD (EDR type 5):

- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **REMAINING_CHARGE** (on page 237) (partial Charge)

Mandatory EDR 2 fields CTLSC2

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CTLSC2 ADD (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **CLI** (on page 207) (initiating call number)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNT_TYPE** - one of:
  - **DISCOUNT_TYPE** (on page 212) (applied to this call)
  - **DISCOUNT_TYPE** (on page 212) (applied to this call) - R*W
- **DISCOUNTS** (on page 213) (rated calls)
- **DURATION** (on page 215) (call length)
- **FCA** (on page 216) (final call address)
- **LENGTHS** - one of:
  - **LENGTHS** (on page 217) (rate durations)
  - **LENGTHS** (on page 218) (rate durations) -1end duration
- **MAX_CHARGE** (on page 218) (for this call)
- **RATES** (on page 232) (rated calls)
- **TCE** (on page 242) (ccs time call ended)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

Mandatory EDR 2 fields CTLSC2

This list identifies the mandatory EDR record fields for a successful PI adds service charge using PI command CTLSC2 ADD (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **CLI** (on page 207) (initiating call number)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNT_TYPE** - one of:

Continued on next page
PI Adds Service Charges Succeeds using PI (EDR 2,5), Continued

Mandatory EDR 2 fields CTLSC2 (continued)

- `DISCOUNT_TYPE` (on page 212) (applied to this call)
- `DISCOUNT_TYPE` (on page 212) (applied to this call) - R"W
- `DISCOUNTS` (on page 213) (rated calls)
- `DURATION` (on page 215) (call length)
- `FCA` (on page 216) (final call address)
- `LENGTHS` - one of:
  - `LENGTHS` (on page 217) (rate durations)
  - `LENGTHS` (on page 218) (rate durations) - end duration
- `MAX_CHARGE` (on page 218) (for this call)
- `RATES` (on page 232) (rated calls)
- `TCE` (on page 242) (ccs time call ended)
- `TCS` (on page 242) (ccs time call started)
- `TN` (on page 243) (ccs called number)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

MSISDN example

```
BILLING_ENGINE_ID=21|SCP_ID=110537666|SEQUENCE_NUMBER=139450184|CDR_TYPE=2|RECORD_DATE=20040803122626|ACCT_ID=83|ACCT_REF_ID=83|USER=SU||ACCOUNT_TYPE=1|PI=adminAT192.168.25.106|OLD_ACCT_EXPIRY=0|NEW_ACCT_EXPIRY=0|MAX_CONCURRENT=1|COMMENT=|BALANCE_TYPES=1|BALANCES=0|COSTS=10|OLD_BALANCE_EXPIRES=20050310143044|NEW_BALANCE_EXPIRES=20050310143044|ACS_CUST_ID=1|WALLET_TYPE=1|EVENT_CLASS=ProductType|EVENT_NAME=ProductTypeSwap|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0|MSISDN=1394111111
```

Note

The sequence of all fields is not guaranteed.
Product Type Swap

Overview

<table>
<thead>
<tr>
<th>Introduction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>This chapter defines the CCS EDRs for Product Types Swaps (PTS).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In this chapter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>This chapter contains the following topics.</td>
<td></td>
</tr>
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</tr>
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<td>119</td>
</tr>
</tbody>
</table>
PTS Succeeds using Screens (EDR type 31)

There is no associated cost for the PTS that succeeds using the screens.

This list identifies the mandatory EDR record fields for a successful PTS using screens (EDR type 31):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `CLI` (on page 207) (for the account that will be changed)
- `NEW_ACCT_TYPE` (on page 224) (prod type swap)
- `OLD_ACCT_TYPE` (on page 227) (prod type swap)
- `USER` (on page 243) (operator logon name)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

**Example EDR 31**

```
BILLING_ENGINE_ID=0|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=31|RECORD_DATE=20070704150023|ACCT_ID=61|ACCT_REF_ID=61|ACCOUNT_TYPE=24|CLI=1234|OLD_ACCT_TYPE=Oracle_pt|NEW_ACCT_TYPE=test_pt|USER=SU|ACS_CUST_ID=1
```

**Note**

The sequence of all fields is not guaranteed.
## PTS Succeeds using PI (EDR type 31)

| Mandatory EDR 31 fields | There is no associated cost for the PTS that succeeds using PI.  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>This list identifies the mandatory EDR record fields for a successful PTS using PI (EDR type 31):</td>
<td></td>
</tr>
<tr>
<td>• <code>ACCOUNT_TYPE</code> (on page 192) (Product Type ID)</td>
<td></td>
</tr>
<tr>
<td>• <code>ACS_CUST_ID</code> (on page 192) (ACS Customer ID)</td>
<td></td>
</tr>
<tr>
<td>• <code>CLI</code> (on page 207) (for the account that will be changed)</td>
<td></td>
</tr>
<tr>
<td>• <code>NEW_ACCT_TYPE</code> (on page 224) (prod type swap)</td>
<td></td>
</tr>
<tr>
<td>• <code>OLD_ACCT_TYPE</code> (on page 227) (prod type swap)</td>
<td></td>
</tr>
<tr>
<td>• <code>USER</code> (on page 243) (operator logon name)</td>
<td></td>
</tr>
<tr>
<td>MSISDN additional fields</td>
<td>If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:</td>
</tr>
<tr>
<td></td>
<td>• <code>MSISDN</code> (on page 220) (account calling number)</td>
</tr>
<tr>
<td>Example EDR 31</td>
<td>`BILLING_ENGINE_ID=0</td>
</tr>
<tr>
<td>Note</td>
<td>The sequence of all fields is not guaranteed.</td>
</tr>
</tbody>
</table>
### PTS Succeeds using Screens (EDR 31, 32)

**Introduction**
There is an associated cost for the PTS that succeeds using the screens. There are 2 EDR records created for this event - a EDR of type 31 and a EDR of type 32.

<table>
<thead>
<tr>
<th>Mandatory EDR 31 fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>This list identifies the mandatory EDR record fields for a successful PTS using screens (EDR type 31):</td>
</tr>
<tr>
<td>• <strong>ACS_CUST_ID</strong> (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td>• <strong>CLI</strong> (on page 207) (for the account that will be changed)</td>
</tr>
<tr>
<td>• <strong>NEW_ACCT_TYPE</strong> (on page 224) (prod type swap)</td>
</tr>
<tr>
<td>• <strong>OLD_ACCT_TYPE</strong> (on page 227) (prod type swap)</td>
</tr>
<tr>
<td>• <strong>USER</strong> (on page 243) (operator logon name)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mandatory EDR 32 fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>This list identifies the mandatory EDR record fields for a successful PTS using screens (EDR type 32):</td>
</tr>
<tr>
<td>• <strong>ACCOUNT_TYPE</strong> (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td>• <strong>ACS_CUST_ID</strong> (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td>• <strong>BALANCE_TYPES</strong> (on page 194) (account changed or created)</td>
</tr>
<tr>
<td>• <strong>BALANCES</strong> (on page 196) (pre-call or account creation)</td>
</tr>
<tr>
<td>• <strong>CASCADE_ID</strong> (on page 200) (balance type cascade IDs)</td>
</tr>
<tr>
<td>• <strong>COSTS</strong> (on page 209) (rated calls)</td>
</tr>
<tr>
<td>• <strong>CS</strong> (on page 211) (call status, always S)</td>
</tr>
<tr>
<td>• <strong>DISCOUNTS</strong> (on page 213) (for each named event)</td>
</tr>
<tr>
<td>• <strong>EVENT_CLASS</strong> (on page 215) (list of classes used)</td>
</tr>
<tr>
<td>• <strong>EVENT_COST</strong> (on page 215) (for each named event)</td>
</tr>
<tr>
<td>• <strong>EVENT_COUNT</strong> (on page 215) (for each named event)</td>
</tr>
<tr>
<td>• <strong>EVENT_NAME</strong> (on page 216) (list used for this call)</td>
</tr>
<tr>
<td>• <strong>EVENT_TIME_COST</strong> (on page 216) (for a named event)</td>
</tr>
<tr>
<td>• <strong>TCS</strong> (on page 242) (ccs time call started)</td>
</tr>
<tr>
<td>• <strong>TERMINAL</strong> (on page 242) (Network ID)</td>
</tr>
<tr>
<td>• <strong>USER</strong> (on page 243) (operator logon name)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional EDR 32 fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>This list identifies the optional EDR record fields for a successful PTS using screens (EDR type 32):</td>
</tr>
<tr>
<td>• <strong>OVERDRAWN_AMOUNT</strong> (on page 230) (take Balance Negative)</td>
</tr>
<tr>
<td>• <strong>REMAINING_CHARGE</strong> (on page 237) (partial Charge)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Activated additional fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the account is activated, the following fields will be present:</td>
</tr>
<tr>
<td>• <strong>NEW_ACCT_STATE</strong> (on page 222) (always active - A)</td>
</tr>
<tr>
<td>• <strong>OLD_ACCT_STATE</strong> (on page 227) (pre-call)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSISDN additional fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:</td>
</tr>
<tr>
<td>• <strong>MSISDN</strong> (on page 220) (account calling number)</td>
</tr>
</tbody>
</table>

*Continued on next page*
PTS Succeeds using Screens (EDR 31, 32), Continued

Example EDR 31
BILLING ENGINE ID=0|SCP_ID=110537566|SEQUENCE NUMBER=139450184|CDR TYPE=31|RECORD DATE=20040804150023|ACCT_ID=61|ACCT REF ID=61|CLI=1234|OLD ACCT TYPE=test pt|NEW ACCT TYPE=Oracle pt|USER=SU|ACS CUST ID=1

Example EDR 32
BILLING ENGINE ID=21|SCP_ID=110537566|SEQUENCE NUMBER=139450184|CDR TYPE=32|RECORD DATE=20070704150312|ACCT ID=61|ACCT REF ID=61|USER=SU|TERMINAL=192.168.25.108|ACS CUST ID=1|CS=S|TCS=20070704150312|BALANCE TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT TYPE=2|EVENT CLASS=Product Type|EVENT NAME=Product Type Swap|EVENT COST=100|EVENT COUNT=1|EVENT TIME COST=0:00|DISCOUNT=0|CASCADE=1

Account activated example
BILLING ENGINE ID=21|SCP_ID=110537566|SEQUENCE NUMBER=139450184|CDR TYPE=32|RECORD DATE=20040804150312|ACCT ID=61|ACCT REF ID=61|USER=SU|ACS CUST ID=1|CS=S|TCS=20040804150312|BALANCE TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT TYPE=2|EVENT CLASS=Product Type|EVENT NAME=Product Type Swap|EVENT COST=100|EVENT COUNT=1|EVENT TIME COST=0:00|DISCOUNT=0|CASCADE=0|OLD ACCT STATE=P|NEW ACCT STATE=A

Example Account Activated - MSISDN
BILLING ENGINE ID=21|SCP_ID=110537566|SEQUENCE NUMBER=139450184|CDR TYPE=32|RECORD DATE=20040804150312|ACCT ID=61|ACCT REF ID=61|USER=SU|ACS CUST ID=1|CS=S|TCS=20040804150312|BALANCE TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT TYPE=2|EVENT CLASS=Product Type|EVENT NAME=Product Type Swap|EVENT COST=100|EVENT COUNT=1|DISCOUNT=0|CASCADE=0|OLD ACCT STATE=P|NEW ACCT STATE=A|MSISDN=1394111111

Note
The sequence of all fields is not guaranteed.
PTS Succeeds using IVR (EDR 31, 32)

Introduction
There may or may not be an associated cost for the PTS that succeeds using the IVR as a 100% discount may be applied.

There are 2 EDR records created for this event - a EDR of type 31 and a EDR of type 32.

Mandatory EDR 31 fields
This list identifies the mandatory EDR record fields for a successful PTS using IVR (EDR type 31):

- ACS_CUST_ID (on page 192) (ACS Customer ID)
- CLI (on page 207) (for the account that will be changed)
- NEW_ACCT_TYPE (on page 224) (prod type swap)
- OLD_ACCT_TYPE (on page 227) (prod type swap)
- USER (on page 243) (operator logon name)

Mandatory EDR 32 fields
This list identifies the mandatory EDR record fields for a successful PTS using IVR (EDR type 32):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 194) (account changed or created)
- BALANCES (on page 196) (pre-call or account creation)
- CASCADE_ID (on page 200) (balance type cascade IDs)
- COSTS (on page 209) (rated calls)
- CS (on page 211) (call status, always S)
- DISCOUNTS (on page 213) (for each named event)
- EVENT_CLASS (on page 215) (list of classes used)
- EVENT_COST (on page 215) (for each named event)
- EVENT_COUNT (on page 215) (for each named event)
- EVENT_NAME (on page 216) (list used for this call)
- EVENT_TIME_COST (on page 216) (for a named event)
- NEW_ACCT_TYPE (on page 224) (prod type swap)
- TCS (on page 242) (ccs time call started)
- WALLET_TYPE (on page 244) (ID of wallet changed)

Optional EDR 32 fields
This list identifies the optional EDR record fields for a successful PTS using IVR (EDR type 32):

- OVERDRAWN_AMOUNT (on page 230) (take Balance Negative)
- REMAINING_CHARGE (on page 237) (partial Charge)

Account Activated additional fields
If the account is activated, the following fields will be present:

- NEW_ACCT_STATE (on page 222) (always active - A)
- OLD_ACCT_STATE (on page 227) (pre-call)

MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

Continued on next page
PTS Succeeds using IVR (EDR 31, 32), Continued

**Example EDR 31**

```
BILLING_ENGINE_ID=0|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=31|RECORD_DATE=20040804150023|ACCT_ID=61|ACCT_REF_ID=61|CLI=1234|OLD_ACCT_TYPE=Oracle_pt|NEW_ACCT_TYPE=test_pt|USER=OPS$SMSF OPER|ACS_CUST_ID=1
```

**Example EDR 32**

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=489322|CDR_TYPE=32|RECORD_DATE=20040804150312|ACCT_ID=61|ACCT_REF_ID=61|USER=SU|ACS_CUST_ID=1|CS=S|TCS=20040804150312|BALANCE_TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT_TYPE=2|EVENT_CLASS=Product Type|EVENT_NAME=Product Type|EVENT_COST=100|EVENT_COUNT=1|EVENT_TIME_COST=0:00|DISCOUNT=0|CASCADE=0
```

**Account activated example**

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=489322|CDR_TYPE=32|RECORD_DATE=20040804150312|ACCT_ID=61|ACCT_REF_ID=61|USER=SU|ACS_CUST_ID=1|CS=S|TCS=20040804150312|BALANCE_TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT_TYPE=2|EVENT_CLASS=Product Type|EVENT_NAME=Product Type|EVENT_COST=100|EVENT_COUNT=1|EVENT_TIME_COST=0:00|DISCOUNT=0|CASCADE=0|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A
```

**Example MSISDN**

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=489322|CDR_TYPE=32|RECORD_DATE=20040804150312|ACCT_ID=61|ACCT_REF_ID=61|USER=SU|ACS_CUST_ID=1|CS=S|TCS=20040804150312|BALANCE_TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT_TYPE=2|EVENT_CLASS=Product Type|EVENT_NAME=Product Type|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|MSISDN=13941111111
```

**Note**

The sequence of all fields is not guaranteed.
PTS Fails using Screens (EDR 32)

**Mandatory EDR 32 fields**

This list identifies the mandatory EDR record fields for an unsuccessful Product Type Swap using SMS Screens. (EDR type 32):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `CS` (on page 210) (call status, always D)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_NAME` (on page 216) (list used for this call)
- `NACK` (on page 221) (short list of codes)
- `TCS` (on page 242) (ccs time call started)
- `TERMINAL` (on page 242) (Network ID)
- `USER` (on page 243) (operator logon name)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

**Example EDR 32**

```
BILLING_ENGINE_ID=21|SCP_ID=110537566|SEQUENCE_NUMBER=139450184|CDR_TYPE=32|RECORD_DATE=20070718105233|ACCT_ID=2082|ACCT_REF_ID=2082|EVENT_CLASS=Product Type|EVENT_NAME=Product Type|NACK=NENA|TCS=20070718105233|CS=D|ACCOUNT_TYPE=41|USER=SU|TERMINAL=192.168.25.108|ACS_CUST_ID=1
```

**Example MSISDN**

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=32|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=Product Type|EVENT_NAME=Product Type|Swap|NACK=INSF|TCS=20040706104957|CS=D|ACCOUNT_TYPE=1|WALLET_TYPE=1|NEW_ACCT_TYPE=2|ACS_CUST_ID=1|MSISDN=1394111111
```

**Note**

The sequence of all fields is not guaranteed.
## PTS Fails using IVR (EDR 32)

### Mandatory EDR 32 fields

This list identifies the mandatory EDR record fields for an unsuccessful PTS using IVR. (EDR type 32):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `CS` (on page 210) (call status, always D)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_NAME` (on page 216) (list used for this call)
- `NEW_ACCT_TYPE` (on page 224) (prod type swap)
- `TCS` (on page 242) (ccs time call started)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

### Example EDR 32

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=32|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=Product Type|EVENT_NAME=Product Type Swap|NACK=INSF|TCS=20040706104957|CS=D|ACCOUNT_TYPE=1|NEW_ACCT_TYPE=2|ACS_CUST_ID=1
```

### Example MSISDN

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=32|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=Product Type|EVENT_NAME=Product Type Swap|NACK=INSF|TCS=20040706104957|CS=D|ACCOUNT_TYPE=1|WALLET_TYPE=1|NEW_ACCT_TYPE=2|ACS_CUST_ID=1|MSISDN=1394111111
```

### Note

The sequence of all fields is not guaranteed.
## Overview

**Introduction**
This chapter defines the CCS EDRs for read secret code changes.

**In this chapter**
This chapter contains the following topics.

Read Secret Code Change Fails using IVR (EDR 33).................................122

---

## Read Secret Code

This chapter defines the CCS EDRs for read secret code changes.
Read Secret Code Change Fails using IVR (EDR 33)

| Mandatory EDR 33 fields | This list identifies the mandatory EDR record fields for an unsuccessful read secret code using IVR (EDR type 33):
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
<td></td>
</tr>
<tr>
<td>BAD_PINS (on page 193) (number of attempts)</td>
<td></td>
</tr>
</tbody>
</table>

| Optional EDR 33 fields | This list identifies the optional EDR record fields for an unsuccessful read secret code using IVR (EDR type 33):
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW_ACCT_STATE (on page 222) (always frozen - F)</td>
<td></td>
</tr>
<tr>
<td>OLD_ACCT_STATE (on page 226) (always active - A)</td>
<td></td>
</tr>
</tbody>
</table>

| MSISDN additional fields | If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MSISDN (on page 220) (account calling number)</td>
<td></td>
</tr>
</tbody>
</table>

Example EDR 33

BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=488298|CDR_TYPE=33|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|BAD_PINS =1|ACS_CUST_ID=1

Note

The sequence of all fields is not guaranteed.
Overview

This chapter defines the CCS EDRs for expiries.

**Note:** If the ACCT_REF_ID header field for an expiry EDR is set to zero (0), this indicates that the change was not limited to a single account but was applied to the wallet or balance of all the referenced accounts.

This chapter contains the following topics.

- Balance Expiry (EDR 3) ................................................................. 124
- Account Expiry (EDR 3) ................................................................. 125
- PI Delete (EDR 2) ........................................................................ 126
### Balance Expiry (EDR 3)

#### Mandatory EDR 3 fields

This list identifies the mandatory EDR record fields for balance expiry (EDR type 3):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)

#### Optional EDR 3 fields

This list identifies the optional EDR record fields for balance expiry (EDR type 3):

- **EXPIRED_WALLET** (on page 216) (ID of expired wallet)
- **NEW_ACCT_STATE** (on page 223) (after update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)

#### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

#### Example EDR 3

```
BILLYING_ENGINE_ID=21|SCP_ID=0|SEQUENCE_NUMBER=0|CDR_TYPE=3|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|BALANCES=5100|BALANCE_TYPES=1|COSTS=5100|ACCOUNT_TYPE=1
```

#### Example MSISDN

```
BILLING_ENGINE_ID=21|SCP_ID=0|SEQUENCE_NUMBER=0|CDR_TYPE=3|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|BALANCES=5100|BALANCE_TYPES=1|COSTS=5100|EXPIRIES=20040731212949|ACCOUNT_TYPE=1|MSISDN=1394111111
```

#### Note

The sequence of all fields is not guaranteed.
# Account Expiry (EDR 3)

## Mandatory EDR 3 fields

This list identifies the mandatory EDR record fields for account expiry (EDR type 3):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `NEW_ACCT_STATE` (on page 223) (always terminated - T)
- `OLD_ACCT_EXPIRY` (on page 226) (dates before update)
- `OLD_ACCT_STATE` (on page 226) (always active - A)

## Optional EDR 3 fields

This list identifies the optional EDR record fields for account expiry (EDR type 3):

- `OLD_BALANCE_EXPIRIES` (on page 228) (dates before balance update)

## MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

## Example EDR 3

```
BILLING_ENGINE_ID=21|SCP_ID=0|SEQUENCE_NUMBER=0|CDR_TYPE=3|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|NEW_ACCT_STATE=T|OLD_ACCT_STATE=A|ACS_CUST_ID=1|ACCOUNT_TYPE=1
```

## Example MSISDN

```
BILLING_ENGINE_ID=21|SCP_ID=0|SEQUENCE_NUMBER=0|CDR_TYPE=3|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|NEW_ACCT_STATE=T|OLD_ACCT_STATE=A|ACS_CUST_ID=1|OLD_ACCT_EXPIRY=20040731212949|ACCOUNT_TYPE=1|MSISDN=13941111111
```

## Note

The sequence of all fields is not guaranteed.
## PI Delete (EDR 2)

This list identifies the mandatory EDR record fields for PI delete (EDR type 2):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **ACTIVATION_DATE** (on page 193) (account activation date)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **MAX_CONCURRENT** (on page 219) (maximum concurrent accesses allowed)
- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 226) (always active - A)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **PI** (on page 230) (logon name and IP address)
- **WALLET_DELETED** (on page 244) (always success - Y)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

### MSISDN additional fields

If the MSISDN csCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

### Note

The sequence of all fields is not guaranteed.
# Roaming Voice Calls

## Overview

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Successful Roaming Call (EDR type 1)

Introduction
For the purposes of this document, a roaming voice call is one of the following:

- CAMEL Originating
- Mobile Terminating
- USSD Callback

Depending on the software installed, a roaming voice call may result in either an EDR of type 1 or a EDR of type 11.

A EDR of type 11 will be created through modifying the original EDR type using a ccsCDRLoaderPlugin on the SMP. The ccsCDRLoaderPlugin may also modify the CLI and TN fields of the EDR record and add additional fields into the resulting EDR - details regarding these changes have been included in this section of the document.

Mandatory EDR 1 fields
This list identifies the mandatory EDR record fields for a successful roaming call (EDR type 1):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 194) (account changed or created)
- BALANCES (on page 198) (pre-transaction account balances)
- CASCADE_ID (on page 200) (balance type cascade IDs)
- CLI (on page 207) (initiating call number)
- DISCOUNT_TYPE - one of:
  - DISCOUNT_TYPE (on page 212) (applied to this call)
  - DISCOUNT_TYPE (on page 212) (applied to this call) - R\*W
- DISCOUNTS (on page 213) (rated calls)
- DURATION (on page 215) (call length)
- FCA (on page 216) (final call address)
- LENGTHS - one of:
  - LENGTHS (on page 217) (rate durations)
  - LENGTHS (on page 218) (rate durations) -1end duration
- MAX_CHARGE (on page 218) (for this call)
- RATES (on page 232) (rated calls)
- TCE (on page 242) (ccs time call ended)
- TCS (on page 242) (ccs time call started)
- TN (on page 243) (ccs called number)
- WALLET_TYPE (on page 244) (ID of wallet changed)

Optional EDR 1 fields
This list identifies the optional EDR record fields for a successful roaming call (EDR type 1):

- CUG_NAME (on page 211) (closed user group)
- OVERRIDDEN_TARIFF_PLAN (on page 230) (ID)
- RELC (on page 236) (inap release cause)
- TARIFF_CODE (on page 242) (name)

Partial EDR additional fields
Partial EDRs may be created when the Commit Volume Threshold (Rating Management > Reservation Config > Add/Edit Reservation Config panel) is enabled.

Continued on next page
Successful Roaming Call (EDR type 1), Continued

Partial EDR additional fields (continued)

These additional tags are on all the partial EDRs, but not on the final, complete EDR:

- MID_SESSION (on page 219) (partial EDR)
- SESSION_SEQUENCE (on page 241) (partial EDR)

Timed-out reservation confirmation additional fields

If a confirmed reservation times out, these tags will be added to the EDR.

- RNCF (on page 239) (Reservation Not Charged For)
- TIMED_OUT (reservation confirmation)

Account Activated additional fields

If the account is activated, the following fields will be present:

- NEW_ACCT_STATE (on page 222) (always active - A)
- OLD_ACCT_STATE (on page 227) (pre-call)

Cross balance type discount additional fields

If the cross balance type discounting has been applied during the call, the following fields will be present:

- CBTD_BALANCE_TYPES (on page 201) (list to apply to discounts)
- CBTD_BALANCE_TYPES (on page 202) (list to apply to discounts) - mid call rate changes
- CBTD_BALANCES (on page 202) (value for each cross balance type)
- CBTD_BALANCES (on page 203) (value for each cross balance type) - mid call rate change
- CBTDCASCADE_ID (on page 203) (used for this call)
- CBTDCASCADE_ID (on page 204) (used for this call) - mid call rate change
- CBTD_COSTS (on page 204) (costs applied to each cross balance type)
- CBTD_COSTS (on page 205) (costs applied to each cross balance type) - mid call rate changes
- CBTD_DISCOUNTS (on page 205) (discounts applied to balance types)
- CBTD_DISCOUNTS (on page 206) (discounts applied to balance types) - mid call rate changes

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

Example EDR 1

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=01206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,40.00|DISCOUNTS=450000,560000|MAX_CHARGE=500|DURATION=160|TN=01473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S*W*R
```

Example Account Activated

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=01206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,0.00|DISCOUNTS=450000,560000|MAX_CHARGE=500|DURATION=60|TN=01473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S*W*R|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A
```
Successful Roaming Call (EDR type 1), Continued

Example MSISDN
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=1234|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,0.00|DISCOUNTS=450000,56000|MAX_CHARGE=500|DURATION=60|TN=01473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S*W*R|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|MSISDN=1234

Note
The sequence of all fields is not guaranteed.
Declined Roaming Call (EDR type 1)

Introduction

For the purposes of this document, a roaming voice call is one of the following:

- CAMEL Originating
- Mobile Terminating
- USSD Callback

Depending on the software installed, a roaming voice call may result in either a EDR of type 1 or a EDR of type 11.

A EDR of type 11 will be created through modifying the original EDR type using a ccsCDRLoaderPlugin on the SMP. The ccsCDRLoaderPlugin may also modify the CLI and TN fields of the EDR record and add additional fields into the resulting EDR - details regarding these changes have been included in this section of the document.

Mandatory EDR 1 fields

This list identifies the mandatory EDR record fields for an unsuccessful roaming call (EDR type 1):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **NACK** (on page 221) (long list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

Optional EDR 1 fields

This list identifies the optional EDR record fields for an unsuccessful roaming call (EDR type 1):

- **CUG_NAME** (on page 211) (closed user group)

Account Activated additional fields

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Mobile number portability additional fields

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

Example EDR 1

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=1234|TN=01473289900|TCS=20040625124332|CS=D|NACK=INSF|ACS_CUST_ID=1|ACCOUNT_TYPE=1
```
Declined Roaming Call (EDR type 1), Continued

| Example Account Activated | BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=1234|TN=01473289900|TCS=20040625124332|CS=D|NACK=INSF|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|ACCOUNT_TYPE=1 |
|--------------------------|---------------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Example MSISDN           | BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=1234|TN=01473289900|TCS=20040625124332|CS=D|NACK=INSF|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|ACCOUNT_TYPE=1|MSISDN=1234 |

Note

The sequence of all fields is not guaranteed.
Successful Roaming Call (EDR type 11)

Introduction
For the purposes of this document, a roaming voice call is one of the following:

- CAMEL Originating
- Mobile Terminating
- USSD Callback

Depending on the software installed, a roaming voice call may result in either an EDR of type 1 or a EDR of type 11.

A EDR of type 11 will be created through modifying the original EDR type using a ccsCDRLoaderPlugin on the SMP. The ccsCDRLoaderPlugin may also modify the CLI and TN fields of the EDR record and add additional fields into the resulting EDR - details regarding these changes have been included in this section of the document.

Mandatory EDR 11 fields
This list identifies the optional EDR record fields for a successful roaming call (EDR type 11):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 194) (account changed or created)
- BALANCES (on page 198) (pre-transaction account balances)
- CASCADE_ID (on page 200) (balance type cascade IDs)
- CLI (on page 208) (roaming initiating call number)
- COSTS (on page 209) (rated calls)
- CS (on page 211) (call status, always S)
- DISCOUNT_TYPE - one of:
  - DISCOUNT_TYPE (on page 212) (applied to this call)
  - DISCOUNT_TYPE (on page 212) (applied to this call) - R"W
- DISCOUNTS (on page 213) (rated calls)
- DURATION (on page 215) (call length)
- FCA (on page 216) (final call address)
- LENGTHS - one of:
  - LENGTHS (on page 217) (rate durations)
  - LENGTHS (on page 218) (rate durations) -1end duration
- MAX_CHARGE (on page 218) (for this call)
- RATES (on page 232) (rated calls)
- ROAMING_COUNTRY (on page 239) (name)
- ROAMING_TYPE (on page 240) (of call)
- TCE (on page 242) (ccs time call ended)
- TCS (on page 242) (ccs time call started)
- TN (on page 243) (roaming called number)
- WALLET_TYPE (on page 244) (ID of wallet changed)

Optional EDR 11 fields
This list identifies the optional EDR record fields for a successful roaming call (EDR type 11):

- CUG_NAME (on page 211) (closed user group)
Successful Roaming Call (EDR type 11), Continued

Optional EDR 11 fields (continued)

- **OVERRIDDEN_TARIFF_PLAN** (on page 230) (ID)
- **RELC** (on page 236) (inap release cause)
- **TARIFF_CODE** (on page 242) (name)

Partial EDR additional fields

Partial EDRs may be created when the Commit Volume Threshold (Rating Management > Reservation Config > Add/Edit Reservation Config panel) is enabled.

These additional tags are on all the partial EDRs, but not on the final, complete EDR:

- **MID_SESSION** (on page 219) (partial EDR)
- **SESSION_SEQUENCE** (on page 241) (partial EDR)

Timed-out reservation confirmation additional fields

If a confirmed reservation times out, these tags will be added to the EDR.

- **RNCF** (on page 239) (Reservation Not Charged For)
- **TIMED_OUT** (reservation confirmation)

Account Activated additional fields

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

Cross balance type discount additional fields

If the cross balance type discounting has been applied during the call, the following fields will be present:

- **CBTD_BALANCE_TYPES** (on page 201) (list to apply to discounts)
- **CBTD_BALANCE_TYPES** (on page 202) (list to apply to discounts) - mid call rate changes
- **CBTD_BALANCES** (on page 202) (value for each cross balance type)
- **CBTD_BALANCES** (on page 203) (value for each cross balance type) - mid call rate change
- **CBTD CASCADE_ID** (on page 203) (used for this call)
- **CBTD CASCADE_ID** (on page 204) (used for this call) - mid call rate change
- **CBTD COSTS** (on page 204) (costs applied to each cross balance type)
- **CBTD COSTS** (on page 205) (costs applied to each cross balance type) - mid call rate changes
- **CBTD DISCOUNTS** (on page 205) (discounts applied to balance types)
- **CBTD DISCOUNTS** (on page 206) (discounts applied to balance types) - mid call rate changes

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Mobile number portability additional fields

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

*Continued on next page*
Successful Roaming Call (EDR type 11), Continued

Example EDR 11

| BILLINGENGINE_ID=21 | SCP_ID=366273222 | SEQUENCE_NUMBER=487291 | CDR_TYPE=11 | RECORD_DATE=20040803142342 | ACCT_ID=83 | ACCT_REF_ID=83 | CLI=32106233252 | ACS_CUST_ID=1 | BALANCE_TYPES=1 | BALANCES=1000 | COSTS=28 | ACCOUNT_TYPE=1 | CASCADE_ID=1 | RATES=50,25 | LENGTHS=120,0 | DISCOUNTS=450000,560000 | MAX_CHARGE=500 | DURATION=60 | TN=441473289900 | TCS=20040803141934 | TCE=20040803142034 | CS=S | DISCOUNT_TYPE=S*W*R | ROAMING_TYPE=MT | ROAMING_COUNTRY=United Kingdom |

Note

The sequence of all fields is not guaranteed.
Declined Roaming Call (EDR type 11)

Introduction

For the purposes of this document, a roaming voice call is one of the following:

- CAMEL Originating
- Mobile Terminating
- USSD Callback

Depending on the software installed, a roaming voice call may result in either an EDR of type 1 or a EDR of type 11.

A EDR of type 11 will be created through modifying the original EDR type using a ccsCDRLoaderPlugin on the SMP. The ccsCDRLoaderPlugin may also modify the CLI and TN fields of the EDR record and add additional fields into the resulting EDR - details regarding these changes have been included in this section of the document.

Mandatory EDR 11 fields

This list identifies the optional EDR record fields for an unsuccessful roaming call (EDR type 11):

- ACS_CUST_ID (on page 192) (ACS Customer ID)
- CS (on page 210) (call status, always D)
- CLI (on page 208) (roaming initiating call number)
- NACK (on page 221) (long list of codes)
- ROAMING_COUNTRY (on page 239) (name)
- ROAMING_TYPE (on page 240) (of call)
- TCS (on page 242) (ccs time call started)
- TN (on page 243) (roaming called number)

Optional EDR 11 fields

This list identifies the optional EDR record fields for an unsuccessful roaming call (EDR type 11):

- CUG_NAME (on page 211) (closed user group)

Account Activated additional fields

If the account is activated, the following fields will be present:

- NEW_ACCT_STATE (on page 222) (always active - A)
- OLD_ACCT_STATE (on page 227) (pre-call)

Mobile number portability additional fields

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- PORTED (on page 231) (name of porting carrier)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

Example EDR 11

BILLING ENGINE ID=21|SCP ID=230612530|SEQUENCE NUMBER=487291|CDR TYPE=11|RECORD DATE=20040803121758|ACCT ID=83|ACCT REF ID=83|CLI=321206233252|TN=441473289900|TCS=20040625124332|CS=D|NACK=INSF|ACS_CUST_ID=1|ROAMING_TYPE=MT|ROAMING COUNTRY=United Kingdom

Note

The sequence of all fields is not guaranteed.
PrePaid Data

Overview

Introduction

This chapter defines the CCS EDRs for prepaid charges.

In this chapter

This chapter contains the following topics.

- GPRS Content Charge Succeeds (EDR 5) ................................................. 138
- GPRS Content Charge Fails (EDR 5) ......................................................... 139
- GPRS Volume/Duration Charge Succeeds (EDR 14) ................................ 140
- GPRS Volume/Duration Charge Fails (EDR 5) ........................................... 141
# GPRS Content Charge Succeeds (EDR 5)

## Mandatory EDR 5 fields
This list identifies the optional EDR record fields for a successful GPRS content charge (EDR type 5):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `DISCOUNTS` (on page 213) (for each named event)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_COST` (on page 215) (for each named event)
- `EVENT_COUNT` (on page 215) (for each named event)
- `EVENT_NAME` (on page 216) (list used for this call)
- `EVENT_TIME_COST` (on page 216) (for a named event)
- `TCS` (on page 242) (ccs time call started)

## Optional EDR 5 fields
This list identifies the optional EDR record fields for a successful GPRS content charge (EDR type 5):

- `OVERDRAWN_AMOUNT` (on page 230) (take Balance Negative)
- `REMAINING_CHARGE` (on page 237) (partial Charge)

If the account is activated, the following fields will be present:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

## Example EDR 5
```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=5|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COSTS=90|ACCOUNT_TYPE=4|EVENT_CLASS=PrePaidData|EVENT_NAME=PPD_Content_10|EVENT_COST=10|EVENT_COUNT=9|DISCOUNT=0|CASCADE=0
```

## Note
The sequence of all fields is not guaranteed.
GPRS Content Charge Fails (EDR 5)

Mandatory EDR 5 fields

This list identifies the mandatory EDR record fields for an unsuccessful GPRS content charge (EDR type 5):

- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 198) (pre-transaction account balances)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 210) (call status, always D)
- `DISCOUNTS` (on page 213) (for each named event)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_COST` (on page 215) (for each named event)
- `EVENT_COUNT` (on page 215) (for each named event)
- `EVENT_NAME` (on page 216) (list used for this call)
- `EVENT_TIME_COST` (on page 216) (for a named event)
- `NACK` (on page 221) (short list of codes)
- `TCS` (on page 242) (ccs time call started)

Example EDR 5

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=PrePaidData|EVENT_NAME=PPD_Content_10|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1
```

Note

The sequence of all fields is not guaranteed.
# GPRS Volume/Duration Charge Succeeds (EDR 14)

<table>
<thead>
<tr>
<th>Mandatory EDR 14 fields</th>
<th>This list identifies the mandatory EDR record fields for a successful GPRS volume/duration charge (EDR type 14):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ACCOUNT_TYPE (on page 192) (Product Type ID)</td>
<td>• ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td>• BALANCE_TYPES (on page 194) (account changed or created)</td>
<td>• BALANCES (on page 196) (pre-call or account creation)</td>
</tr>
<tr>
<td>• CASCADE_ID (on page 200) (balance type cascade IDs)</td>
<td>• CLI (on page 207) (initiating call number)</td>
</tr>
<tr>
<td>• COSTS (on page 209) (rated calls)</td>
<td>• CS (on page 211) (call status, always S)</td>
</tr>
<tr>
<td>• CUG_NAME (on page 211) (closed user group)</td>
<td>• DISCOUNTS (on page 213) (for each named event)</td>
</tr>
<tr>
<td>• EVENT_CLASS (on page 215) (list of classes used)</td>
<td>• EVENT_COST (on page 215) (for each named event)</td>
</tr>
<tr>
<td>• EVENT_COUNT (on page 215) (for each named event)</td>
<td>• EVENT_NAME (on page 216) (list used for this call)</td>
</tr>
<tr>
<td>• OVERRIDDEN_TARIFF_PLAN (on page 230) (ID)</td>
<td>• TARIFF_CODE (on page 242) (name)</td>
</tr>
<tr>
<td>• TCS (on page 242) (ccs time call started)</td>
<td></td>
</tr>
</tbody>
</table>

If the account is activated, the following fields will be present:

<table>
<thead>
<tr>
<th>Account Activated additional fields</th>
<th>If the account is activated, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NEW_ACCT_STATE (on page 222) (always active - A)</td>
<td>• OLD_ACCT_STATE (on page 227) (pre-call)</td>
</tr>
</tbody>
</table>

**Example EDR 14**

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=14|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|CLI=321206233252|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COSTS=150|ACCOUNT_TYPE=4|EVENT_CLASS=PrePaidData|EVENT_NAME=PPD_Volume_1|EVENT_COST=1|EVENT_COUNT=150|DISCOUNT=0|CASCADE=0
```

**Note**

The sequence of all fields is not guaranteed.
GPRS Volume/Duration Charge Fails (EDR 5)

Mandatory EDR 5 fields

- ACS_CUST_ID (on page 192) (ACS Customer ID)
- BALANCE_TYPES (on page 194) (account changed or created)
- BALANCES (on page 198) (pre-transaction account balances)
- CASCADE_ID (on page 200) (balance type cascade IDs)
- COSTS (on page 209) (rated calls)
- CS (on page 210) (call status, always D)
- CUG_NAME (on page 211) (closed user group)
- DISCOUNTS (on page 213) (for each named event)
- EVENT_CLASS (on page 215) (list of classes used)
- EVENT_COST (on page 215) (for each named event)
- EVENT_COUNT (on page 215) (for each named event)
- EVENT_NAME (on page 216) (list used for this call)
- EVENT_TIME_COST (on page 216) (for a named event)
- NACK (on page 221) (short list of codes)
- OVERRIDDEN_TARIFF_PLAN (on page 230) (ID)
- TARIFF_CODE (on page 242) (name)
- TCS (on page 242) (ccs time call started)

Example EDR 5

BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=PrePaidData|EVENT_NAME=PPD_Volume_1|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1

Note

The sequence of all fields is not guaranteed.
Overview

Introduction

This chapter defines the CCS EDRs for SMS-MO messages.

In this chapter

This chapter contains the following topics.

- National SMS-MO Succeeds (EDR 12,13) ................................................. 144
- National SMS-MO Fails (EDR 1,5,12,13) .................................................. 147
- Roaming SMS-MO Succeeds (EDR 12,13) ................................................ 149
- Roaming SMS-MO Fails (EDR 1,5,12,13) ................................................ 151
# National SMS-MO Succeeds (EDR 12,13)

## Introduction

There are two EDR records created for this event - a EDR type 12 and a EDR type 13.

## Mandatory EDR 12 fields

This list identifies the mandatory EDR record fields for a successful national SMS-MO (EDR type 12):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `CLI` (on page 207) (initiating call number)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `DISCOUNTS` (on page 213) (rated calls)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_COST` (on page 215) (for each named event)
- `EVENT_COUNT` (on page 215) (for each named event)
- `EVENT_NAME` (on page 216) (list used for this call)
- `EVENT_TIME_COST` (on page 216) (for a named event)
- `LOCAADD` (on page 218) (additional configuration prefixes)
- `TCS` (on page 242) (ccs time call started)
- `TN` (on page 243) (ccs called number)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

## Optional EDR 12 fields

This list identifies the optional EDR record fields for a successful national SMS-MO (EDR type 12):

- `OVERRIDDEN_TARIFF_PLAN` (on page 230) (ID)
- `OVERDRAWN_AMOUNT` (on page 230) (take Balance Negative)
- `REMAINING_CHARGE` (on page 237) (partial Charge)
- `TARIFF_CODE` (on page 242) (name)

## Mandatory EDR 13 fields

This list identifies the mandatory EDR record fields for a successful national SMS-MO (EDR type 13):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `CLI` (on page 207) (initiating call number)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `DISCOUNT_TYPE` - one of:
  - `DISCOUNT_TYPE` (on page 212) (applied to this call)
  - `DISCOUNT_TYPE` (on page 212) (applied to this call) - R*W

*Continued on next page*
National SMS-MO Succeeds (EDR 12,13), Continued

Mandatory EDR 13 fields (continued)

- **DISCOUNTS** (on page 213) (rated calls)
- **DURATION** (on page 215) (call length)
- **LENGTHS** - one of:
  - **LENGTHS** (on page 217) (rate durations)
  - **LENGTHS** (on page 218) (rate durations) -1end duration
- **RATES** (on page 232) (rated calls)
- **TCE** (on page 242) (ccs time call ended)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

Optional EDR 13 fields

This list identifies the optional EDR record fields for a successful national SMS-MO (EDR type 13):

- **OVERRIDE_TARIFF_PLAN** (on page 230) (ID)
- **TARIFF_CODE** (on page 242) (name)

Account Activated additional fields

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

Cross balance type discount additional fields

If the cross balance type discounting has been applied during the call, the following fields will be present:

- **CBTD_BALANCE_TYPES** (on page 201) (list to apply to discounts)
- **CBTD_BALANCE_TYPES** (on page 202) (list to apply to discounts) - mid call rate changes
- **CBTD_BALANCES** (on page 202) (value for each cross balance type)
- **CBTD_BALANCES** (on page 203) (value for each cross balance type) - mid call rate change
- **CBTD_CASCADE_ID** (on page 203) (used for this call)
- **CBTD_CASCADE_ID** (on page 204) (used for this call) - mid call rate change
- **CBTD_COSTS** (on page 204) (costs applied to each cross balance type)
- **CBTD_COSTS** (on page 205) (costs applied to each cross balance type) - mid call rate changes
- **CBTD_DISCOUNTS** (on page 205) (discounts applied to balance types)
- **CBTD_DISCOUNTS** (on page 206) (discounts applied to balance types) - mid call rate changes

Mobile number portability additional fields

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

*Continued on next page*
National SMS-MO Succeeds (EDR 12,13), Continued

| Example EDR 12 | BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=12|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|WALLET_TYPE=1|CLI=321206233252|TN=441473289900|LOCADD=E771231473289900|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COST=100|ACCOUNT_TYPE=4|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0 |
| Example Account Activated | BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=12|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|WALLET_TYPE=1|CLI=321206233252|TN=441473289900|LOCADD=E771231473289900|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COST=100|ACCOUNT_TYPE=4|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|EVENT_TIME_COST=0.00|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A |
| Example MSISDN | BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=12|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|WALLET_TYPE=1|CLI=321206233252|TN=441473289900|LOCADD=E771231473289900|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COST=100|ACCOUNT_TYPE=4|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|MSISDN=321206233252 |

Note

The sequence of all fields is not guaranteed.
# National SMS-MO Fails (EDR 1, 5, 12, 13)

## Introduction

There are 4 EDR records created for a failed National SMS-MO - EDR types 1, 5, 12 or 13.

## Mandatory EDR 1 and 13 fields

This list identifies the mandatory EDR record fields for an unsuccessful national SMS-MO (EDR type 1 or type 13):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **LOCADD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

## Mandatory EDR 5 and 12 fields

This list identifies the mandatory EDR record fields for an unsuccessful national SMS-MO (EDR type 5 or type 12):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **LOCADD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)

### Account Activated additional fields

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

### Mobile number portability additional fields

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

## Example EDR 5

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|BALANCE_TYPES=1|BALANCES=500|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1|ACCOUNT_TYPE=1
```

*Continued on next page*
National SMS-MO Fails (EDR 1, 5,12,13), Continued

Example MSISDN  
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1|ACCOUNT_TYPE=1|MSISDN=1394111111

Note  
The sequence of all fields is not guaranteed.
Roaming SMS-MO Succeeds (EDR 12,13)

<table>
<thead>
<tr>
<th>Introduction</th>
<th>There are 2 EDR records created for a successful Roaming SMS-MO - a type 12 and a type 13.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory EDR 12 fields</td>
<td>This list identifies the mandatory EDR record fields for a successful national SMS-MO (EDR type 12):</td>
</tr>
<tr>
<td></td>
<td>• ACCOUNT_TYPE (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td></td>
<td>• ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td></td>
<td>• BALANCE_TYPES (on page 194) (account changed or created)</td>
</tr>
<tr>
<td></td>
<td>• BALANCES (on page 196) (pre-call or account creation)</td>
</tr>
<tr>
<td></td>
<td>• CASCADE_ID (on page 200) (balance type cascade IDs)</td>
</tr>
<tr>
<td></td>
<td>• CLI (on page 207) (initiating call number)</td>
</tr>
<tr>
<td></td>
<td>• COSTS (on page 209) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• CS (on page 211) (call status, always S)</td>
</tr>
<tr>
<td></td>
<td>• DISCOUNTS (on page 213) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_CLASS (on page 215) (list of classes used)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_COST (on page 215) (for each named event)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_COUNT (on page 215) (for each named event)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_NAME (on page 216) (list used for this call)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_TIME_COST (on page 216) (for a named event)</td>
</tr>
<tr>
<td></td>
<td>• LOCADD (on page 218) (additional configuration prefixes)</td>
</tr>
<tr>
<td></td>
<td>• TN (on page 243) (ccs called number)</td>
</tr>
<tr>
<td></td>
<td>• WALLET_TYPE (on page 245) (ID of wallet recharged)</td>
</tr>
<tr>
<td>Optional EDR 12 fields</td>
<td>This list identifies the optional EDR record fields for a successful roaming SMS-MO (EDR type 12):</td>
</tr>
<tr>
<td></td>
<td>• OVERDRAWN_AMOUNT (on page 230) (take Balance Negative)</td>
</tr>
<tr>
<td></td>
<td>• REMAINING_CHARGE (on page 237) (partial Charge)</td>
</tr>
<tr>
<td>Optional EDR 13 fields</td>
<td>This list identifies the optional EDR record fields for a successful national SMS-MO (EDR type 13):</td>
</tr>
<tr>
<td></td>
<td>• OVERRIDDEN_TARIFF_PLAN (on page 230) (ID)</td>
</tr>
<tr>
<td></td>
<td>• TARIFF_CODE (on page 242) (name)</td>
</tr>
<tr>
<td>Account Activated additional fields</td>
<td>If the account is activated, the following fields will be present:</td>
</tr>
<tr>
<td></td>
<td>• NEW_ACCT_STATE (on page 222) (always active - A)</td>
</tr>
<tr>
<td></td>
<td>• OLD_ACCT_STATE (on page 227) (pre-call)</td>
</tr>
<tr>
<td>Example Account Activated</td>
<td>BILLING_ENGINE_ID=21</td>
</tr>
</tbody>
</table>

Continued on next page
Roaming SMS-MO Succeeds (EDR 12,13), Continued

Cross balance type discount additional fields

If the cross balance type discounting has been applied during the call, the following fields will be present:

- `CBTD_BALANCE_TYPES` (on page 201) (list to apply to discounts)
- `CBTD_BALANCE_TYPES` (on page 202) (list to apply to discounts) - mid call rate changes
- `CBTD_BALANCES` (on page 202) (value for each cross balance type)
- `CBTD_BALANCES` (on page 203) (value for each cross balance type) - mid call rate change
- `CBTD_CASCADE_ID` (on page 203) (used for this call)
- `CBTD_CASCADE_ID` (on page 204) (used for this call) - mid call rate change
- `CBTD_COSTS` (on page 204) (costs applied to each cross balance type)
- `CBTD_COSTS` (on page 205) (costs applied to each cross balance type) - mid call rate changes
- `CBTD_DISCOUNTS` (on page 205) (discounts applied to balance types)
- `CBTD_DISCOUNTS` (on page 205) (discounts applied to balance types) - mid call rate changes

Mobile number portability additional fields

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- `PORTED` (on page 231) (name of porting carrier)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

Example EDR 13

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=13|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=321206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALLENTS=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,40.00|DISCOUNTS=450000,560000|MAX_CHARGE=500|DURATION=160|TN=441473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S+W+R|WALLET_TYPE=1|LOCADD=E77123441473289900|ACCOUNT_TYPE=1
```

Example MSISDN

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=13|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=321206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALLENTS=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,0.00|DISCOUNTS=450000,560000|MAX_CHARGE=500|DURATION=60|TN=441473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S+W+R|WALLET_TYPE=1|LOCADD=E77123441473289900|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|ACCOUNT_TYPE=1|MSISDN=321206233252
```

Note

The sequence of all fields is not guaranteed.
Roaming SMS-MO Fails (EDR 1,5,12,13)

**Introduction**
There are 4 EDR records created for an unsuccessful Roaming SMS-MO - EDR type 1, 5, 12 or 13.

**Mandatory EDR 1 and 13 fields**
This list identifies the mandatory EDR record fields for an unsuccessful national SMS-MO (EDR type 1 or type 13):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **LOCA_DD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

**Mandatory EDR 5 and 12 fields**
This list identifies the mandatory EDR record fields for an unsuccessful national SMS-MO (EDR type 5 or type 12):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **LOCA_DD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)

**Account Activated additional fields**
If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

**Mobile number portability additional fields**
If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

**MSISDN additional fields**
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

**Example EDR 13**

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=13|RECORD_DATE=20040623121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=321206233252|TN=441473289900|TCS=20040625124332|CS=D|NACK=INSF|WALLET_TYPE=1|LOCADD=E77123441473289900|ACS_CUST_ID=1
```

Continued on next page
### Roaming SMS-MO Fails (EDR 1,5,12,13), Continued

<table>
<thead>
<tr>
<th>Example Account Activated</th>
</tr>
</thead>
<tbody>
<tr>
<td>BILLING_ENGINE_ID=21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example MSISDN</th>
</tr>
</thead>
<tbody>
<tr>
<td>BILLING_ENGINE_ID=21</td>
</tr>
</tbody>
</table>

### Note
The sequence of all fields is not guaranteed.
Overview

This chapter defines the CCS EDRs for SMS-MT messages.

This chapter contains the following topics.

- National SMS-MT Succeeds (EDR 12,13) .................................................. 154
- National SMS-MT Fails (EDR 1,5,12,13) .................................................... 157
- Roaming SMS-MT Succeeds (EDR 12,13) ................................................. 159
- Roaming SMS-MT Fails (EDR 1,5,12,13) ................................................... 162
**National SMS-MT Succeeds (EDR 12,13)**

**Introduction**
There are 2 EDR records for a successful National SMS-MT - EDR type 12 and type 13.

**Mandatory EDR 12 fields**
This list identifies the mandatory EDR record fields for a successful National SMS-MT (EDR type 12):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCETYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **CLI** (on page 207) (initiating call number)
- **DISCOUNTS** (on page 213) (rated calls)
- **EVENTCLASS** (on page 215) (list of classes used)
- **EVENTCOST** (on page 215) (for each named event)
- **EVENTCOUNT** (on page 215) (for each named event)
- **EVENTNAME** (on page 216) (list used for this call)
- **EVENTTIMECOST** (on page 216) (for a named event)
- **LOCADD** (on page 218) (additional configuration prefixes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

**Optional EDR 12 fields**
This list identifies the optional EDR record fields for a successful national SMS-MT (EDR type 12):

- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **OVERRIDDEN_TARIFF_PLAN** (on page 230) (ID)
- **REMAINING_CHARGE** (on page 237) (partial Charge)
- **TARIFF_CODE** (on page 242) (name)

**Mandatory EDR 13 fields**
This table lists the mandatory fields for a successful National SMS-MT (EDR type 13).

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCETYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **CLI** (on page 207) (initiating call number)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNT_TYPE** - one of:
  - **DISCOUNT_TYPE** (on page 212) (applied to this call)
  - **DISCOUNT_TYPE** (on page 212) (applied to this call) - R^W
- **DISCOUNTS** (on page 213) (rated calls)
- **DURATION** (on page 215) (call length)
- **LENGTHS** - one of:

---

*Continued on next page*
### National SMS-MT Succeeds (EDR 12,13), Continued

**Mandatory EDR 13 fields (continued)**

- `LENGTHS` (on page 217) (rate durations)
- `LENGTHS` (on page 218) (rate durations) - end duration
- `LOCADD` (on page 218) (additional configuration prefixes)
- `MAX_CHARGE` (on page 218) (for this call)
- `RATES` (on page 232) (rated calls)
- `TCE` (on page 242) (ccs time call ended)
- `TN` (on page 243) (ccs called number)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

**Optional EDR 13 fields**

This list identifies the optional EDR record fields for a successful national SMS-MT (EDR type 13):

- `OVERRIDEN_TARIFF_PLAN` (on page 230) (ID)
- `TARIFF_CODE` (on page 242) (name)

**Account Activated additional fields**

If the account is activated, the following fields will be present:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

**Cross balance type discount additional fields**

If the cross balance type discounting has been applied during the call, the following fields will be present:

- `CBTD_BALANCE_TYPES` (on page 201) (list to apply to discounts)
- `CBTD_BALANCE_TYPES` (on page 202) (list to apply to discounts) - mid call rate changes
- `CBTD_BALANCES` (on page 202) (value for each cross balance type)
- `CBTD_BALANCES` (on page 203) (value for each cross balance type) - mid call rate change
- `CBTD.Cascade_ID` (on page 203) (used for this call)
- `CBTD.Cascade_ID` (on page 204) (used for this call) - mid call rate change
- `CBTD.COSTS` (on page 204) (costs applied to each cross balance type)
- `CBTD.COSTS` (on page 205) (costs applied to each cross balance type) - mid call rate changes
- `CBTD_DISCOUNTS` (on page 205) (discounts applied to balance types)
- `CBTD_DISCOUNTS` (on page 206) (discounts applied to balance types) - mid call rate changes

**Mobile number portability additional fields**

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- `PORTED` (on page 231) (name of porting carrier)

**MSISDN additional fields**

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

*Continued on next page*
National SMS-MT Succeeds (EDR 12,13), Continued

Example MSISDN

BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=12|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|WALLET_TYPE=1|CLI=321206233252|TN=441473289900|LOCADD=E771231473289900|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT_TYPE=4|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|MSISDN=321206233252

Note

The sequence of all fields is not guaranteed.
National SMS-MT Fails (EDR 1,5,12,13)

Introduction
There are 4 EDR records created for an unsuccessful National SMS-MT - EDR type 1, 5, 12 or 13.

Mandatory EDR 1 and 13 fields
This list identifies the mandatory EDR record fields for an unsuccessful national SMS-MT (EDR type 1 or type 13):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **LCADD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

Mandatory EDR 5 and 12 fields
This table lists the mandatory fields for an unsuccessful national SMS-MO (EDR type 5 or type 12):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **LCADD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Example EDR 5

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|BALANCE_TYPES=1|BALANCES=500|EVENT_CLASS=SMSMT|EVENT_NAME=SMSMT_100|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1
```
National SMS-MT Fails (EDR 1,5,12,13), Continued

Example MSISDN

BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=5|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|NACK=INSF|TCS=20040706104957|CS=D|ACS_CUST_ID=1|ACCOUNT_TYPE=1|MSISDN=13941111111

Note

The sequence of all fields is not guaranteed.
Roaming SMS-MT Succeeds (EDR 12,13)

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are 2 EDR records created for a successful Roaming SMS-MT - type 12 or 13.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mandatory EDR 12 fields</th>
<th>This list identifies the mandatory EDR record fields for a successful roaming SMS-MT (EDR type 12):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• ACCOUNT_TYPE (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td></td>
<td>• ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td></td>
<td>• BALANCE_TYPES (on page 194) (account changed or created)</td>
</tr>
<tr>
<td></td>
<td>• BALANCES (on page 196) (pre-call or account creation)</td>
</tr>
<tr>
<td></td>
<td>• CASCADE_ID (on page 200) (balance type cascade IDs)</td>
</tr>
<tr>
<td></td>
<td>• CLI (on page 207) (initiating call number)</td>
</tr>
<tr>
<td></td>
<td>• COSTS (on page 209) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• CS (on page 211) (call status, always S)</td>
</tr>
<tr>
<td></td>
<td>• DISCOUNTS (on page 213) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_CLASS (on page 215) (list of classes used)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_COST (on page 215) (for each named event)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_COUNT (on page 215) (for each named event)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_NAME (on page 216) (list used for this call)</td>
</tr>
<tr>
<td></td>
<td>• EVENT_TIME_COST (on page 216) (for a named event)</td>
</tr>
<tr>
<td></td>
<td>• LOCADD (on page 218) (additional configuration prefixes)</td>
</tr>
<tr>
<td></td>
<td>• TCS (on page 242) (ccs time call started)</td>
</tr>
<tr>
<td></td>
<td>• TN (on page 243) (ccs called number)</td>
</tr>
<tr>
<td></td>
<td>• WALLET_TYPE (on page 245) (ID of wallet recharged)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mandatory EDR 13 fields</th>
<th>This table lists the mandatory fields for a successful roaming SMS-MT (EDR type 13):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• ACCOUNT_TYPE (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td></td>
<td>• ACS_CUST_ID (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td></td>
<td>• BALANCE_TYPES (on page 194) (account changed or created)</td>
</tr>
<tr>
<td></td>
<td>• BALANCES (on page 196) (pre-call or account creation)</td>
</tr>
<tr>
<td></td>
<td>• CASCADE_ID (on page 200) (balance type cascade IDs)</td>
</tr>
<tr>
<td></td>
<td>• CLI (on page 207) (initiating call number)</td>
</tr>
<tr>
<td></td>
<td>• COSTS (on page 209) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• CS (on page 211) (call status, always S)</td>
</tr>
<tr>
<td></td>
<td>• DISCOUNT_TYPE - one of:</td>
</tr>
<tr>
<td></td>
<td>▪ DISCOUNT_TYPE (on page 212) (applied to this call)</td>
</tr>
<tr>
<td></td>
<td>▪ DISCOUNT_TYPE (on page 212) (applied to this call) - R&quot;W</td>
</tr>
<tr>
<td></td>
<td>• DISCOUNTS (on page 213) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• DURATION (on page 215) (call length)</td>
</tr>
<tr>
<td></td>
<td>• LENGTHS - one of:</td>
</tr>
<tr>
<td></td>
<td>▪ LENGTHS (on page 217) (rate durations)</td>
</tr>
<tr>
<td></td>
<td>▪ LENGTHS (on page 218) (rate durations) -1end duration</td>
</tr>
<tr>
<td></td>
<td>• LOCADD (on page 218) (additional configuration prefixes)</td>
</tr>
<tr>
<td></td>
<td>• MAX_CHARGE (on page 218) (for this call)</td>
</tr>
<tr>
<td></td>
<td>• RATES (on page 232) (rated calls)</td>
</tr>
</tbody>
</table>

Continued on next page
Roaming SMS-MT Succeeds (EDR 12,13), Continued

**Mandatory EDR 13 fields** (continued)

- `TCE` (on page 242) (ccs time call ended)
- `TCS` (on page 242) (ccs time call started)
- `TN` (on page 243) (ccs called number)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

**Optional EDR 13 fields**

This list identifies the optional EDR record fields for a successful national SMS-MT (EDR type 13):

- `OVERRIDDEN_TARIFF_PLAN` (on page 230) (ID)
- `TARIFF_CODE` (on page 242) (name)

**Account Activated additional fields**

If the account is activated, the following fields will be present:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

**Cross balance type discount additional fields**

If the cross balance type discounting has been applied during the call, the following fields will be present:

- `CBTD_BALANCE_TYPES` (on page 201) (list to apply to discounts)
- `CBTD_BALANCE_TYPES` (on page 202) (list to apply to discounts) - mid call rate changes
- `CBTD_BALANCES` (on page 202) (value for each cross balance type)
- `CBTD_BALANCES` (on page 203) (value for each cross balance type) - mid call rate change
- `CBTD_CASCADE_ID` (on page 203) (used for this call)
- `CBTD_CASCADE_ID` (on page 204) (used for this call) - mid call rate change
- `CBTD_COSTS` (on page 204) (costs applied to each cross balance type)
- `CBTD_COSTS` (on page 205) (costs applied to each cross balance type) - mid call rate changes
- `CBTD_DISCOUNTS` (on page 205) (discounts applied to balance types)
- `CBTD_DISCOUNTS` (on page 206) (discounts applied to balance types) - mid call rate changes

**Mobile number portability additional fields**

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- `PORTED` (on page 231) (name of porting carrier)

**MSISDN additional fields**

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

*Continued on next page*
Roaming SMS-MT Succeeds (EDR 12,13), Continued

Example EDR 13
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=13|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=3210623252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,40.00|DISCOUNTS=450000,560000|MAX_CHARGE=500|DURATION=160|TN=441473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S\*W\*R|WALLET_TYPE=1|LOCADD=E77123441473289900|ROAMING_TYPE=MT|ROAMING_COUNTRY=United Kingdom

Example MSISDN
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=488297|CDR_TYPE=12|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|WALLET_TYPE=1|CLI=321206233252|TN=44147328990|LOCADD=E7712341473289900|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COSTS=100|ACCOUNT_TYPE=4|EVENT_CLASS=SMSMO|EVENT_NAME=SMSMO_100|EVENT_COST=100|EVENT_COUNT=1|DISCOUNT=0|CASCADE=0|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|MSISDN=321206233252

Note
The sequence of all fields is not guaranteed.
Roaming SMS-MT Fails (EDR 1,5,12,13)

Introduction

There are 4 EDR records created for an unsuccessful Roaming SMS-MT - EDR type 1, 5, 12 or 13.

Mandatory EDR 1 and 13 fields

This list identifies the mandatory EDR record fields for an unsuccessful national SMS-MT (EDR type 1 or type 13):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **LOCADD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)
- **WALLET_TYPE** (on page 244) (ID of wallet changed)

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

If the Mobile Number Portability (MNP) software is installed, the following fields will be present:

- **PORTED** (on page 231) (name of porting carrier)

Mandatory EDR 5 and 12 fields

This table lists the mandatory fields for an unsuccessful national SMS-MO (EDR type 5 or type 12):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CLI** (on page 207) (initiating call number)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **LOCADD** (on page 218) (additional configuration prefixes)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)
- **TN** (on page 243) (ccs called number)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Example Account Activated

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=13|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=321206233252|TN=41473289900|TCS=20040625124332|CS=D|NACK=INSF|WALLET_TYPE=1|LOCADD=E77123441473289900|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A
```
Roaming SMS-MT Fails (EDR 1,5,12,13), Continued

**Example MSISDN**

BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=487291|CDR_TYPE=13|RECORD_DATE=20040803121758|ACCT_ID=83|ACCT_REF_ID=83|CLI=321206233252|TN=441473289900|TCS=200406250124332|CS=D|NACK=INSF|WALLET_TYPE=1|LOCADD=E77123441473289900|ACS_CUST_ID=1|OLD_ACCT_STATE=P|NEW_ACCT_STATE=A|MSISDN=32120623325

**Note**

The sequence of all fields is not guaranteed.
Chapter 24

OSA

Overview

Introduction

This chapter defines the CCS EDRs for Open Service Access (OSA).

In this chapter

This chapter contains the following topics.

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- OSA Reservation Amount Failure (EDR 21) ........................................... 167
- OSA Direct Amount Succeeds (EDR 23) .................................................... 168
- OSA Direct Amount Failure (EDR 23) .................................................. 170
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- OSA Direct Named Events Succeeds (EDR 27) ......................................... 179
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## OSA Reservation Amount Succeeds (EDR 21)

### Mandatory EDR 21 fields

This list identifies the mandatory EDR record fields for a successful OSA reservation amount (EDR type 21):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `APPLICATION_DESC` (on page 193) (application freeform)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `TCE` (on page 242) (ccs time call ended)
- `TCS` (on page 242) (ccs time call started)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

**Note:** See *EDR header fields* (on page 20) for a list of fields common to every EDR.

### Optional EDR 21 fields

This list identifies the optional EDR record fields for a successful OSA reservation amount (EDR type 21):

- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

### Example EDR 21

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=12|CDR_TYPE=21|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|
WALLET_TYPE=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=28|APPLICATION_DESC=OSA Reservation Amount|CASCADE_ID=1
```

**Note:**

The sequence of all fields is not guaranteed.
OSA Reservation Amount Failure (EDR 21)

Mandatory EDR 21 fields
This list identifies the optional EDR record fields for an unsuccessful OSA reservation amount scenario (EDR type 21):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- APPLICATION_DESC (on page 193) (application freeform)
- CS (on page 210) (call status, always D)
- NACK (on page 221) (short list of codes)
- TCS (on page 242) (ccs time call started)
- WALLET_TYPE (on page 245) (ID of wallet recharged)

Optional EDR 21 fields
This list identifies the optional EDR record fields for an unsuccessful OSA reservation amount (EDR type 21):

- NEW_ACCT_STATE (on page 222) (always active - A)
- OLD_ACCT_STATE (on page 227) (pre-call)

MSISDN additional fields
If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (account calling number)

Example EDR 21
BILLING_ENGINE_ID=1|SCP_ID=138338707|SEQUENCE_NUMBER=24|CDR_TYPE=21|RECORD_DATE=20060705084254|ACCT_ID=66|ACCT_REF_ID=97|TCS=20060705084254|ACCOUNT_TYPE=4|WALLET_TYPE=1|CS=D|NACK=INSF|APPLICATION_DESC=IARR_Req

Note
The OSA reservation amount failure scenario is also known as IARR_Req. The APPLICATION_DESC field in the call data record uses this name to identify the scenario.
# OSA Direct Amount Succeeds (EDR 23)

## Mandatory EDR 23 fields

This list identifies the mandatory EDR record fields for a successful OSA direct amount (EDR type 23):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **APPLICATION_DESC** (on page 193) (application freeform)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **BONUS_TYPE** (on page 199) (name)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before voucher recharge)
- **REFERENCE** (on page 235) (OSA bonus)
- **RELOAD_BONUS** (on page 236) (promotion name)
- **RELOAD_BONUS_AMOUNT** (on page 236) (amount applied)
- **RELOAD_BONUS_EXPIRY** (on page 237) (date remaining bonus expires)
- **RELOAD_BONUS_LEFT** (on page 237) (bonus amount remaining)

**Note:** See EDR header fields (on page 20) for a list of fields common to every EDR.

## Optional EDR 23 fields

This list identifies the optional EDR record fields for a successful OSA direct amount (EDR type 23):

- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **NEW_ACCT_EXPIRY** (on page 222) (date after recharge)
- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_EXPIRY** (on page 226) (date before recharge)
- **OLD_ACCT_STATE** (on page 227) (pre-call)
- **RESULT** (on page 238) (voucher redemption, always Success)
- **TCE** (on page 242) (ccs time call ended)
- **TCS** (on page 242) (ccs time call started)
- **TYPE_DESCRIPTION** (on page 243) (voucher type)
- **VOUCHER** (on page 244) (serial number of redeemed voucher - 3.1.5)
- **VOUCHER_NUMBER** (on page 244) (redeemed voucher)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

## MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

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Continued on next page
Example EDR 23

Example OSA VOUCHER RECHARGE:

ACCOUNT_TYPE=2|ACCT_ID=132577|ACCT_REF_ID=131839|ACS_CUST_ID=1|APPLICATION_DESC=|BALANCES=10000,5000,0,25|BALANCE_TYPES=1,2,6,123|BILLING_ENGINE_ID=16|BONUS_TYPE=CUSTOM|CDR_TYPE=23|COSTS=-1000,-500,0,1|CS=S|NEW_ACCT_EXPIRY=20110220070000|NEW_BALANCE_EXPIRIES=20101009213449,20100916213449,0,0|OLD_ACCT_EXPIRY=20100920070000|OLD_BALANCE_EXPIRIES=20100912070000,20100911070000,0,0|RECORD_DATE=20100909213449|REFERENCE=V_COMP_ALL|RELOAD_BONUS_AMOUNT=500|RELOAD_BONUS_EXPIRY=|RELOAD_BONUS_LEFT=24|RESULT=Success|SCP_ID=252779281|SEQUENCE_NUMBER=1|TYPE_DESCRIPTION=VRPI|VOUCHER=1000776948|VOUCHER_NUMBER=42169867571303

Example OSA CUSTOM RECHARGE:

BILLING_ENGINE_ID=16|SCP_ID=252779281|SEQUENCE_NUMBER=1|CDR_TYPE=23|RECORD_DATE=20100909214131|ACCT_ID=132577|ACCT_REF_ID=131839|RELOAD_BONUS=test|RELOAD_BONUS.getAmount=500|RELOAD_BONUS_LEFT=23|RELOAD_BONUS_EXPIRY=|TCS=20100909214131|TCE=20100909214131|ACCOUNT_TYPE=2|WALLET_TYPE=1|CS=S|BALANCE_TYPES=1,2,123|BALANCES=11000,5500,24|COSTS=-500,-500,1|OLD_BALANCE_EXPIRIES=20101009213449,20100916213449,0,0|NEW_BALANCE_EXPIRIES=20101208214131,20101208214131,0|APPLICATION_DESC=|BONUS_TYPE=CUSTOM|REFERENCE=ATM

Note

The sequence of all fields is not guaranteed.
# OSA Direct Amount Failure (EDR 23)

## Mandatory EDR 23 fields

This list identifies the mandatory EDR record fields for an unsuccessful OSA direct amount (EDR type 23):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `APPLICATION_DESC` (on page 193) (application freeform)
- `CS` (on page 210) (call status, always D)
- `NACK` (on page 221) (short list of codes)
- `TCS` (on page 242) (ccs time call started)
- `WALLET_TYPE` (on page 245) (ID of wallet recharged)

**Note:** See EDR header fields (on page 20) for a list of fields common to every EDR.

## Optional EDR 23 fields

This list identifies the optional EDR record fields for an unsuccessful OSA direct amount (EDR type 23):

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

## MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)
# OSA Reservation Seconds Succeeds (EDR 24)

<table>
<thead>
<tr>
<th>Mandatory EDR 24 fields</th>
<th>This list identifies the mandatory EDR record fields for a successful OSA reservation seconds (EDR type 24):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <code>ACCOUNT_TYPE</code> (on page 192) (Product Type ID)</td>
</tr>
<tr>
<td></td>
<td>• <code>ACS_CUST_ID</code> (on page 192) (ACS Customer ID)</td>
</tr>
<tr>
<td></td>
<td>• <code>APPLICATION_DESC</code> (on page 193) (application freeform)</td>
</tr>
<tr>
<td></td>
<td>• <code>BALANCE_TYPES</code> (on page 194) (account changed or created)</td>
</tr>
<tr>
<td></td>
<td>• <code>BALANCES</code> (on page 196) (pre-call or account creation)</td>
</tr>
<tr>
<td></td>
<td>• <code>CASCADE_ID</code> (on page 200) (balance type cascade IDs)</td>
</tr>
<tr>
<td></td>
<td>• <code>CBTD_BALANCE_TYPES</code> (on page 201) (list to apply to discounts)</td>
</tr>
<tr>
<td></td>
<td>• <code>CBTD_BALANCES</code> (on page 202) (value for each cross balance type)</td>
</tr>
<tr>
<td></td>
<td>• <code>CBTDCASCADE_ID</code> (on page 203) (used for this call)</td>
</tr>
<tr>
<td></td>
<td>• <code>CBTD_COSTS</code> (on page 204) (costs applied to each cross balance type)</td>
</tr>
<tr>
<td></td>
<td>• <code>CBTD_DISCOUNTS</code> (on page 205) (discounts applied to balance types)</td>
</tr>
<tr>
<td></td>
<td>• <code>CLI</code> (on page 207) (initiating call number)</td>
</tr>
<tr>
<td></td>
<td>• <code>COSTS</code> (on page 209) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• <code>CS</code> (on page 211) (call status, always S)</td>
</tr>
<tr>
<td></td>
<td>• <code>DISCOUNT_TYPE</code> - one of:</td>
</tr>
<tr>
<td></td>
<td>• <code>DISCOUNT_TYPE</code> (on page 212) (applied to this call)</td>
</tr>
<tr>
<td></td>
<td>• <code>DISCOUNT_HOUR</code> (on page 212) (applied to this call) - R*W</td>
</tr>
<tr>
<td></td>
<td>• <code>DISCOUNTS</code> (on page 213) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• <code>DURATION</code> (on page 215) (call length)</td>
</tr>
<tr>
<td></td>
<td>• <code>LENGTHS</code> - one of:</td>
</tr>
<tr>
<td></td>
<td>• <code>LENGTHS</code> (on page 217) (rate durations)</td>
</tr>
<tr>
<td></td>
<td>• <code>LENGTHS</code> (on page 218) (rate durations) - end duration</td>
</tr>
<tr>
<td></td>
<td>• <code>MAX_CHARGE</code> (on page 218) (for this call)</td>
</tr>
<tr>
<td></td>
<td>• <code>RATES</code> (on page 232) (rated calls)</td>
</tr>
<tr>
<td></td>
<td>• <code>TCE</code> (on page 242) (ccs time call ended)</td>
</tr>
<tr>
<td></td>
<td>• <code>TCS</code> (on page 242) (ccs time call started)</td>
</tr>
<tr>
<td></td>
<td>• <code>TN</code> (on page 243) (ccs called number)</td>
</tr>
</tbody>
</table>

**Note:** See EDR header fields (on page 20) for a list of fields common to every EDR.

<table>
<thead>
<tr>
<th>Account Activated additional fields</th>
<th>If the account is activated, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <code>NEW_ACCT_STATE</code> (on page 222) (always active - A)</td>
</tr>
<tr>
<td></td>
<td>• <code>OLD_ACCT_STATE</code> (on page 227) (pre-call)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSISDN additional fields</th>
<th>If the MSISDN csCDRLoader plugin is installed on the USMS, the following fields will be present:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <code>MSISDN</code> (on page 220) (account calling number)</td>
</tr>
</tbody>
</table>
OSA Reservation Seconds Succeeds (EDR 24), Continued

Example EDR 24

BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=5|CDR_TYPE=24|RECORD_DATE=20040803142342|ACCT_ID=83|ACCT_REF_ID=83|CLI=01206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=1000|COSTS=28|ACCOUNT_TYPE=1|CASCADE_ID=1|RATES=50,25|LENGTHS=120.00,40.00|DISCOUNTS=450000,560000|MAX_CHARGE=500|DURATION=160|TN=01473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISCOUNT_TYPE=S*W*R|APPLICATION_DESC=OSA Reservation Seconds

Note
The sequence of all fields is not guaranteed.
OSA Reservation Seconds Fails (EDR 1,24)

Mandatory EDR 1 or 24 fields

This list identifies the mandatory EDR record fields for an unsuccessful OSA reservation seconds scenario (EDR type 1 or type 24):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `APPLICATION_DESC` (on page 193) (application freeform)
- `CLI` (on page 207) (initiating call number)
- `CS` (on page 210) (call status, always D)
- `NACK` (on page 221) (long list of codes)
- `TCS` (on page 242) (ccs time call started)
- `TN` (on page 243) (ccs called number)

Note: See EDR header fields (on page 20) for a list of fields common to every EDR.

Account Activated additional fields

If the account is activated, the following fields will be present:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

Example EDR 24

BILLING_ENGINE_ID=1|SCP_ID=138338707|SEQUENCE_NUMBER=26|CDR_TYPE=24|RECORD_DATE=20070705084425|ACCT_ID=66|ACCT_REF_ID=66|CLI=11008|TN=11009|TCS=20070705084425|CS=D|ACCOUNT_TYPE=4|NACK=CRIS|APPLICATION_DESC=IR_Req|ACS_CUST_ID=1

Notes

The sequence of all fields is not guaranteed.

The OSA reservation seconds fails scenario is also known as IR_Req. The APPLICATION_DESC field in the call data record uses this name to identify the scenario.
### OSA Reservation Named Events Succeeds (EDR 25)

#### Mandatory EDR 25 fields

This list identifies the mandatory EDR record fields for a successful OSA reservation named events scenario (EDR type 25):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `ACS_CUST_ID` (on page 192) (ACS Customer ID)
- `APPLICATION_DESC` (on page 193) (application freeform)
- `BALANCE_TYPES` (on page 194) (account changed or created)
- `BALANCES` (on page 196) (pre-call or account creation)
- `CASCADE_ID` (on page 200) (balance type cascade IDs)
- `COSTS` (on page 209) (rated calls)
- `CS` (on page 211) (call status, always S)
- `EVENT_CLASS` (on page 215) (list of classes used)
- `EVENT_COST` (on page 215) (for each named event)
- `EVENT_COUNT` (on page 215) (for each named event)
- `EVENT_NAME` (on page 216) (list used for this call)
- `EVENT_TIME_COST` (on page 216) (for a named event)
- `TCS` (on page 242) (ccs time call started)

**Note:** See EDR header fields (on page 20) for a list of fields common to every EDR.

#### Optional EDR 25 fields

This list identifies the optional EDR record fields for a successful OSA reservation named events scenario (EDR type 25):

- `OVERDRAWN_AMOUNT` (on page 230) (take Balance Negative)
- `REMAINING_CHARGE` (on page 237) (partial Charge)

#### Account Activated additional fields

If the account is activated, the following fields will be present:

- `NEW_ACCT_STATE` (on page 222) (always active - A)
- `OLD_ACCT_STATE` (on page 227) (pre-call)

#### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- `MSISDN` (on page 220) (account calling number)

#### Example EDR 25

```plaintext
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=9|CDR_TYPE=25|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|APPLICATION_DESC=OSA Reservation Named Events|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|BALANCES=1000|COSTS=90|ACCOUNT_TYPE=4|EVENT_CLASS=OSA|EVENT_NAME=OSA_Reservation_10|EVENT_COST=10|EVENT_COUNT=9|DISCOUNT=0|CASCADE=0
```

**Note**

The sequence of all fields is not guaranteed.
### OSA Reservation Named Events Fails (EDR 5,25)

#### Mandatory EDR 5 or 25 fields

This list identifies the mandatory EDR record fields for an unsuccessful OSA reservation named events (EDR type 5 or 25):

- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **APPLICATION_DESC** (on page 193) (application freeform)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **NACK** (on page 221) (short list of codes)
- **TCS** (on page 242) (ccs time call started)

**Note:** See *EDR header fields* (on page 20) for a list of fields common to every EDR.

#### MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

#### Example EDR 25

```
BILLING_ENGINE_ID=1|SCP_ID=138338707|SEQUENCE_NUMBER=25|CDR_TYPE=25|RECORD_DATE=20060705084356|ACCT_ID=66|ACCT_REF_ID=97|ACCOUNT_TYPE=4|EVENT_CLASS=OSA_CHAM|EVENT_NAME=OSA_1|NACK=INSF|TCS=20060705084356|CS=D|APPLICATION_DESC=INER_Req
```

#### Notes

The sequence of all fields is not guaranteed.

The OSA reservation named events fails scenario is also known as INER_Req. The **APPLICATION_DESC** field in the call data record uses this name to identify the scenario.
OSA Direct Seconds Succeeds (EDR 26)

Mandatory EDR 26 fields

This list identifies the mandatory EDR record fields for a successful OSA direct seconds (EDR type 26):

- ACCOUNT_TYPE (on page 192) (Product Type ID)
- ACS_CUST_ID (on page 192) (ACS Customer ID)
- APPLICATION_DESC (on page 193) (Application freeform)
- BALANCE_TYPES (on page 194) (Account changed or created)
- BALANCES (on page 196) (pre-call or account creation)
- CASCADE_ID (on page 200) (Balance type cascade IDs)
- CBTD_BALANCE_TYPES (on page 201) (List to apply to discounts)
- CBTD_BALANCES (on page 202) (Value for each cross balance type)
- CBTDCASCADE_ID (on page 203) (Used for this call)
- CBTD_COSTS (on page 204) (Costs applied to each cross balance type)
- CBTD_DISCOUNTS (on page 205) (Discounts applied to balance types)
- CLI (on page 207) (Initiating call number)
- COSTS (on page 209) (Rated calls)
- CS (on page 211) (Call status, always S)
- DISCOUNT_TYPE - one of:
  - DISCOUNT_TYPE (on page 212) (Applied to this call)
  - DISCOUNT_TYPE (on page 212) (Applied to this call) - R*W
- DISCOUNTS (on page 213) (Rated calls)
- DURATION (on page 215) (Call length)
- LENGTHS - one of:
  - LENGTHS (on page 217) (Rate durations)
  - LENGTHS (on page 218) (Rate durations) - End duration
- MAX_CHARGE (on page 218) (For this call)
- RATES (on page 232) (Rated calls)
- TCE (on page 242) (CCS time call ended)
- TCS (on page 242) (CCS time call started)
- TN (on page 243) (CCS called number)

Note: See EDR header fields (on page 20) for a list of fields common to every EDR.

Account Activated additional fields

If the account is activated, the following fields will be present:

- NEW_ACCT_STATE (on page 222) (Always active - A)
- OLD_ACCT_STATE (on page 227) (Pre-call)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- MSISDN (on page 220) (Account calling number)

Continued on next page
# OSA Direct Seconds Succeeds (EDR 26), Continued

**Example EDR 26**

BILLING ENGINE ID=21|SCP ID=366273322|SEQUENCE NUMBER=13|CDR TYPE=26|RECORD DATE=20040803142342|ACCT ID=83|ACCT REF ID=83|CLI=01206233252|ACS CUST ID=1|BALANCE TYPES=1|BALANCES=1000|C OSTS=28|ACCOUNT TYPE=1|CASCADE ID=1|RATES=50,25|LENGTHS=120.0 0,40.00|DISCOUNTS=450000,560000|MAX CHARGE=500|DURATION=160|T N=01473289900|TCS=20040803141934|TCE=20040803142034|CS=S|DISC OUNT TYPE=S*W*R|APPLICATION DESC=OSA Direct Seconds

**Note**

The sequence of all fields is not guaranteed.
OSA Direct Seconds Fails (EDR 26)

Mandatory EDR 26 fields

This list identifies the mandatory EDR record fields for an unsuccessful OSA direct seconds (EDR type 26):

- \textit{ACCOUNT\_TYPE} (on page 192) (Product Type ID)
- \textit{ACS\_CUST\_ID} (on page 192) (ACS Customer ID)
- \textit{APPLICATION\_DESC} (on page 193) (application freeform)
- \textit{CLI} (on page 207) (initiating call number)
- \textit{CS} (on page 210) (call status, always D)
- \textit{NACK} (on page 221) (long list of codes)
- \textit{TCS} (on page 242) (ccs time call started)
- \textit{TN} (on page 243) (ccs called number)

Note: See \textit{EDR header fields} (on page 20) for a list of fields common to every EDR.

If the account is activated, the following fields will be present:

- \textit{NEW\_ACCT\_STATE} (on page 222) (always active - A)
- \textit{OLD\_ACCT\_STATE} (on page 227) (pre-call)

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- \textit{MSISDN} (on page 220) (account calling number)

Example EDR 26

\begin{verbatim}
BILLING\_ENGINE\_ID=21|SCP\_ID=230612530|SEQUENCE\_NUMBER=15|CDR\_TYPE=26|RECORD\_DATE=20070703121758|ACCT\_ID=83|ACCT\_REF\_ID=83|
CLI=01206233252|TN=01473289900|TCS=20040625124332|CS=D|ACCOUNT\_TYPE=563|NACK=INSF|APPLICATION\_DESC=OSA Direct Seconds|ACS\_CUST\_ID=1
\end{verbatim}

Note

The sequence of all fields is not guaranteed.
OSA Direct Named Events Succeeds (EDR 27)

Mandatory EDR 27 fields

This list identifies the mandatory EDR record fields for a successful OSA direct named events (EDR type 27):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **APPLICATION_DESC** (on page 193) (application freeform)
- **BALANCE_TYPES** (on page 194) (account changed or created)
- **BALANCES** (on page 196) (pre-call or account creation)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNTS** (on page 213) (for each named event)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_COUNT** (on page 215) (for each named event)
- **EVENT_NAME** (on page 216) (list used for this call)
- **EVENT_COST** (on page 216) (for a named event)
- **EVENT_TIME_COST** (on page 216) (for a named event)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **TCS** (on page 242) (ccs time call started)

Note: See EDR header fields (on page 20) for a list of fields common to every EDR.

Optional EDR 27 fields

This list identifies the optional EDR record fields for a successful OSA direct named events (EDR type 27):

- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **REMAINING_CHARGE** (on page 237) (partial Charge)

Account Activated additional fields

If the account is activated, the following fields will be present:

- **NEW_ACCT_STATE** (on page 222) (always active - A)
- **OLD_ACCT_STATE** (on page 227) (pre-call)

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Example EDR 27

```
BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=19|CDR_TYPE=27|RECORD_DATE=20040803145823|ACCT_ID=61|ACCT_REF_ID=61|
APPLICATION_DESC=OSA Direct Named Events|ACS_CUST_ID=1|CS=S|TCS=20040706104957|BALANCE_TYPES=1|
BALANCES=1000|COSTS=90|ACCOUNT_TYPE=4|EVENT_CLASS=OSA|EVENT_NAME=OSA_Direct_10|EVENT_COST=10|
EVENT_COUNT=9|EVENT_TIME_COST=0:00|DISCOUNT=0|CASCADE=0|OLD_BALANCE_EXPIRIES=0|NEW_BALANCE_EXPIRIES=0
```

Note

The sequence of all fields is not guaranteed.
OSA Direct Named Events Fails (EDR 27)

Mandatory EDR 27 fields

This list identifies the mandatory EDR record fields for an unsuccessful OSA direct named events (EDR type 27):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **APPLICATION_DESC** (on page 193) (application freeform)
- **CS** (on page 210) (call status, always D)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_NAME** (on page 216) (list used for this call)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **TCS** (on page 242) (ccs time call started)

Note: See *EDR header fields* (on page 20) for a list of fields common to every EDR.

MSISDN additional fields

If the MSISDN ccsCDRLoader plugin is installed on the USMS, the following fields will be present:

- **MSISDN** (on page 220) (account calling number)

Example EDR 27

BILLING_ENGINE_ID=21|SCP_ID=230612530|SEQUENCE_NUMBER=21|CDR_TYPE=27|RECORD_DATE=20070703121758|ACCT_ID=83|ACCT_REF_ID=83|EVENT_CLASS=OSA|EVENT_NAME=OSA_Direct_10|NACK=INSF|TCS=20070706104957|CS=D|ACCOUNT_TYPE=24|APPLICATION_DESC=OSA Direct Named Events|ACS_CUST_ID=1|OLD_BALANCE_EXPIRIES=0|NEW_BALANCE_EXPIRIES=0

Note

The sequence of all fields is not guaranteed.
Chapter 25

Wallet Credit Transfer

Overview

Introduction
This chapter defines CCS EDRs for inter and intra wallet credit transfers.

In this chapter
This chapter contains the following topics.

Wallet Credit Transfer Succeeds or Fails (EDR 47) ......................................... 182
Cost of Credit Transfer Succeeds (EDR 5) ............................................................. 183
Cost of Credit Transfer Fails (EDR 5) ................................................................. 184
## Wallet Credit Transfer Succeeds or Fails (EDR 47)

<table>
<thead>
<tr>
<th>Mandatory EDR 47 fields</th>
<th>This list identifies the mandatory EDR record fields, regardless of whether it succeeds or fails, an inter or intra wallet credit transfer generates this EDR (EDR type 47):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• CT_NAME (on page 211) (credit transfer)</td>
</tr>
<tr>
<td></td>
<td>• CT_TYPE (on page 211) (credit transfer)</td>
</tr>
<tr>
<td></td>
<td>• MSISDN (on page 220) (account calling number)</td>
</tr>
<tr>
<td></td>
<td>• PURCHASING_ACCT_ID (on page 231) (purchasing wallet ID)</td>
</tr>
<tr>
<td></td>
<td>• PURCHASING_MSISDN (on page 231) (purchasing CLI)</td>
</tr>
<tr>
<td></td>
<td>• USER (on page 243) (operator logon name)</td>
</tr>
<tr>
<td></td>
<td>• VOUCHER_TYPE (on page 244) (name)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional EDR 47 fields</th>
<th>This list identifies the optional EDR record fields for this EDR (EDR type 47):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• HOST (on page 216) (initiating credit transfer)</td>
</tr>
</tbody>
</table>
Cost of Credit Transfer Succeeds (EDR 5)

This list identifies the mandatory EDR record fields for a successful Wallet Credit transfer with an associated cost (EDR type 5):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACS_CUST_ID** (on page 192) (ACS Customer ID)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **CASCADE_ID** (on page 200) (balance type cascade IDs)
- **COSTS** (on page 209) (rated calls)
- **CS** (on page 211) (call status, always S)
- **DISCOUNTS** (on page 213) (for each named event)
- **EVENT_CLASS** (on page 215) (list of classes used)
- **EVENT_COST** (on page 215) (for each named event)
- **EVENT_COUNT** (on page 215) (for each named event)
- **EVENT_NAME** (on page 216) (list used for this call)
- **EVENT_TIME_COST** (on page 216) (for a named event)
- **MSISDN** (on page 220) (account calling number)
- **RECIPIENT_ACCT_ID** (on page 234) (receiving wallet ID)
- **RECIPIENT_MSISDN** (on page 234) (receiving CLI)
- **TCS** (on page 242) (ccs time call started)
- **VOUCHER_TYPE** (on page 244) (name)
- **WALLET_TYPE** (on page 245) (ID of wallet recharged)

This list identifies the optional EDR record fields for a successful Wallet Credit transfer with an associated cost (EDR type 5):

- **OVERDRAWN_AMOUNT** (on page 230) (take Balance Negative)
- **REMAINING_CHARGE** (on page 237) (partial Charge)

Example EDR 5

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=488298|CDR_TYPE=5|RECORD_DATE=20070719113914|ACCT_ID=61|ACCT_REF_ID=61|ACS_CUST_ID=1|WALLET_TYPE=1|MSISDN=11012|RECIPIENT_MSISDN=11012|RECIPIENT_ACCT_ID=1021|VOUCHER_TYPE=ATM Reload|CS=S|TCS=20070723040732|BALANCE_TYPES=1|BALANCES=102970|COSTS=100|ACCOUNT_TYPE=24|EVENT_CLASS=Oracle Events|EVENT_NAME=Cash- |EVENT_COST=100|EVENT_TIME_COST=0.00|EVENT_COUNT=1|DISCOUNT=0|CASCADE=1
```
### Cost of Credit Transfer Fails (EDR 5)

<table>
<thead>
<tr>
<th>Mandatory EDR 5 fields</th>
<th>This list identifies the mandatory EDR record fields for a failed Wallet Credit transfer with an associated cost (EDR type 5):</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCOUNT_TYPE</td>
<td>(Product Type ID)</td>
</tr>
<tr>
<td>ACS_CUST_ID</td>
<td>(ACS Customer ID)</td>
</tr>
<tr>
<td>CS</td>
<td>(call status, always D)</td>
</tr>
<tr>
<td>EVENT_CLASS</td>
<td>(list of classes used)</td>
</tr>
<tr>
<td>EVENT_NAME</td>
<td>(list used for this call)</td>
</tr>
<tr>
<td>NACK</td>
<td>(long list of codes)</td>
</tr>
<tr>
<td>TCS</td>
<td>(ccs time call started)</td>
</tr>
<tr>
<td>WALLET_TYPE</td>
<td>(ID of wallet recharged)</td>
</tr>
</tbody>
</table>
Chapter 26

Wallet Migration

Overview

<table>
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<tr>
<th>Introduction</th>
<th>This chapter defines CCS EDRs for wallet migration.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>This chapter contains the following topics.</td>
</tr>
<tr>
<td>Wallet Migration (EDR 54)</td>
<td>.............................................................................. 186</td>
</tr>
</tbody>
</table>
# Wallet Migration (EDR 54)

## Mandatory EDR 54 fields

This list identifies the mandatory EDR record fields for wallet migration (EDR type 54):

- **ACCOUNT_TYPE** (on page 192) (Product Type ID)
- **ACTIVATION_DATE** (on page 193) (account activation date)
- **BALANCE_TYPES** (on page 196) (existing account)
- **BALANCES** (on page 198) (pre-transaction account balances)
- **COSTS** (on page 209) (rated calls)
- **DOMAIN_MIGRATION** (on page 214) (wallet migration)
- **MAX_CONCURRENT** (on page 219) (maximum concurrent accesses allowed)
- **MSISDN** (on page 220) (account calling number)

When the cosCDRLoader plugin is installed on the USMS, this tag will be present.

- **NEW_ACCT_EXPIRY** (on page 222) (date after update)
- **NEW_BALANCE_EXPIRIES** (on page 224) (date after balance update)
- **OLD_ACCT_EXPIRY** (on page 226) (dates before update)
- **OLD_ACCT_STATE** (on page 227) (before update)
- **OLD_BALANCE_EXPIRIES** (on page 228) (dates before balance update)
- **TERMINAL** (on page 242) (Network ID)
- **USER** (on page 243) (operator logon name)
- **WALLET_DELETED** (on page 244) (always success - Y)

## Example EDR 54

```
BILLING_ENGINE_ID=21|SCP_ID=175677458|SEQUENCE_NUMBER=139450184|CDR_TYPE=54|RECORD_DATE=20090316112330|ACCT_ID=189234|ACCT_REF_ID=20056|USER=SU|TERMINAL=192.168.25.108|DOMAIN_MIGRATION=Y|BALANCE_TYPES=1,2,3,4,5|BALANCES=10000,0,0,0,0|COSTS=10000,0,0,0,0|WALLET_DELETED=Y|ACTIVATION_DATE=20070303122900|NEW_ACCT_EXPIRY=0|MAX_CONCURRENT=1|OLD_ACCT_STATE=P|ACCOUNT_TYPE=3|NEW_BALANCE_EXPIRIES=0|OLD_BALANCE_EXPIRIES=20040811100354|OLD_ACCT_EXPIRY=20040811100357|MSISDN=139411111
```

## Note

The sequence of all fields is not guaranteed.
## Overview

<table>
<thead>
<tr>
<th>Introduction</th>
<th>This chapter defines the CCS EDR for wallet life cycle.</th>
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<td>In this chapter</td>
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<tr>
<td></td>
<td>Wallet Life Cycle (EDR 55).................................................................188</td>
</tr>
</tbody>
</table>
### Wallet Life Cycle (EDR 55)

#### Mandatory EDR 55 fields

This list identifies the mandatory EDR record fields for wallet life cycle updates (EDR type 55):

- `ACCOUNT_TYPE` (on page 192) (Product Type ID)
- `CLI` (on page 207) (for the account that will be changed)
- `CS` (on page 211) (call status, always S)
- `OLD_WLC_PERIOD` (on page 229) (before update)
- `NEW_WLC_PERIOD` (on page 225) (after update)
- `WALLET_TYPE` (on page 244) (ID of wallet changed)

#### Optional EDR 55 fields

This list identifies the optional EDR record fields for this EDR (EDR type 55):

- `NEW_WLC_PLAN` (on page 226) (Id)
- `OLD_WLC_PLAN` (on page 229) (Id)

#### Note

The sequence of all fields is not guaranteed.
Billing Engine Control Plan Invocation

Overview

<table>
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<tr>
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<th>This chapter defines CCS EDRs for billing engine control plan invocation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this chapter</td>
<td>This chapter contains the following topics.</td>
</tr>
<tr>
<td></td>
<td>Control Plan Service Invoke (EDR 7)..............................................190</td>
</tr>
</tbody>
</table>


Control Plan Service Invoke (EDR 7)

Mandatory EDR 7 fields

This list identifies the mandatory EDR record fields for control plan service invoke (EDR type 7):

- CLI (on page 207) (initiating call number)
- Called Number (on page 199)
- Control Plan (on page 208) (name of invoked control plan)
- Service Handle (on page 241) (invoked service handle)
- Service Response (on page 241) (from service function)

Note

The sequence of all fields is not guaranteed.
CCS EDR Tag Definitions

Overview

Introduction
This chapter lists the Event Data Record (EDR) file tag definitions created by CCS processes.

In this chapter
This chapter contains the following topics.

CCS EDR Tag List ...................................................................................... 192
### CCS EDR Tag List

The following list details the tag values of EDRs created by the CCS service, the type and length of data required, and a description of the value.

<table>
<thead>
<tr>
<th>EDR tags</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Notes</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCOUNT_TYPE (Product Type ID)</td>
<td>The ID of the Account Type (Product Type) for this account.</td>
<td>Integer</td>
<td>CCS 2.3.3</td>
<td>This will be set to 0 (zero) for balance expiries.</td>
<td>ACCOUNT_TYPE=1</td>
</tr>
<tr>
<td>ACCT_ID (changed wallet ID)</td>
<td>The ID of the account's wallet that changed during the call's processing. An account may have multiple wallets 'Personal' and 'Business' so it is necessary to identify which wallet changed.</td>
<td>Integer</td>
<td>CCS 2.3.3 to current</td>
<td>This is an internal wallet reference only (ccs_acct.BE_ACCT_ID or be_wallet.ID).</td>
<td>ACCT_ID=1021</td>
</tr>
</tbody>
</table>
| ACCT_REF_ID (changed account ID) | The ID of the account that changed during the call's processing.                | Integer   | CCS 2.3.3 to current  | - This is an internal account reference only (ccs_acct_reference.ID)  
- If this field for an expiry EDR is set to zero (0), this indicates that the change was not limited to a single account but was applied to the wallet or balance of all the referenced accounts. | ACCT_REF_ID=0                   |
| ACS_CUST_ID (ACS Customer ID) | The ID of the ACS Customer for this account.                                        | Integer   | CCS 2.3.3             | This is an internal ACS customer reference only (acs_customer.ID).                                                                                                                                   | ACS_CUST_ID=1                   |

Continued on next page
EDR tags (continued)

ACTIVATION_DATE (account activation date)
Description: The activation date for the account.
Format: Date (yyyymmddhhmmss format)
Version: CCS 2.3.3
Notes: '0' indicates that the activation date for the account is not set.
Example: ACTIVATION_DATE=20040703122900

ADJUSTMENT (generated by an adjustment)
Description: Was this EDR generated by an Adjustment.
Format: Boolean
Version: CCS 3.1.4

APPLICATION_DESC (application freeform)
Description: A freeform reference string entered by the application that made the reservation.
Format: String
Version: CCS 2.3.3
Example: APPLICATION_DESC=OSA Reservation Amount

BAD_PINS (number of attempts)
Description: The pre-transaction bad PIN attempts for this account.
Format: Integer
Version: CCS 3.1.0
Example: BAD_PINS=1

BALANCE_EXPIRIES (period hours)
Description: The balance expiry period in hours.
Format: Integer
Version: CCS 2.5.0
Example: BALANCE_EXPIRIES=100

Continued on next page
**CCS EDR Tag List, Continued**

<table>
<thead>
<tr>
<th>EDR tags (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BALANCE_TYPES</strong> (account changed or created)</td>
</tr>
<tr>
<td><strong>Description:</strong> A list of the Balance Types that changed or were created during the call.</td>
</tr>
<tr>
<td>An account may have balance type ids that correspond to the following Balance Type Names:</td>
</tr>
<tr>
<td>• General Cash</td>
</tr>
<tr>
<td>• Promotional Cash</td>
</tr>
<tr>
<td>• Free SMS</td>
</tr>
<tr>
<td>For multi tariff rated calls, this is a comma separated list of the service id and the Balance Type that was changed by that service id.</td>
</tr>
<tr>
<td><strong>Format:</strong> Integer(s)</td>
</tr>
<tr>
<td><strong>Version:</strong> CCS 3.0.0</td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
</tr>
<tr>
<td>• This is an internal reference to the balance type ids only (ccs_balance_type.ID).</td>
</tr>
<tr>
<td>• The service ID and Balance type are colon separated.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
</tr>
<tr>
<td>Single tariff:</td>
</tr>
<tr>
<td>BALANCE_TYPES=1,2,5</td>
</tr>
<tr>
<td>Multi tariff:</td>
</tr>
<tr>
<td>BALANCE_TYPES=service ID1:1,service ID2:49</td>
</tr>
</tbody>
</table>

*Continued on next page*
CCS EDR Tag List, Continued

**EDR tags** (continued)

**BALANCE_TYPES** (account changed or created) - mid call rate change

**Description:**
A list of the Balance Types that changed or were created during the call.

An account may have balance type ids that correspond to the following Balance Type Names:
- General Cash
- Promotional Cash
- Free SMS

For multi tariff rated calls, this is a comma separated list of the service id and the Balance Type that was changed by that service id.

For single tariff calls with mid call rate changes, this is a semi colon separated list of the Tariff Plan ID, Time Stamp and Balance Type for each rate change. The Tariff Plan ID, Time Stamp and Balance Type are colon separated.

For multi tariff calls with mid call rate changes, then the Service ID:Balance Type combinations are included in the list as well.

**Format:**
Integer(s)

**Version:**
CCS 3.1.4

**Notes:**
- This is an internal reference to the balance type ids only (ccs_balance_type.ID).
- The service ID and Balance type are colon separated.

**Example:**
Single tariff:
BALANCE_TYPES=1,2,5

Multi tariff:
BALANCE_TYPES=service ID1:1,service ID2:49

Single tariff mid call rate change:
BALANCE_TYPES=Tariff Plan ID1:Time Stamp:64;Tariff Plan ID2:Time Stamp:64

Multi tariff mid call rate change:

Continued on next page
**CCS EDR Tag List, Continued**

**EDR tags (continued)**

**BALANCE_TYPES (existing account)**

**Description:** A list of the Balance Types that currently exist for this account. An account may have Balance Types IDs that correspond to the following Balance Type Names:
- General Cash
- Promotional Cash
- Free SMS

**Format:** List of integer numbers

**Version:** CCS 3.0.0

**Notes:** This is an internal reference to the balance type IDs only (ccs_balance_type.ID).

**Example:** BALANCE_TYPES=1

**BALANCES (pre-call or account creation)**

**Description:** A list of the pre-call account balance values for each account. For multi tariff rated calls, this is a comma separated list of the service ID (as listed in BALANCE_TYPES) and the balance that was changed by that service ID. The service ID and Balance are colon separated.

**Format:** Integer or Float

**Version:** CCS 3.0.0

**Notes:** Float type if time balances (two decimal places), Integer type if currency balances.

**Example:** Single tariff:

BALANCES=0,0,0

Multi tariff:

BALANCES=service ID1:1000,service ID2:10000

*Continued on next page*
EDR tags (continued)

BALANCES (pre-call or account creation) - mid call rate change

Description: A list of the pre-call account balance values for each account.

For multi tariff rated calls, this is a comma separated list of the service ID (as listed in BALANCE_TYPES) and the balance that was changed by that service ID. The service ID and Balance are colon separated.

For calls with mid call rate changes, this is a semi colon separated list of the Tariff Plan ID, Time Stamp and Balance that was changed. The Tariff Plan ID, Time Stamp and Balance are colon separated.

For multi tariff rated calls with mid call rate changes, then the Service ID:Balance combinations are included in the list as well.

Format: Integer or Float

Version: CCS 3.1.4

Notes: Float type if time balances (two decimal places), Integer type if currency balances.

Example: Single tariff:

BALANCES=0,0,0

Multi tariff:

BALANCES=service ID1:1000,service ID2:10000

Single tariff mid call rate change:

BALANCES=Tariff Plan ID1:Time Stamp:1000;Tariff Plan ID2:Time Stamp:1000

Multi tariff mid call rate change:

CCS EDR Tag List, Continued

EDR tags (continued)

<table>
<thead>
<tr>
<th>Tag Name</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Notes</th>
<th>Example</th>
</tr>
</thead>
</table>
| BALANCES                 | A list of the pre-transaction account balance values for each balance type ID. For multi tariff rated calls, this is a comma separated list of the service ID (as listed in BALANCE_TYPES) and the balance that was changed by that service ID. | Integer or Float | CCS 3.0.0         | • The service ID and Balance are colon separated.                                                | Single tariff: BALANCES=2000,0  
                               |                               |              |                                               | • Float type if time balances (two decimal places), Integer type if currency balances.         | Multi tariff: BALANCES=service ID1:1000,service ID2:10000 |
| BARRED_LIST_TYPE         | The list type description.                                                   | String       | CCS 3.0.0         | Either:                                                                                         | BARRED_LIST_TYPE=ALLOWED  |
|                          |                               |              |                                               | • Allowed, or                                                                                   |                          |
|                          |                               |              |                                               | • Barred.                                                                                        |                          |
| BATCH_DESCRIPTION        | The textual description for the voucher batch.                              | String       | CCS 3.0.0         | BATCH_DESCRIPTION=Test Batch                                                                    |                          |
| BILLINGENGINE_ID         | The ID of the Billing Engine where this account resides.                    | Integer      | CCS 2.3.3 to current | This is an internal reference only (ccs_acct.BE_ACCT_ENGINE_ID).                              | BILLINGENGINE_ID=21      |

Continued on next page
EDR tags (continued)

BONUS_TYPE (name)
Description: The name of the bonus type applying to this recharge.
Format: String
Version: CCS 3.0.0
Notes: Either:
   • CREDIT CARD, or
   • CUSTOM.

Warning: This value must be in upper case format for bonus to be applied.
Example: BONUS_TYPE=CUSTOM

BUCKET_IDS (within balance type recharged)
Description: A list of the bucket IDs within the balance type that were credited or debited during this recharge.
Format: Integer
Version: CCS 3.0.0
Notes: This is an internal bucket reference only (be_bucket.ID).
Example: BUCKET_IDS=45844

CALLED_NUMBER
Description: The number being called.
Format: String
Version: CCS 3.1.7
Example: CALLED_NUMBER=01473516345

CASCADE (always empty for pi)
Description: This PI command will always produce an empty value for this field.
Format: Integer
Version: CCS 3.0.0
Example: CASCADE=

Continued on next page
### CASCADE_ID (balance type cascade IDs)

**Description:** This is the ID of the Balance Type Cascade that was used for this call.

An account will have a Balance Type Cascade that lists the order in which the account's Balance Types will be debited or credited for each call.

For multi tariff rated calls, this is a comma separated list of the service ID and cascade IDs for each of the tariffs in the rate. The service ID and cascade ID are colon separated.

**Format:** Integer(s)

**Version:** CCS 3.1.0

**Notes:** This is an internal reference to the balance cascade ID only (ccs_balance_type_cascade.ID).

**Example:**

- **Single tariff:**
  
  CASCADE_ID=44

- **Multi tariff:**
  
  CASCADE_ID=service ID1:1,service ID2:49

*Continued on next page*
CCS EDR Tag List, Continued

EDR tags (continued)

CASCADE_ID (balance type cascade IDs) - mid call rate change

Description: This is the ID of the Balance Type Cascade that was used for this call.

An account will have a Balance Type Cascade that lists the order in which the account's Balance Types will be debited or credited for each call.

For multi tariff rated calls, this is a comma separated list of the service ID and cascade IDs for each of the tariffs in the rate. The service ID and cascade ID are colon separated.

For calls with mid call rate changes, this is a semi colon separated list of the Tariff Plan ID, Time Stamp and Cascade IDs for each rate. The Tariff Plan ID, Time Stamp and Cascade IDs are colon separated.

For multi tariff calls with mid call rate changes, then the Service ID is included in the list as well.

Format: Integer(s)

Version: CCS 3.1.4

Notes: This is an internal reference to the balance cascade ID only (ccs_balance_type_cascade.ID).

Example: Single tariff:
CASCADE_ID=44

Multi tariff:
CASCADE_ID=service ID1:1,service ID2:49

Single tariff mid call rate change:
CASCADE_ID=Tariff Plan ID1:Time Stamp:1;Tariff Plan ID2:Time Stamp:1

Multi tariff mid call rate change:

CBTD_BALANCE_TYPES (list to apply to discounts)

Description: A list of the Cross Balance Types used during the call to apply the cross balance type discounts.

Format: Integer(s)

Version: CCS 3.1.1

Example: CBTD_BALANCE_TYPES=174

Continued on next page
EDR tags (continued)

CBTD_BALANCE_TYPES (list to apply to discounts) - mid call rate change
Description: A list of the Cross Balance Types used during the call to apply the cross balance type discounts. For calls with mid call rate changes the Tariff Plan ID and Time Stamp for each rate change will also be listed. Items in the list are colon separated.
Format: Integer(s)
Version: CCS 3.1.4
Example: Single rate:
CBTD_BALANCE_TYPES=174
Mid call rate change:
CBTD_BALANCE_TYPES=Tariff Plan ID1:Time Stamp:2,4;Tariff Plan ID2:Time Stamp:2,4

CBTD_BALANCES (value for each cross balance type)
Description: A list of the balance values for each Cross Balance Type displayed in the CBTD_BALANCE_TYPE field of the EDR record.
Format: Integer(s) or Float
Version: CCS 3.1.1
Notes: Float type if time balances (two decimal places), Integer type if currency balances.
Example: CBTD_BALANCES=440.00

Continued on next page
CBTD_BALANCES (value for each cross balance type) - mid
call rate change

Description: A list of the balance values for each Cross Balance Type
displayed in the CBTD_BALANCE_TYPE field of the EDR
record.

For calls with mid call rate changes, this is a semi colon
separated list of the Tariff Plan ID, Time Stamp and Balance
that was changed. The Tariff Plan ID, Time Stamp and
Balance are colon separated.

Format: Integer(s) or Float
Version: CCS 3.1.4
Notes: Float type if time balances (two decimal places), Integer type
if currency balances.

Example: Single tariff:
CBTD_BALANCES=440.00
Mid call rate change:
CBTD_BALANCES=Tariff Plan ID1:Time
Stamp:1000;Tariff Plan ID2:Time Stamp:1000

CBTD.Cascade_ID (used for this call)

Description: This lists the order in which the account's Cross Balance
Types will be debited during calls. It is only present where a
cross balance type discount has been applied.

Format: Integer
Version: CCS 3.1.1
Notes: This is an internal reference to the cross balance cascade ID
only.
CBTD_CASCADE_ID (used for this call) - mid call rate change

**Description:**
This lists the order in which the account's Cross Balance Types will be debited during calls. It is only present where a cross balance type discount has been applied.

For calls with mid call rate changes, this is a semi colon separated list of the Tariff Plan ID, Time Stamp and Cascade IDs for each rate. The Tariff Plan ID, Time Stamp and Cascade IDs are colon separated.

**Format:**
Integer

**Version:**
CCS 3.1.4

**Notes:**
This is an internal reference to the cross balance cascade ID only.

**Example:**
Single tariff:
CASCADE_ID=44,33

Mid call rate change:
CASCADE_ID=Tariff Plan ID1:Time Stamp:1;Tariff Plan ID2:Time Stamp:1

CBTD_COSTS (costs applied to each cross balance type)

**Description:**
Lists the costs applied to each Cross Balance Type ID displayed in the CBTD_BALANCE_TYPE field of the EDR record.

**Format:**
Integer(s) or Float

**Version:**
CCS 3.1.1

**Notes:**
Float type if time balances (two decimal places), Integer type if currency balances.

**Example:**
CBTD_COSTS=440.00
**CBTD_COSTS (costs applied to each cross balance type) - mid call rate change**

**Description:** Lists the costs applied to each Cross Balance Type ID displayed in the CBTD_BALANCE_TYPE field of the EDR record.

For calls with mid call rate change the Tariff Plan ID and Time stamp for each rate change are also included. Items in the list are colon separated.

**Format:** Integer(s) or Float

**Version:** CCS 3.1.4

**Notes:** Float type if time balances (two decimal places), Integer type if currency balances.

**Example:**
- Single call rate time balance:
  CBTD_COSTS=440.00
- Mid call rate change currency balance:
  CBTD_COSTS=T tariff Plan ID1:Time Stamp:30,5,0; Tariff Plan ID2:Time Stamp:30,5,0

**CBTD_DISCOUNTS (discounts applied to balance types)**

**Description:** Lists the cross balance type discounts (in 1/10000's of a percent) applied during this call to the chargeable balance types.

**Format:** Integer(s)

**Version:** CCS 3.1.1

**Example:**
CBTD_DISCOUNTS=200000
CCS EDR Tag List, Continued

EDR tags (continued)

CBTD_DISCOUNTS (discounts applied to balance types) - mid call rate change

Description: Lists the cross balance type discounts (in 1/10000's of a percent) applied during this call to the chargeable balance types.
For calls with mid call rate changes the Tariff Plan ID and Time stamp for each rate change are also included. Items in the list are colon separated.

Format: Integer(s)
Version: CCS 3.1.4
Example: Single call rate:
CBTD_DISCOUNTS=200000
Mid call rate change:
CBTD_DISCOUNTS=T tariff Plan ID1:Time Stamp:200000,100000;Tariff Plan ID2:Time Stamp:200000,100000

CDR_TYPE (reason for record generation)

Description: The reason that the EDR record was generated. This will be the result of either a CCS or other service. The extra information fields, which are present in the resulting EDR record, are dependent on the EDR type.

Format: String
Version: CCS 2.3.3 to current
Example: CDR_TYPE=2

CHARGE_EXPIRY (new periodic charge expiry)

Description: The new date the periodic charge will expire.

Format: Date
Version: CCS 3.1.5
Example: CHARGE_EXPIRY=

CHARGE_NAME (of periodic charge)

Description: The name of the periodic charge applied.

Format: String
Version: CCS 3.0.0

Continued on next page
### CLI (initiating call number)

**Description:** The Calling Line Identifier (Calling Number) that initiated the call.

**Format:** String

**Version:** CCS 2.5.0

**Notes:** This is the party making the call, and is the value stored in `cs_acct_reference.CLI` unless the Location Area Code is used to initiate the call. In this case, the CLI is made up from the Mobile Country Code, Mobile Network Code, Location Area Code, and Cell ID.

**Example:** CLI=01206233252

### CLI (initiating call number) - mid call rate change

**Description:** The Calling Line Identifier (Calling Number) that initiated the call.

For calls with mid call rate changes, this is a semi colon separated list of the Tariff Plan ID, Time Stamp and CLI for each rate. The Tariff Plan ID, Time Stamp and CLI are colon separated.

**Format:** String

**Version:** CCS 3.1.4

**Notes:** This is the party making the call, and is the value stored in `cs_acct_reference.CLI` unless the Location Area Code is used to initiate the call. In this case, the CLI is made up from the Mobile Country Code, Mobile Network Code, Location Area Code, and Cell ID.

**Example:**
- Single call rate: CLI=01206233252

### CLI (for the account that will be changed)

**Description:** The Calling Line Identifier for the account which will be changed.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** From `ccs_acct_reference.CLI`

**Example:** CLI=1234
**CLI (roaming initiating call number)**

**Description:** The Calling Line Identifier (Calling Number) that initiated the call. This is the party making the call, and is the value stored in `ccs_acct_reference.CLI` unless the Location Area Code is used to initiate the call. In this case the CLI is made up from the Mobile Country Code, Mobile Network Code, Location Area Code, and Call ID.

**Format:** String

**Version:** CCS 2.5.0

**Notes:**
- The Roaming software provides a `ccsCDRLoaderPlugin` on the SMP. This plug-in will determine the type of roaming call.
- If a CAMEL Originating call is determined, then the roaming prefix will be stripped from the CLI field.

**Example:** CLI=321206233252

**COMPONENT (from pi command reference)**

**Description:** A freeform reference string taken from the PI COMMAND REFERENCE field.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** This is the reference entered by the operator that performed the recharge.

**CONTROL_PLAN (name of invoked control plan)**

**Description:** The name of the invoked control plan

**Format:** String

**Version:** CCS 3.1.7

**Example:** CONTROL_PLAN=SrmPlan

*Continued on next page*
EDR tags (continued)

COSTS (rated calls)

Description: A list of the costs debited or credited from each service ID displayed in the BALANCE_TYPES field of the EDR record. For a 'Debit' account, a credit to the account will be indicated by a negative value.

For multi tariff rated calls, the costs will also be broken down by the service ID used to identify each tariff. All balance types used will be listed against each service id even if there was no charge.

Format: Integer or Float

Version: CCS 3.0.0

Notes: Float type if time balances (two decimal places), Integer type if currency balances.

Example: Single tariff:
COSTS=120

Multi tariff:
COSTS=service ID1:5,5,service ID2:10,0

Continued on next page
**COSTS (rated calls) - mid call rate change**

**Description:** A list of the costs debited or credited from each service ID displayed in the BALANCE_TYPES field of the EDR record. For a 'Debit' account, a credit to the account will be indicated by a negative value.

For multi tariff rated calls, the costs will also be broken down by the service ID used to identify each tariff. All balance types used will be listed against each service ID even if there was no charge.

For calls with mid call rate changes, the costs will be broken down by Tariff Plan ID and Time Stamp for each rate change. The Tariff Plan ID, Time Stamp and Costs are colon separated.

For multi tariff rated calls with mid call rate changes, then the Service ID is included as well.

**Format:** Integer or Float

**Version:** CCS 3.1.4

**Notes:** Float type if time balances (two decimal places), Integer type if currency balances.

**Example:**

- Single tariff:
  
  COSTS=120

- Multi tariff:
  
  COSTS=service ID1:5,5,service ID2:10,0

- Single tariff mid call rate change:
  
  COSTS=Tariff Plan ID1:Time Stamp:10;Tariff Plan ID2:Time Stamp:20

- Multi tariff mid call rate change:
  

**CS (call status, always D)**

**Description:** The call status.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** This value will always be 'D' (Declined) for this EDR record.

**Example:** CS=D
CS (call status, always S)
Description: The call status.
Format: String
Version: CCS 3.0.0
Notes: This value will always be 'S' (Success) for this EDR record.
Example: CS=S

CT_NAME (credit transfer)
Description: Credit transfer name.
Format: String
Version: CCS 3.0.1
Notes: From CCS_CREDIT_TRANSFER.name.

CT_TYPE (credit transfer)
Description: Credit transfer type.
Format: String
Version: CCS 3.0.1
Notes: From CCS_CREDIT_TRANSFER.type.

CUG_NAME (closed user group)
Description: The name of the Closed User Group (CUG) for the current call.
Format: String
Version: CCS 3.0.0

DICWR (Disable Incoming Calls When Roaming)
Description: A Flag indicating whether the 'Disable Incoming Calls When Roaming' flag has been enabled or disabled.
Format: String
Version: 
Notes: Valid values are:
• TRUE or
• FALSE.
Example: DICWR=TRUE

DISCOUNT (always zero for pi)
Description: This PI command will always produce a value of zero for this field.
Format: Integer
Version: CCS 3.0.0
Example: DISCOUNT=0

Continued on next page
DISCOUNT_TYPE (applied to this call)
Description: The discount type applied to this call.
Format: String
Version: CCS 3.0.0
Notes: Valid values are:
• 'BASIC'
• 'COMPOUND'
• 'CUMULATIVE', or
• 'OVERRIDE'.
Example: DISCOUNT_TYPE=BASIC

DISCOUNT_TYPE (applied to this call)
Description: The discount type applied to this call.
Format: String
Version: CCS 3.1.1
Notes: The value is the uppercase value of the discountRuleType parameter. See CCS Tech Guide - ccsReservationHandler topic.
Example: DISCOUNT_TYPE="S*R*W"

DISCOUNT_TYPE (applied to this call) - service discount
Description: The discount type applied to this call.
Format: String
Version: CCS 3.1.6
Notes: The value is the uppercase value of the discountRuleType parameter. See CCS Tech Guide - ccsReservationHandler topic.
The $ character in the value string will only be included when a Service Discount has been used. As a result, the possible values depend on both the configured discountRuleType parameter and the presence of a Service Discount for this call.
This allows correlation with CCS 3.0.0 values, where the:
• presence of the $ character maps to COMPOUND, CUMULATIVE or OVERRIDE, and
• absence of the $ character maps to BASIC
Example: With Service Discount:
DISCOUNT_TYPE=S*R*W
Without Service Discount:
DISCOUNT_TYPE=R*W

Continued on next page
CCS EDR Tag List, Continued

EDR tags (continued)

DISCOUNTS (for each named event)

**Description:** A list of discounts (in 1/10000’s of a percent) that correspond to each named event that is specified in the EVENT_NAME field of this EDR record.

**Format:** Integer or Float

**Version:** CCS 3.0.0

**Notes:**
- This field is determined by the tariff associated with this named event and is not fixed for a specific account.
- Float type if time balances (two decimal places), Integer type if currency balances.

**Example:** DISCOUNTS=200000

DISCOUNTS (rated calls)

**Description:** This will be a list of discounts (in 1/10000’s of a percent) that exist for this call.

For multi tariff rated calls this is a comma separated list of the service ID (as listed in the BALANCE_TYPES) used to identify the tariff followed by a colon and the list of associated billing period discounts for each of the tariffs in the rate. The service ID and discount list are colon separated.

**Format:** Integer or Float

**Version:** CCS 3.1.0

**Notes:**
- This field is determined by the tariff associated with this call and is not fixed for a specific account.
- Float type if time balances (two decimal places), Integer type if currency balances.

**Example:**

- Single tariff:
  DISCOUNTS=0

- Multi tariff:
  DISCOUNTS=service ID1:0,0,0,0,service ID2:0,0,0,0

Continued on next page
EDR tags (continued)

DISCOUNTS (rated calls) - mid call rate change

**Description:** This will be a list of discounts (in 1/10000's of a percent) that exist for this call.

For multi tariff rated calls this is a comma separated list of the service ID (as listed in the BALANCE_TYPES) used to identify the tariff followed by a colon and the list of associated billing period discounts for each of the tariffs in the rate. The service ID and discount list are colon separated.

For calls with mid call rate changes, the discounts will be broken down by Tariff Plan ID and the Time Stamp for each rate change. The Tariff Plan ID, Time Stamp and discount list are colon separated.

For multi tariff rated calls with mid call rate changes, then the Service ID is included in the list as well.

**Format:** Integer or Float

**Version:** CCS 3.1.4

**Notes:**
- This field is determined by the tariff associated with this call and is not fixed for a specific account.
- Float type if time balances (two decimal places), Integer type if currency balances.

**Example:**
- Single tariff:
  
  \[
  \text{DISCOUNTS}=0
  \]

- Multi tariff:
  
  \[
  \text{DISCOUNTS}=\text{service ID1:0,0,0,0,0,service ID2:0,0,0,0}
  \]

- Single tariff mid call rate change:
  
  \[
  \text{DISCOUNTS}=\text{Tariff Plan ID1:Time Stamp:0,0,0,0;Tariff Plan ID2:Time Stamp:0,0,0,0}
  \]

- Multi tariff mid call rate change:
  
  \[
  \text{DISCOUNTS}=\text{Tariff Plan ID1:Time Stamp:Service ID1:0,0,0,0:Service ID2:0,0,0,0;Tariff Plan ID2:Time Stamp:Service ID1:0,0,0,0:Service ID2:0,0,0,0}
  \]

**DOMAIN_MIGRATION**

**Description:** Indicates that the wallet was migrated successfully.

**Format:** String

**Version:** CCS 3.1.6

**Notes:** This value will always be "Y" for the EDR record.

**Example:**

\[
\text{DOMAIN_MIGRATION}=Y
\]
EDR tags (continued)

**DURATION (call length)**
- **Description:** The actual call length ignoring any grace period that may result in the call not being charged.
- **Format:** Integer or Float
- **Version:** CCS 3.0.0
- **Notes:**
  - If a CAMEL Phase 2 or Phase 3 type switch is being used, this field will be in Float format to two decimal places (seconds and deci-seconds).
  - If a Nokia type switch is being used the field will be in Integer format (seconds).
- **Example:**
  - Nokia switch is whole seconds
    - \texttt{DURATION}=120.00
  - CAMEL Phase 2 or Phase 3 type switch is decimal seconds
    - \texttt{DURATION}=162.30

**EVENT_CLASS (list of classes used)**
- **Description:** A list of event classes that were used for this call.
- **Format:** String(s)
- **Version:** CCS 2.4.1

**EVENT_COST (for each named event)**
- **Description:** A list of event costs (in small currency) that correspond to each named event that is specified in the EVENT_NAME field of this EDR record.
- **Format:** Integer(s)
- **Version:** CCS 2.4.1
- **Notes:**
  - Each event cost will have an associated event count as specified by the EVENT_COUNT field and an associated discount (in 1/10000's of a percent) as specified by the DISCOUNT field for the EDR record. This field is determined by the tariff associated with this named event and is not fixed for a specific account.
  - This field needs to be associated with the EVENT_COUNT and DISCOUNT fields to determine the cost of the call.

**EVENT_COUNT (for each named event)**
- **Description:** A list of event counts that correspond to each named event that is specified in the EVENT_NAME field of this EDR record.
- **Format:** Integer(s)
- **Version:** CCS 2.4.1

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### CCS EDR Tag List, Continued

**EDR tags (continued)**

<table>
<thead>
<tr>
<th>Tag Name</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EVENT_NAME</strong> (list used for this call)</td>
<td>A list of event names that were used for this call.</td>
<td>String(s)</td>
<td>CCS 2.4.1</td>
<td></td>
</tr>
<tr>
<td><strong>EVENT_TIME_COST</strong> (for a named event)</td>
<td>Shows the time-cost of a named event, which will be debited against a time balance.</td>
<td>Integer</td>
<td>CCS 2.4.1</td>
<td></td>
</tr>
<tr>
<td><strong>EXPIGNED_WALLET</strong> (ID of expired wallet)</td>
<td>If the balance has expired due to a wallet expiry, then this field will contain the ID of the account's wallet if configured to do so.</td>
<td>Integer</td>
<td>CCS 3.0.0</td>
<td></td>
</tr>
<tr>
<td><strong>FCA</strong> (final call address)</td>
<td>The Final Called Address for this call</td>
<td>String</td>
<td>CCS 3.1.0</td>
<td></td>
</tr>
<tr>
<td><strong>HOST</strong> (initiating credit transfer)</td>
<td>Name of the host that initiated the credit transfer.</td>
<td>String</td>
<td>CCS 3.0.1</td>
<td></td>
</tr>
<tr>
<td><strong>IGNORE_BARRED</strong> (ignore numbers in call barring list)</td>
<td>Flag to determine whether or not to ignore the numbers specified in the call barring list.</td>
<td>Integer</td>
<td>CCS 3.0.0</td>
<td></td>
</tr>
</tbody>
</table>

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### CCS EDR Tag List, Continued

**EDR tags (continued)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Notes</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTHS (rate durations)</td>
<td>A list of rate durations (in seconds) that exist for this call. This field is determined by the tariff associated with this call and is not fixed for a specific account.</td>
<td>Float (two decimal places)</td>
<td>CCS 3.1.0</td>
<td>Every duration will have an associated rate (in small currency) as specified by the RATES field for the EDR record.</td>
<td>LENGTHS=2810.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LENGTHS=60.00,60.00,90.00,0.00</td>
</tr>
</tbody>
</table>
| LENGTHS (rate durations) -lend duration | A list of rate durations (in seconds) that exist for this call. This field is determined by the tariff associated with this call and is not fixed for a specific account.  
A LENGTHS tag value of -1 will be used for the final rate duration of the call. This means that this rate duration is undefined and the rate will be used for the remainder of the call.  
If a call uses a rate with a single billing period, then this will be shown in the EDR as LENGTHS=-1. | Float (two decimal places) | CCS 3.1.4 | Every duration will have an associated rate (in small currency) as specified by the RATES field for the EDR record. | LENGTHS=-1               |
|                |                                                                              |                         |         |                                                                                                                                                    | LENGTHS=60.00,60.00,90.00,-1 |
CCS EDR Tag List, Continued

EDR tags (continued)

LENGTHS (rate durations) - mid call rate change
Description: A list of rate durations (in seconds) that exist for this call. This field is determined by the tariff associated with this call and is not fixed for a specific account.

A LENGTHS tag value of -1 will be used for the final rate duration of the call. This means that this rate duration is undefined and the rate will be used for the remainder of the call.

If a call uses a rate with a single billing period, then this will be shown in the EDR as LENGTHS=-1.

For calls with mid call rate changes, the Lengths will be broken down by Tariff Plan ID and Time Stamp for each rate change. The Tariff Plan ID, Time Stamp and Lengths are colon separated.

Format: Float (two decimal places)

Version: CCS 3.1.4

Notes: Every duration will have an associated rate (in small currency) as specified by the RATES field for the EDR record.

Example:

Single call rate:
LENGTHS=-1

Mid call rate change:
LENGTHS=Trff Plan ID1:<TimeStamp>:120,-1;Trff Plan ID2:<TimeStamp>:120,-1

LOCADD (additional configuration prefixes)
Description: The CLI field with additional configuration prefixes added.

Format: String

Version: CCS 3.0.0

Example:
LOCADD=E771231473289900

MAX_CHARGE (for this call)

Description: The maximum charge for this call.

Format: Integer

Version: CCS 3.0.0

Notes: This value will be taken from either the maximum charge for the tariff associated with this call or if a discount (holiday or weekly) is applied, then the maximum charge for the associated discount.

Example: MAX_CHARGE=500

Continued on next page
EDR tags (continued)

MAX_CHARGE (for this call) - mid call rate change

Description: The maximum charge for this call. For calls with mid call rate changes, the maximum charge will also be broken down by Tariff Plan ID and Time Stamp for the start of each rate change. The Tariff Plan ID, Time Stamp and maximum charge are colon separated.

Format: Integer
Version: CCS 3.1.4
Notes: This value will be taken from either the maximum charge for the tariff associated with this call or if a discount (holiday or weekly) is applied, then the maximum charge for the associated discount.

Example: Single call rate:
MAX_CHARGE=500

Mid call rate change:
MAX_CHARGE=Tariff Plan ID1:Time Stamp:100;Tariff Plan ID2:Time Stamp:100

MAX_CONCURRENT (maximum concurrent accesses allowed)

Description: The number of maximum concurrent accesses allowed for this account.

Format: Integer
Version: CCS 3.0.0
Example: MAX_CONCURRENT=1

MFILE (name)

Description: The date/time stamp mfile file name that the rating information for the call is within.

Format: String
Version: 
Example: MFILE=20100602203530

MID_SESSION

Description: This tag is added to indicate a partial, mid call produced EDR.

Format: String
Version: CCS 3.1.7.2
Notes: Only ever added when true, for false (or the final complete EDR) the tag is omitted.

Partial EDRs may be created when the Commit Volume Threshold (Rating Management > Reservation Config > Add/Edit Reservation Config panel) is enabled.

Example: MID_SESSION=TRUE

Continued on next page
CCS EDR Tag List, Continued

EDR tags (continued)

**MSISDN (account calling number)**

**Description:** The Calling Line Identifier (Calling Number) of the account that changed during the call's processing.

**Format:** String

**Version:** CCS 2.3.3

**Notes:**
- When the ccsCDRLoader plugin is installed on the USMS, this tag will be present.
- Value is taken from ccs_acct_reference.CLI.
- EDR records associated with each wallet expiry contain the MSISDN and product types of all affected subscribers.

**Example 1:** Standard format:
MSISDN=1394111111

**Example 2:** Wallet expiry format:
A user may have a mobile and a data card - each with its own SIM. The mobile and data cards are each represented as subscriber records, but they share a single wallet. If:
- the MSISDN of the mobile card is 01234 and of the data card is 01235, and
- the product types are 1 (mobile card - Prepaid Voice) and 2 (data card - Prepaid Data),
then the expiry EDR would contain the following fields:
MSISDN=01234,01235
Account_Type=1,2

**NACK (freeform recharge list)**

**Description:** The internal failure reason code for the failed call.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** Valid failure codes are:
- **BDVR** bad recharge attempt (duplicate or invalid balance type, no expiration, or cannot recharge terminated wallet)
- **NRCH** balance not chargeable (single use wallet)
- **SNIL** state not in list (when wallet state is invalid)
- **WDIS** wallet's current state is not valid. Wallet will be in one of the following states - 'F' (Frozen), 'T' (Terminated) or 'S' (Suspended)

**Example:** NACK=WDIS

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<table>
<thead>
<tr>
<th>EDR tags (continued)</th>
</tr>
</thead>
</table>

**NACK (long list of codes)**

| Description | The internal failure reason code for the failed call. |
| Format      | String |
| Version     | CCS 3.0.0 |
| Notes       | Valid failure codes are: |
|             | INSF  insufficient funds |
|             | CRIS  calling and/or called number restricted |
|             | NACC  no account type entry defined for this tariff |
|             | NGE0  no geography set defined for this tariff |
|             | NRAT  no rate information defined for this tariff |
|             | NBIL  no billing periods defined for this tariff |
|             | NCAS  no balance type cascade defined for this tariff |
|             | NTAR  no tariff plan selector defined for this tariff |
|             | MAXL  the maximum length defined for this account has been exceeded |
|             | WDIS  wallet's current state is not valid. Wallet will be in one of the following states - 'F' (Frozen), 'T' (Terminated) or 'S' (Suspended) |
|             | TMNY  the maximum number of concurrent accesses allowed defined for this account has been exceeded |

**NACK (short list of codes)**

| Description | The internal failure reason code for the failed call. |
| Format      | String |
| Version     | CCS 3.0.0 |
| Notes       | Valid failure codes are: |
|             | INSF  insufficient funds |
|             | NENA  no row in CCS_ACCT_TYPE_CHARGE for requested ProductType/EventClass/EventName |
|             | NBTY  no balance type |
|             | WDIS  wallet's current state is not valid. Wallet will be in one of the following states - 'F' (Frozen), 'T' (Terminated) or 'S' (Suspended) |
|             | TMNY  the maximum number of concurrent accesses allowed defined for this account has been exceeded |

**Example:**

NACK=INSF

*Continued on next page*
EDR tags (continued)

**NEW_ACCOUNT (ID of account type)**
- **Description:** The id of the Account Type (Product Type) for this account after a product type swap.
- **Format:** Integer
- **Version:** CCS 3.0.0

**NEW_ACCT_EXPIRY (date after account deleted)**
- **Description:** The expiry date for the account after the update.
- **Format:** Date
- **Version:** CCS 3.0.0
- **Notes:** This will always be '0' indicating no expiry.
- **Example:** NEW_ACCT_EXPIRY=0

**NEW_ACCT_EXPIRY (date after update)**
- **Description:** The expiry date for the account after the update.
- **Format:** Date (yyyymmddhhmms format)
- **Version:** CCS 3.0.0
- **Notes:** '0' or blank indicates that the expiry date for the account is not set - it will never expire.
- **Example:** NEW_ACCT_EXPIRY=0

**NEW_ACCT_EXPIRY (date after recharge)**
- **Description:** The current wallet expiry date after a successful voucher recharge.
- **Format:** Date (yyyymmddhhmms format)
- **Version:** CCS 3.0.0
- **Example:** NEW_ACCT_EXPIRY=20071206080259

**NEW_ACCT_STATE (always active - A)**
- **Description:** The account state after the call.
- **Format:** String
- **Version:** CCS 3.0.0
- **Notes:** This value will always be ‘A’ (Active) for this EDR record.
- **Example:** NEW_ACCT_STATE=A

**NEW_ACCT_STATE (always frozen - F)**
- **Description:** The account state after the recharge.
- **Format:** String
- **Version:** CCS 3.0.0
- **Notes:** This value will always be 'F' (Frozen).
- **Example:** NEW_ACCT_STATE=F

---

Continued on next page
NEW_ACCT_STATE (always preuse - P)

Description: The account state when the update has completed.
Format: String
Version: CCS 3.0.0
Notes: This value will always be 'P' (PreUse).
Example: NEW_ACCT_STATE=P

NEW_ACCT_STATE (always terminated - T)

Description: The account state after the recharge.
Format: String
Version: CCS 3.0.0
Notes: This value will always be 'T' (Terminated) for this EDR record.
Example: NEW_ACCT_STATE=T

NEW_ACCT_STATE (after update)

Description: The account state after the update.
Format: String
Version: CCS 3.0.0
Notes: Valid values are:
- 'P' (PreUse)
- 'A' (Active)
- 'D' (Dormant)
- 'F' (Frozen)
- 'S' (Suspended), or
- 'T' (Terminated).
Example: NEW_ACCT_STATE=A

NEW_ACCT_TYPE (ID of account after recharge)

Description: The ID of the Account Type (Product Type) for this account following the recharge.
Format: Integer.
Version: CCS 3.0.0
Notes: This is an internal account type reference only (ccs_acct_type.ID).

Continued on next page
NEW_ACCT_TYPE (prod type swap)
Description: The ID of the Account Type (Product Type) for this account after the product type swap.
Format: Integer
Version: CCS 3.0.0
Notes: This is an internal account type reference only (ccs_acct_type.ID).

NEW_ACTIVE_SVC (account type)
Description: New active account type.
Format: String
Version: CCS 3.0.0
Example: NEW_ACTIVE_SVC=F

NEW_BALANCE_EXPIRE (date after balance update)
Description: A list of the expiry dates for each Balance Type ID displayed in the BALANCE_TYPES field of the EDR record after the update.
Format: List of date(s) (yyyymmddhhmmss format)
Version: CCS 3.0.0
Notes:
• '0' indicates that the expiry date for this balance is not set - it will never expire.
• If the balance has an expiry date set then it will be displayed regardless of whether it is changed during the update.
Example: NEW_BALANCE_EXPIRIES=0

NEW_BALANCE_EXPIRE (dates after voucher recharge)
Description: A list of the expiry dates for each Balance Type ID displayed in the BALANCE_TYPES field of the EDR record after the recharge.
Format: List of date(s) (yyyymmddhhmmss format)
Version: CCS 3.0.0
Notes:
• An empty string indicates that the expiry date for this balance is not set - it will never expire.
• If the balance has an expiry date set then it will be displayed.
Example: NEW_BALANCE_EXPIRIES=0

Continued on next page
CCS EDR Tag List, Continued

EDR tags (continued)

NEW_BARRED_LIST (of call barring numbers)
Description: Comma separated list of call barring numbers following the update.
Format: List
Version: CCS 3.0.0
Example: NEW_BARRED_LIST=03200000001,03200000002,03200000003,03200000004,03200000005

NEW_CHARGE_STATE (periodic charge subscription state)
Description: The state the periodic charge subscription was changed to.
Format: String
Version: CCS 3.1.5
Example: NEW_CHARGE_STATE=SUBSCRIBED

NEW_FD (friends destination number)
Description: New friends destination number.
Format: String
Version: CCS 3.0.0
Example: NEW_FD=22

NEW_FF (list of friends and family numbers)
Description: New list of friends and family numbers.
Format: List
Version: CCS 3.0.0
Example: NEW_FF=488122346,777777776

NEW_LAST_USE (date last used)
Description: The date of last use.
Format: Date (yyyymmddhhmss format)
Version: CCS 3.0.0
Example: NEW_LAST_USE=0

NEW_WLC_PERIOD (after update)
Description: Identifies the new period in the wallet life cycle.
Format: Integer
Version: CCS 3.1.9
Example: NEW_WLC_PERIOD=2

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## CCS EDR Tag List, Continued

### EDR tags (continued)

<table>
<thead>
<tr>
<th>Tag Name</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW_WLC_PLAN (Id)</td>
<td>The internal id of the new wallet life cycle plan.</td>
<td>Integer</td>
<td>CCS 3.1.9</td>
<td>NEW_WLC_PLAN=2</td>
</tr>
<tr>
<td>OGEO_ID (originating geo node id)</td>
<td>The voice call originating geographic node id.</td>
<td>Integer</td>
<td>CCS 3.1.8</td>
<td>OGEO=13</td>
</tr>
<tr>
<td>OLD_ACCOUNT (ID of account type)</td>
<td>The ID of the Account Type (Product Type) for this account prior to a product type swap.</td>
<td>Integer</td>
<td>CCS 3.0.0</td>
<td></td>
</tr>
<tr>
<td>OLD_ACCT_EXPIRY (dates before update)</td>
<td>The expiry date for the account prior to the update.</td>
<td>Date</td>
<td>CCS 3.0.0</td>
<td>OLD_ACCT_EXPIRY=20080901185959</td>
</tr>
<tr>
<td>OLD_ACCT_EXPIRY (date before recharge)</td>
<td>The wallet expiry date before a successful voucher recharge.</td>
<td>Date</td>
<td>CCS 3.0.0</td>
<td>OLD_ACCT_EXPIRY=20070904083550</td>
</tr>
<tr>
<td>OLD_ACCT_STATE (always active - A)</td>
<td>The account state prior to the recharge.</td>
<td>String</td>
<td>CCS 3.0.0</td>
<td>OLD_ACCT_STATE=A</td>
</tr>
</tbody>
</table>

Notes:

- '0' indicates that the expiry date for the account was not set - it would have never expired.
**CCS EDR Tag List, Continued**

### EDR tags (continued)

**OLD_ACCT_STATE (before update)**

*Description:* The account state prior to the update.

*Format:* String

*Version:* CCS 3.0.0

*Notes:* Valid values are:
- ‘P’ (PreUse)
- ‘D’ (Dormant)
- ‘F’ (Frozen)
- ‘S’ (Suspended), or
- ‘T’ (Terminated).

*Example:* OLD_ACCT_STATE=P

**OLD_ACCT_STATE (pre-call)**

*Description:* The account state prior to the call.

*Format:* String

*Version:* CCS 3.0.0

*Notes:* Valid values are:
- P (PreUse) or
- D (Dormant).

*Example:* OLD_ACCT_STATE=D

**OLD_ACCT_STATE (P or D before update)**

*Description:* The account state prior to the update.

*Format:* String

*Version:* CCS 3.0.0

*Notes:* Valid values are:
- ‘P’ (PreUse), or
- ‘D’ (Dormant).

*Example:* OLD_ACCT_STATE=P

**OLD_ACCT_TYPE (ID of account before recharge)**

*Description:* The ID of the Account Type (Product Type) for this account prior to the recharge.

*Format:* Integer.

*Version:* CCS 3.0.0

**OLD_ACCT_TYPE (prod type swap)**

*Description:* The ID of the Account Type (Product Type) for this account prior to the product type swap.

*Format:* Integer.

*Version:* CCS 3.0.0

*Continued on next page*
CCS EDR Tag List, Continued

EDR tags (continued)

OLD_ACTIVE_SVC (account type)
Description: Old active account type.
Format: String
Version: CCS 3.0.0
Example: OLD_ACTIVE_SVC=D

OLD_BALANCE_EXPIRIES (dates before balance update)
Description: A list of the expiry dates for each Balance Type ID displayed in the BALANCE TYPES field of the EDR record prior to the update.
Format: List of date(s) (yyyymmddhhmms format)
Version: CCS 3.0.0
Notes: • An empty string indicates that the expiry date for this balance is not set - it will never expire.

• If the balance has an expiry date set then it will be displayed regardless of whether it is changed during the update.
Example: OLD_BALANCE_EXPIRIES=0

OLD_BALANCE_EXPIRIES (dates before voucher recharge)
Description: A list of the expiry dates for each Balance Type ID displayed in the BALANCE TYPES field of the EDR record prior to the recharge.
Format: List of date(s) (yyyymmddhhmms format)
Version: CCS 3.0.0
Notes: • '0' indicates that the expiry date for this balance is not set - it will never expire.

• If the balance has an expiry date set then it will be displayed.
Example: OLD_BALANCE_EXPIRIES=0

OLD_BARRED_LIST (of call barring numbers)
Description: The list of call barring numbers prior to the update.
Format: List
Version: CCS 3.0.0
Example: OLD_BARRED_LIST=

OLD_CHARGE_STATE (periodic charge subscription state)
Description: The state the periodic charge was in before it was changed.
Format: String
Version: CCS 3.1.5
Example: OLD_CHARGE_STATE=SUBSCRIBED

Continued on next page
CCS EDR Tag List, Continued

**EDR tags** (continued)

**OLD_FD (friends destination number)**
- **Description:** Old friends destination number.
- **Format:** String
- **Version:** CCS 3.0.0
- **Example:** OLD_FD=44

**OLD_FF (list of friends and family numbers)**
- **Description:** The old list of friends and family numbers.
- **Format:** List
- **Version:** CCS 3.0.0
- **Example:** OLD_FF=488122346

**OLD_WLC_PERIOD (before update)**
- **Description:** The internal id of the current period in the wallet life cycle.
- **Format:** Integer
- **Version:** CCS 3.1.9
- **Example:** OLD_WLC_PERIOD=1

**OLD_WLC_PLAN (Id)**
- **Description:** The internal id of the current wallet life cycle plan.
- **Format:** Integer
- **Version:** CCS 3.1.9
- **Example:** OLD_WLC_PLAN=1

**OPERATOR_RELEASED (commit/revoke reservation)**
- **Description:** Indicator that the commit or revoke was done by an operator as identified by the USER tag.
- **Format:** Integer
- **Version:**
- **Notes:** When present, will always be 1.
- **Example:** OPERATOR_RELEASED=1

Continued on next page
OVERDRAWN_AMOUNT (take Balance Negative)
Description: The negative portion of the amount charged from the last element in the cascade that the user has in their wallet.
Format: Integer
Version:
Notes: This tag is used when:
• the NSF policy is set to takeBalanceNegative, and
• there wasn't sufficient funds
The negative portion of the amount charged is the value for this tag.
Example: \texttt{OVERDRAWN\_AMOUNT=1234}

OVERRIDDEN_TARIFF_PLAN (ID)
Description: The id of the tariff plan that is being overridden for the current call through the CUG feature node, or the Tariff Plan Override node.
Format: Integer
Version:

PC_TYPE (periodic charge type)
Description: The type of periodic charge.
Format: String
Version: 3.1.8
Notes: The possible values are:
• SUB – Subscribe or ReSubscribe
• CHRG – Charge Alignment
• UNSUB – Unsubscribe
• TERM – Terminate
Example: \texttt{PC\_TYPE=CHRG}

PI (logon name and IP address)
Description: The PI logon name and IP address of the operator that performed the recharge.
Format: String (<PI logon name>AT<operator's IP Address> format)
Version: CCS 3.0.0
Example: \texttt{PI= adminAT192.168.25.106}

Continued on next page
PORTED (name of porting carrier)

**Description:** The name of the carrier that ported this call.
**Format:** String
**Version:** CCS 3.0.0
**Notes:**
- The MNP software provides a ccsCDRLoaderPlugin on the SMP. This plug-in will determine if the call has been ported during processing.
- If so, then the CLI and TN fields will have the MNP prefix stripped and the PORTED field will be added.

PRO_RATE (periodic charge subscription)

**Description:** The percentage value a periodic charge subscription has been pro-rated at.
**Format:** Integer
**Version:** 3.1.8
**Notes:** This value is the relative percentage, where:
- 0 represents the full subscription charge.
- < 0 indicates an increased charge (period has been extended) and
- > 0 indicates a reduced charge (for less than the full period).
**Example:** PRO_RATE=27

PURCHASING_ACCT_ID (purchasing wallet ID)

**Description:** Purchasing wallet ID.
**Format:** Integer
**Version:** CCS 3.0.1
**Notes:** From ccs_acct.BE_ACCT_ID.

PURCHASING_MSISDN (purchasing CLI)

**Description:** Purchasing CLI
**Format:** String
**Version:** CCS 3.0.1
**Notes:** From ccs_acct_reference.CLI
## CCS EDR Tag List, Continued

### EDR tags (continued)

#### RATES (rated calls)

**Description:** A list of rates that exist for this call.

For multi tariff rated calls this is a comma separated list of the service ID (as listed in BALANCE_TYPES) and the list of rates for each tariff in the rate. The service ID and list of rates is colon separated.

**Format:** Integer(s) or Float

**Version:** CCS 3.1.0

**Notes:**
- Each rate will have an associated length (in seconds) as specified by the LENGTHS field and an associated discount (in 1/10000's of a percent) as specified by the DISCOUNTS field for the EDR record.
- This field is determined by the tariff associated with this call and is not fixed for a specific account.
- This field needs to be associated with the LENGTHS, DURATION, MAX_CHARGE and DISCOUNTS fields to determine the cost of the call.
- Float type if time rates (up to five decimal places), Integer type if currency rates

**Example:**

**Single tariff:**

RATES=60

**Multi tariff:**

RATES=Service ID 1:10,20,30,30,Service ID 2:5,5,5,5

**Time rate:**

RATES=9.66667

*Continued on next page*
EDR tags (continued)

RATES (rated calls) - mid call rate change

Description:
A list of rates that exist for this call.

For multi tariff rated calls this is a comma separated list of the service ID (as listed in BALANCE_TYPES) and the list of rates for each tariff in the rate. The service ID and list of rates is colon separated.

For calls with mid call rate changes, rates will also be broken down by Tariff Plan ID and the Time Stamp for each rate change. The Tariff Plan ID, Time Stamp and rates are colon separated.

For multi tariff rated calls with mid call rate changes, then the Service ID is included as well.

Format:
Integer(s) or Float

Version:
CCS 3.1.0

Notes:
- Each rate will have an associated length (in seconds) as specified by the LENGTHS field and an associated discount (in 1/10000's of a percent) as specified by the DISCOUNTS field for the EDR record.
- This field is determined by the tariff associated with this call and is not fixed for a specific account.
- This field needs to be associated with the LENGTHS, DURATION, MAX_CHARGE and DISCOUNTS fields to determine the cost of the call.
- Float type if time rates (up to five decimal places), Integer type if currency rates

Example:
Single tariff:
RATES=60

Multi tariff:
RATES=Service Id 1:10,20,30,30,Service ID 2:5,5,5,5

Time rate:
RATES=9.66667

Single tariff mid call rate change:
RATES=Tariﬀ Plan ID1:Time Stamp:10,20,30;Tariﬀ Plan ID2:Time Stamp:10,20,30

Multi tariff mid call rate change:

Continued on next page
CCS EDR Tag List, Continued

EDR tags (continued)

RECIPIENT_ACCT_ID (receiving wallet ID)
Description: Recipient wallet ID.
Format: Integer
Version: CCS 3.0.1
Notes: From ccs_acct.BE_ACCT_ID.
Example: RECIPIENT_ACCT_ID=1021

RECIPIENT_MSISDN (receiving CLI)
Description: The Recipient CLI.
Format: String
Version: CCS 3.0.1
Notes: From ccs_acct_reference.CLI.
Example: RECIPIENT_MSISDN=11012

RECORD_DATE (creation date)
Description: The date of the EDR record creation.
Format: Date (yyyymmddhhmms format)
Version: CCS 2.3.3 to current
Example: RECORD_DATE=20040803121758

REDEEMING_ACCT_REF (ID of account)
Description: The reference id of the account that redeemed the voucher.
Format: Integer
Version: CCS 3.0.0
Notes: This is an internal account reference only (ccs_acct_reference.ID).
Example: REDEEMING_ACCT_REF=61

REDEEMING_ACCT_TYPE (name of account type)
Description: The name of the redeeming Account Type (Product Type) for this voucher recharge.
Format: String
Version: CCS 3.0.0

Continued on next page
REFERENCE (credit card reference, always cc)
Description: A reference string for the transaction generated by the system.
Format: String
Version: CCS 3.0.0
Notes: There will always be a 'CC' prefix on this reference to indicate the reference was created as a result of a credit card recharge through the IVR where the PI is being used to credit the account.
Example: REFERENCE=CC040804028091

REFERENCE (operator freeform)
Description: A freeform reference string entered by the operator who performed the recharge.
Format: String
Version: CCS 3.0.0
Example: REFERENCE=FreeForm Recharge

REFERENCE (OSA Bonus)
Description: The bonus reference used in conjunction with the bonus type to determine the applicable bonus to be applied to the value when crediting the subscriber's wallet. A match will be done against the configured bonus in the database using the CCS_BONUS_TYPE.component column.
Format: String
Version: CCS 3.0.0
Example: REFERENCE=Osa Bonus

REFERENCE (from pi reference)
Description: A freeform reference string taken from the PI REFERENCE field.
Format: String
Version: CCS 3.0.0
Notes: This is the reference entered by the operator that performed the recharge.
Example: REFERENCE=PI

Continued on next page
EDR tags (continued)

REFERENCE (voucher freeform)
Description: A voucher freeform reference string entered by the operator who performed the recharge.
Format: String
Version: CCS 3.0.0
Example: TAG=

REFERENCE (web site reference - ws)
Description: A reference string for the transaction generated by the system.
Format: String
Version: CCS 3.0.0
Notes: There will always be a 'WS' prefix on this reference to indicate the transaction was initiated by an external web interface.
Example: REFERENCE=WS040804028091

RELC (inap release cause)
Description: The INAP release cause for the call.
Format: Integer
Version: CCS 3.0.0

RELOAD_BONUS (promotion name)
Description: The name of the promotional reload bonus being applied to this recharge.
Format: String
Version: CCS 3.0.0

RELOAD_BONUS_AMOUNT (amount applied)
Description: The amount of the reload bonus being applied to this recharge.
Format: Integer
Version: CCS 3.0.0
Notes: The account will be credited by the original voucher value + the value of this promotional bonus.

Continued on next page
EDR Tag List, Continued

EDR tags (continued)

RELOAD_BONUS_EXPIRY (date remaining bonus expires)
- Description: The date when the remaining promotional Reload Bonus amount will expire.
- Format: Date
- Version: CCS 3.0.0
- Notes: '0' indicates that the expiry date for this reload bonus is not set - it will never expire.

RELOAD_BONUS_LEFT (bonus amount remaining)
- Description: The amount remaining in the promotional reload bonus balance for this account after the recharge.
- Format: Integer
- Version: CCS 3.0.0

REMAINING_CHARGE (partial Charge)
- Description: The amount unable to be charged from the last element in the cascade that the user has in their wallet.
- Format: Integer
- Version:
- Notes: This tag is used when:
  - the NSF policy is set to partialCharge, and
  - there wasn't sufficient funds
  The amount unable to be charged is the value for this tag.
- Example: REMAINING_CHARGE=1234

RESULT (general cause)
- Description: The failure reason indicating the voucher state.
- Format: String
- Version: CCS 3.0.0
- Notes: Valid failure reasons are:
  - "Not Found"
  - "Failed Auth"
  - "Already Redeemed"
  - "Frozen"
  - "Batch Unavailable"
  - "Batch Stale"
- Example: RESULT=Failed Auth
CCS EDR Tag List, Continued

EDR tags (continued)

RESULT (frozen or suspended)
Description: The failure reason indicating the account state.
Format: String
Version: CCS 3.0.0
Notes: Valid failure reasons are:
• "Frozen Wallet"
• "Suspended Wallet"
Example: RESULT=Frozen Wallet

RESULT (pi failure)
Description: The reason that the recharge failed.
Format: String
Version: CCS 3.0.0
Example: RESULT=Frozen Wallet

RESULT (voucher redemption, always Success)
Description: The result of the voucher redemption.
Format: String
Version: CCS 3.0.0
Notes: This value will always be 'Success' for the EDR record.
Example: RESULT=Success

RESULT (web - success)
Description: The result of the web initiated recharge.
Format: String
Version: CCS 3.0.0
Notes: This value will always be 'Success' for the EDR record.
Example: RESULT=Success

REVERSE_CHARGE (generated by a reverse charge)
Description: Was this EDR generated by an Reverse Charge.
Format: Boolean
Version: CCS 3.1.4

REWARD (ID)
Description: The ID of the reward applied.
Format: String
Version: CCS 3.0.0
Notes: From CCS_REWARDS.ID.
Example: REWARD=62

Continued on next page
### REWARD_AMOUNTS (value of reward)

**Description:** A comma-separated list of the value of the reward for the associated balance in REWARD_TYPES.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** From CCS_MB_VOUCHER.VALUE.

**Example:** REWARD_AMOUNTS=1,2

### REWARD_TYPES (balance types getting reward)

**Description:** A comma-separated list of one or more Balance Type ID's on which the reward has been applied.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** From CCS_MB_VOUCHER.BALANCE_TYPE_ID.

**Example:** REWARD_TYPES=5,2

### RNCF (Reservation Not Charged For)

**Description:** The difference between the total reservation and the total units consumed (Reservation Not Charged For).

**Format:** Integer

**Version:** CCS 3.1.3, CCS 3.1.7.2(2degrees), CCS 3.1.8

**Notes:** A TIMED_OUT tag will also be present in the EDR.

**Example:** RNCF=100

### ROAMING_COUNTRY (name)

**Description:** The roaming country as determined from the following:

- CAMEL Originating - the country will be determined from prefix of the CLI field of this EDR record.
- Mobile Terminating - the country will be determined from the prefix of the TN field of this EDR record.
- USSD Callback - the country will be determined from the prefix of the CLI field of this EDR record.

**Format:** String

**Version:** CCS 3.0.0

**Notes:** The roaming country is taken from the COUNTRY field of the country_codes table using country_codes.CODE as the queried prefix.

**Example:** ROAMING_COUNTRY=United Kingdom

---

**Continued on next page**
ROAMING_TYPE (of call)

Description: The type of roaming call.
Format: String
Version: CCS 3.0.0
Notes: The type will be one of the following:
- CAMEL Originating - the value will always be 'CAMEL'
- Mobile Terminating - the value will always be 'MT'
- USSD Callback - the value will always be 'USSD'
Example: ROAMING_TYPE=MT

SCENARIO (voucher scenario number)

Description: The number of the Voucher Scenario for this Voucher Recharge.
Format: Integer
Version: CCS 3.1.4
Notes: Not reported if default Scenario used.
Example: SCENARIO=3

SCP_ID (where call originated)

Description: The unique identifier for the client from where the call originated. The client will be:
- an SCP for calls, or
- the SMS screens for updates via the screens.
Format: Integer
Version: CCS 2.3.3 to current
Notes: If the EDR was generated as a result of an account or balance expiry then the SCP_ID will be zero.
Example: SCP_ID=117692813

SEQUENCE_NUMBER (call identifier)

Description: This is the unique identifier used internally within the context of the call. This sequence number will be the same across multiple EDR records if the current action results in multiple EDR records being generated e.g. a voucher recharge.
Format: Integer
Version: CCS 2.3.3 to current
Notes: If the EDR was generated as a result of an account or balance expiry, then the SEQUENCE_NUMBER will be zero.
Example: SEQUENCE_NUMBER=24477838

Continued on next page
CCS EDR Tag List, Continued

EDR tags (continued)

SERVICE_HANDLE (invoked service handle)

Description: The service handle invoked by the Billing Engine that should run the control plan.
Format: String
Version: CCS 3.1.7
Example: SERVICE_HANDLE=CCS_BPL_REWARDS

SERVICE_RESPONSE (from service function)

Description: The response returned from the service function after the execution of the control plan.
Format: String
Version: CCS 3.1.7
Example: SERVICE_RESPONSE=404 Not Found (INAP 31)

SESSION_SEQUENCE

Description: This tag is added to all partial EDR records to indicate the generation sequence.
Format: Integer
Version: CCS 3.1.7.2
Notes: The first EDR in the sequence will have a value of 0 (zero). The tag is not on the final complete EDR. Partial EDRs may be created when the Commit Volume Threshold (Rating Management > Reservation Config > Add/Edit Reservation Config panel) is enabled.
Example: SESSION_SEQUENCE=1

STATE (of recharge)

Description: The state of the recharge.
Format: String
Version: CCS 3.0.0
Notes: This value will always be 'verified' for the EDR record.
Example: STATE=verified

Continued on next page
CCS EDR Tag List, Continued

EDR tags (continued)

SVC_ID (single tariff rated calls)
Description: For single tariff rated calls, the Service Id description for the CLI-DN. For multi tariff rated calls this is redundant since the information is included in the multi tariff component of the relevant tags (such as COSTS), and should not appear in the EDR record.
Format: String
Version: CCS 3.1.0
Example: SVC_ID=ServiceA

TARIFF_CODE (name)
Description: The name of the tariff code associated with the CLI_DN or Discount, sent to the TCAP interface.
Format: String
Version: CCS 3.0.0

TCE (ccs time call ended)
Description: Time the call ended. The time of A-party and B-party disconnect, or zero if no connection was made.
Format: Date (yyyymmddhhmmss format)
Version: CCS 3.0.0
Example: TCE=20070423181510

TCS (ccs time call started)
Description: Time the call started.
Format: Date (yyyymmddhhmmss format)
Version: CCS 3.0.0
Example: TCS=20070423181310

TERMINAL (Network ID)
Description: Network ID of terminal using screens that generate EDRs.
Format: String
Version: CCS 3.1.0
Example: TERMINAL=192.168.25.108

TGEO_ID (terminating geo node id)
Description: The voice call terminating geographic node id.
Format: Integer
Version: CCS 3.1.8
Example: TGEO_ID=23

Continued on next page
TIMED_OUT (reservation confirmation)
Description: Added when a timed-out reservation confirmation event occurs.
Format: String
Version: CCS 3.1.3, CCS 3.1.7.2(2degrees), CCS 3.1.8
Notes: A RNCF tag will also be present in the EDR.
Example: TIMED_OUT=TRUE

TN (called number)
Description: The Terminating Number (Called Number) being called.
Format: String
Version: CCS 3.0.0
Example: TN=01473

TN (roaming called number)
Description: The Terminating Number (Called Number) being called.
Format: String
Version: CCS 3.0.0
Notes:
- The Roaming software provides a ccsCDRLoaderPlugin on the SMP. This plug-in will determine the type of roaming call.
- If a Mobile Termination call is determined, then the roaming prefix will be stripped from the TN field.
Example: TN=441473289900

TYPE_DESCRIPTION (voucher type)
Description: A textual description for the voucher type.
Format: String
Version: CCS 3.0.0
Example: TYPE_DESCRIPTION=STANDARD

USER (operator logon name)
Description: The screens logon name of the operator who performed the action.
Format: String
Version: CCS 3.0.0
Example: USER=SU
CCS EDR Tag List, Continued

EDR tags (continued)

VOUCHER (ID of redeemed voucher)
Description: The ID of the redeemed voucher.
Format: Integer
Version: CCS 3.0.0
Notes: This is an internal voucher identifier only (ccs_voucher_reference.ID).
Example: VOUCHER=68

VOUCHER (serial number of redeemed voucher - 3.1.5)
Description: The serial number of the redeemed voucher.
Format: Integer
Version: CCS 3.1.5
Notes: This is an internal voucher identifier only (ccs_voucher_reference.serial_number).
Example: VOUCHER=6878367520

VOUCHER_NUMBER (redeemed voucher)
Description: The voucher number of the redeemed voucher.
Format: String
Version: CCS 3.0.0
Example: VOUCHER_NUMBER=0000000067

VOUCHER_TYPE (name)
Description: Voucher type name.
Format: String
Version: CCS 3.0.1
Notes: Internal reference (ccs_voucher_type.NAME)

WALLET_DELETED (always success - Y)
Description: Indicates that the wallet was deleted successfully.
Format: String
Version: CCS 3.0.0
Notes: This value will always be "Y" for the EDR record.
Example: WALLET_DELETED=Y

WALLET_TYPE (ID of wallet changed)
Description: The ID of the Wallet Type changed for this call.
Format: Integer
Version: CCS 3.0.0
Notes: This is an internal wallet type reference only (ccs_wallet_type.ID).
Example: WALLET_TYPE=1

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EDR tags (continued)

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<th>WALLET_TYPE (ID of wallet recharged)</th>
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<tr>
<td><strong>Description:</strong> The ID of the wallet that was recharged.</td>
</tr>
<tr>
<td><strong>Format:</strong> Integer</td>
</tr>
<tr>
<td><strong>Version:</strong> CCS 3.0.0</td>
</tr>
<tr>
<td><strong>Notes:</strong> This is an internal wallet type reference only (ccs_wallet_type.ID).</td>
</tr>
<tr>
<td><strong>Example:</strong> WALLET_TYPE=1</td>
</tr>
</tbody>
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## OSA CHAM SCS Gateway EDRs

### Overview

This chapter explains the OSA CHAM SCS Gateway EDRs. Refer to the *OSA CHAM Technical Guide* for details about OSA CHAM.

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<td>..........................................................252</td>
</tr>
<tr>
<td>OSA CHAM SCS Gateway EDR Tags</td>
<td>..........................................................253</td>
</tr>
</tbody>
</table>
## OSA CHAM SCS Gateway

### Events
OSA CHAM Gateway EDRs are generated on the SCS for any of the following events:

- charging session is created. (Type 20)
- reservation is confirmed. (Type 21)
- reservation is cancelled. (Type 22)
- direct debit/credit is invoked. (Type 23)

### File location
OSA CHAM EDRs are written to a location on the target platform (configured in the eserv.config.scs). The default configured location is:

/IN/service_packages/OSA/cdr/

### File name
OSA CHAM EDR file names are time stamped providing the period over which the flat file has been generated using the following format:

<start time> - <end time>.cdr

### EDR format
The OSA CHAM EDRs are saved in either tag/value pairs, or single values, separated by "\|", in this form:

```
TYPE\|tag1=value1\|tag2=value2\|etc...\|N
```

**Note:** The following tags are not a pair. The:

- first tag is the type that created the EDR, for example, 21.
- postpaid flag, for example, PostPaid
- Send SMS flag, for example, N
Create Charging Session (EDR 20)

<table>
<thead>
<tr>
<th>EDR 20 fields</th>
<th>This list identifies the EDR record fields for a create charging session (EDR type 20):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <strong>EDR type</strong> (on page 254)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Session</strong> (on page 256)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Merchant</strong> (on page 255)</td>
</tr>
<tr>
<td></td>
<td>• <strong>User</strong> (on page 257)</td>
</tr>
<tr>
<td></td>
<td>• <strong>CID</strong> (on page 254)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Creation</strong> (on page 254)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Aborted</strong> (on page 253)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Expired</strong> (on page 255)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Released</strong> (on page 255)</td>
</tr>
</tbody>
</table>

**Example EDR 20**

**Example 1:**

```plaintext
20|Session=New Charging Session|Merchant=Merchant Id/1|User=OSA Test 1|CID=1|Creation=20080117144834|Released=20080117145251
```

**Example 2:**

```plaintext
20|Session=New Charging Session|Merchant=Merchant Id/1|User=OSA Test 1|CID=1|Creation=20080924104404|Aborted=20080924113507
```
Confirmed Reservation (EDR 21)

EDR 21 fields

This list identifies the EDR record fields for a confirmed reservation (EDR type 21):

- **EDR type** (on page 254)
- **Session** (on page 256)
- **Merchant** (on page 255)
- **Account** (on page 253)
- **ReservedAmount** (on page 255)
- **ConfirmedAmount** (on page 254)
- **Reservation** (on page 255) (Reservation time)
- **Confirmed** (on page 254) (Confirmation time)
- **Reservation history** (on page 256)
- **ApplicationDescription** (on page 253)
- **UnitType** (on page 257)
- **DiscountOverride** (on page 254)
- **Send SMS flag** (on page 256)

Example EDR 21

```
21|Session=New ChargingSession|Merchant=Merchant Id/1|
   Account=912233289900/Personal/General Cash|ReservedAmount=50|
   ConfirmedAmount=20|Reservation=20031106133119|
   Confirmed=20031106133147|RES=50;LIF=180;DEB=20|
   ApplicationDescription=ReserveAmountReq:DebitAmountReq|
   UnitType=amount|DiscountOverride=0|N
```
Cancelled Reservation (EDR 22)

**EDR 22 fields**
This list identifies the EDR record fields for a confirmed reservation (EDR type 22):

- *EDR type* (on page 254)
- *Session* (on page 256)
- *Merchant* (on page 255)
- *Account* (on page 253)
- *ReservedAmount* (on page 255)
- *Reservation* (on page 255) (Reservation time)
- *Cancelled* (on page 253)
- *Reservation history* (on page 256)
- *ApplicationDescription* (on page 253)
- *UnitType* (on page 257)
- *DiscountOverride* (on page 254)

**Example EDR 22**
In this example, reservation started at 20080905152342 and expired at 0080905152642. Lifetime of the initial reservation provided back to the client was 180 seconds.

22|Session=New Charging Session|Merchant Id/1|Account=442000/Primary/Test Time/|ReservedAmount=10000|Reservation=20080905152342|Cancelled=20080905152642|LIF=180|ApplicationDescription=|UnitType=Amount|DiscountOverride=0
Direct Credit/Debit (EDR 23)

EDR 21 fields

This list identifies the EDR record fields for a direct credit or direct debit (EDR type 23):

- **EDR type** (on page 254)
- **Session** (on page 256)
- **Merchant** (on page 255)
- **Account** (on page 253)
- **PostPaid flag** (on page 255)
- **Time** (on page 256)
- **ApplicationDescription** (on page 253)
- **UnitType** (on page 257)
- **DiscountOverride** (on page 254)
- **Send SMS flag** (on page 256)

Example EDR 23

**Example 1**

For amount-based direct charges an EDR will always be written on the SCS. No Billing Engine Rate request is required as the amount is already known. Example direct debit/credit amount-based OSA Gateway EDR:

```
23|Session=New ChargingSession|Merchant=Merchant Id/1
  |Account=912233289900/Personal/General Cash|Amount=-10
  |Postpaid|Time=20031106133230|ApplicationDescription=DirectDebitAmountReq
  |UnitType=amount|DiscountOverride=0|N
```

**Example 2**

Example direct debit/credit unit seconds-based OSA gateway EDR:

```
23|Session=New ChargingSession|Merchant=Merchant Id/1
  |Account=912233289900/Personal|Amount=-10|Postpaid
  |Time=20031106133230|ApplicationDescription=DirectDebitUnitReq
  |UnitType=tariff.91.44|DiscountOverride=0|N
```
## OSA CHAM SCS Gateway EDR Tags

<table>
<thead>
<tr>
<th>EDR tags</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aborted</td>
<td>The timestamp that the charging session encountered an error and was aborted (invoked by the gateway).</td>
<td>Date</td>
<td></td>
<td>Aborted=20080924113507</td>
</tr>
<tr>
<td>Account</td>
<td>The account details.</td>
<td>Format is <code>&lt;MSISDN&gt; / &lt;wallet type name&gt; / &lt;balance type name&gt;</code></td>
<td></td>
<td>Account=91223389900/Personal/General Cash</td>
</tr>
<tr>
<td>Amount</td>
<td>The amount of the direct charge in small UBE units (amount based), or number of units (unit based).</td>
<td>Integer</td>
<td></td>
<td>Amount=-10</td>
</tr>
<tr>
<td>ApplicationDescription</td>
<td>A TpApplicationDescription structure.</td>
<td>This consists of a TpDateAndTime structure (See standard [2] for TpDateAndTime encoding) and a descriptive text string.</td>
<td></td>
<td>ApplicationDescription=ReserveAmountReq:Debit AmoutReq</td>
</tr>
<tr>
<td>Cancelled</td>
<td>The timestamp when the reservation expired without a confirmation of any funds.</td>
<td>Date</td>
<td></td>
<td>Cancelled=20080924113507</td>
</tr>
</tbody>
</table>

*Continued on next page*
OSA CHAM SCS Gateway EDR Tags, Continued

EDR tags (continued)

CID
Description: The correlation id (charging session id returned by the gateway to the client)
Format: Integer
Version: 
Example: CID=1

Confirmed
Description: The confirmed date.
Format: Date
Version: 
Example: Confirmed=20031106133147

ConfirmedAmount
Description: The confirmed amount.
Format: Integer
Version: 
Example: ConfirmedAmount=20

Creation
Description: The timestamp that the charging session was created (invoked by the client).
Format: Date
Version: 
Example: Creation=20080117144834

DiscountOverride
Description: The discount override.
Format: Integer
Version: 
Example: DiscountOverride=0

EDR type
Description: The EDR type
Format: Integer
Version: 
Example: 21

Continued on next page
OSA CHAM SCS Gateway EDR Tags, Continued

**EDR tags (continued)**

**Expired**
- **Description:** The timestamp that the charging session was expired due to lack of activity for an outstanding reservation (invoked by the gateway).
- **Format:** Date
- **Version:**
- **Example:** Expired=20080117145251

**Merchant**
- **Description:** A TpMerchantAccountID structure
- **Format:** Composed of the merchant ID (string) and account ID (integer)
- **Version:**
- **Notes:** To be included in all CDRS (Types 20 – 23) that will be generated by the OSA CHAM SCS gateway. Otherwise the parameter is ignored by this method.
- **Example:** Merchant=Merchant Id/1

**PostPaid flag**
- **Description:** Indicates if Prepaid, or Postpaid.
- **Format:** PostPaid, or PrePaid
- **Version:**
- **Example:** PostPaid

**Released**
- **Description:** The timestamp that the charging session was released (invoked by the client).
- **Format:** Date
- **Version:**
- **Example:** Released=20080117145251

**Reservation**
- **Description:** The reservation date.
- **Format:** Date
- **Version:**
- **Example:** Reservation=20031106133119

**ReservedAmount**
- **Description:** The reserved amount.
- **Format:** Integer
- **Version:**
- **Example:** ReservedAmount=50

*Continued on next page*
Reservation history
Description: The reservation history.
Format: Semi colon separated list of key= value pairs of history items.
Version:
Notes:
  • CRE = amount 'credited' towards reservation held on the gateway (this is not crediting towards the reservation held on the UBE).
  • RES = initial reservation for 50 small UBE units
  • LIF = lifetime of reservation was 180 seconds
  • DEB = debited (and possibly confirmed) 20 small UBE units from the initial reservation amount
Example: RES=50;LIF=180;DEB=20

Session
Description: The name of the session.
Format: String
Version:
Example: Session=New ChargingEvent

Send SMS flag
Description: Whether or not send SMS.
Format: Boolean
Version:
Notes: N, or Y
Example: N

Time
Description: The direct credit or direct debit time.
Format: Date
Version:
Example: Time=20031106133230

Continued on next page
### EDR tags (continued)

<table>
<thead>
<tr>
<th><strong>UnitType</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td><strong>Format:</strong></td>
</tr>
<tr>
<td><strong>Version:</strong></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>User</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td><strong>Format:</strong></td>
</tr>
<tr>
<td><strong>Version:</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
</tr>
</tbody>
</table>
Chapter 31

UAS Generated EDRs

Overview

Introduction
This chapter explains the EDRs generated on the UAS.

In this chapter
This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
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<tr>
<td>ACS EDRs</td>
<td>263</td>
</tr>
<tr>
<td>DCD EDRs</td>
<td>283</td>
</tr>
<tr>
<td>SCA EDRs</td>
<td>285</td>
</tr>
<tr>
<td>NP EDRs</td>
<td>287</td>
</tr>
<tr>
<td>Messaging Manager EDRs</td>
<td>292</td>
</tr>
</tbody>
</table>
### BEAPI EDR tags

**ANS_TM (answer time)**
- **Description:** Answer time
- **Format:** Date
- **Version:** BEAPI 3.0.1
- **Notes:** May not be available until the call ends.
- **Example:** ANSI_TM=20080406225629

**BEARER_TYPE (bearer type id)**
- **Description:** Indicates the bearer type ID that was sent to the Commerce Engine.
- **Format:** Integer
- **Version:** BEAPI 3.0.0
- **Notes:** The value in the ACS CDR is replaced with the new value obtained from the `type` parameter in CCS BEAPI Intec Billing Technical Guide, Configuration of a Service topic, Bearer Capability Mapping.
- **Example:** BEARER_TYPE=24

**CELLID (cell id in the idp)**
- **Description:** Indicates the cell ID in the IDP, if it exists.
- **Format:** G Digit
- **Version:** BEAPI 3.0.0
- **Notes:** This is in the same format as 'G digits'. See the topic *Extraction sources in IDP* in the ACS Technical Guide - Configuring the acs.conf chapter for more information outside the scope of this guide.
- **Example:** CELLID=620F020332000C

**LI_LOC_NUM (location information for loc_num)**
- **Description:** Indicates the location information for the location number in the IDP, if it exists.
- **Format:** Integer
- **Version:** BEAPI 3.0.0
- **Notes:** Optional
- **Example:** LI_LOC_NUM=502181000024895
BEAPI EDRs, Continued

BEAPI EDR tags (continued)

LOC_NUM (location number in idp)
- Description: Indicates the location number in the IDP, if it exists.
- Format: Integer
- Version: BEAPI 3.0.0
- Notes: Optional
- Example: LOC_NUM=502180100004465

RDPN (redirecting party id)
- Description: Redirecting party ID.
- Format: Network number
- Version: BEAPI 3.0.1
- Notes: CDMA redirected calls only.
- Example: RDPN=21939340

RDPNN (normalised redirecting party id)
- Description: Normalised redirecting party ID.
- Format: Network number
- Version: BEAPI 3.0.1
- Notes: CDMA redirected calls only.
- Example: RDPNN=6421939340

RDRES (redirection reason)
- Description: Redirection Reason (as per IS-826).
- Format: Integer
- Version: BEAPI 3.0.1
- Notes: CDMA redirected calls only.
  - 0 = Not specified
  - 1 = Call Forwarding-Busy
  - 2 = Call Forwarding-No Answer
  - 3 = Call Forwarding-Unconditional
  - 7 = Call Forwarding-Default
- Example: RDRES=2

Continued on next page
**BEAPI EDRs, Continued**

### BEAPI EDR tags (continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>The Service Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Integer</td>
</tr>
<tr>
<td>Version</td>
<td>BEAPI 3.0.1</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>• 1000 = Voice calls</td>
<td></td>
</tr>
<tr>
<td>• 1100 = SMS messages</td>
<td></td>
</tr>
<tr>
<td>• 1150 = WAP access</td>
<td></td>
</tr>
<tr>
<td>• 1200 = Mobile Data</td>
<td></td>
</tr>
<tr>
<td>• 1300 = USSD</td>
<td></td>
</tr>
<tr>
<td>• 1400 = Voucher management</td>
<td></td>
</tr>
<tr>
<td>• 1500 = Point of Sale</td>
<td></td>
</tr>
<tr>
<td>• 1900 = Video</td>
<td></td>
</tr>
</tbody>
</table>

**Example:** SC=1300
ACS EDRs

**EDR generation**

ACS EDRs are generated and processed by the slee_acs on each UAS and uploaded at regular intervals to the USMS using the cmnPushFiles process.

---

**Diagram**

This diagram shows the components of the ACS installation on the UAS and USMS which generate and migrate EDRs.

---

**EDR file names**

ACS EDR file names have the following format:

\(<machine>_\langle app\rangle_\langle GMT \text{ start time}\rangle_\langle close \text{ time}\rangle_\langle pid\rangle.cdr\)

where:

- \(<machine>\) is the UAS which generated the EDR.
  
  **Note:** This is added when the file is moved to the SMP.
- \(<app>\) is the application that produced the EDR
- \(<\text{start time}>\) is the date/time that the first EDR in the file was created, specified in the yyyymmddhhmms.
- \(<\text{close time}>\) is the date/time that the last EDR in the file was created and the file closed, specified in the yyyymmddhhmms.
  
  **Note:** This is present if the CdrFileAppendCloseTime parameter in acs.conf is set.
- \(<\text{pid}>\) is the Unix Process ID - up to 5 numeric characters.
  
  **Note:** This is present if the CdrFileAppendPid parameter in acs.conf is set.

---

**Continued on next page**
ACS EDRs, Continued

EDR file names (continued)

Example file names

File name on SMP, with the default parameter settings (with the PID appended):

UAS01_ACS_200805061707_11501.cdr

File name on SMP, with the Close Time and PID appended:

UAS01_ACS_200805061707_200805061809_11501.cdr

EDR collection

The ACS EDRs are saved to file in the following locations on the SMP:

- IN/service_packages/SMS/cdr/received
- If customer configured processing is done, they may be moved to:
  IN/service_packages/SMS/cdr/processed

File format

The only file format supported by the ACS EDR API is the 'Pipe Tag LineFeed' format. This encodes data using the following format.

APP|Tag=Value|Tag=Value[,Value…]<LF>

The format has the following characteristics:

- **APP** is the name of service which created the EDR.
- The format is entirely formed of printable ASCII characters, plus the LF character (Unix style newline "\n") as a terminator.
- Special characters are:
  - '|' - The pipe character is used to separate fields
  - '=' - The equals character is used to separate Tag and Value
  - ',' - The comma character is used with fields which allow multiple values for a single tag
- Maximum record length is 256 characters (255 + LF)
- The file may contain zero or more records. There is no specified limit to the number of records in any given file, however the maximum file:
  - size is specified in the CdrFileMaxSize parameter, and
  - age in the CdrFileMaxAge parameter in acs.conf.
- There must be at least one tag in each record.
- The order of tags is not significant and may change, possibly within a single file.
- The presence of any particular tag is not guaranteed.
- There is no dependency of tags (for example: the presence of any specific tag does not guarantee the presence of any related tags).

Example slee_acs EDRs

Example 1

Unsuccessful voice call.

ACS|CID=135883|OA=0|OTI=1|CUST=1|SN=81822222|TN=818222222|CGN=81811111|CLI=81811111|SK=111|TCS=20080506050720|LPN=|LAC=|CS=10|CC=|CPNI=|TPNI=0|PTNA=|CGN=1|TGNA=|TFN=ST-1,SDTN-2,UTTP-4,END-3|LGID=0|CPN=818222222|OCPI=|CPNN=3|CGN=3|CPI=1|NOAT=0|CBAT=0|FATS=0|CCTS=20080506050721|HTS=20080506050721|AIDL=

Example 2:

Continued on next page
ACS EDRs, Continued

Example see_acs EDRs (continued)

Successful national call from CCS on a UAS.

CCS|CID=487291|OA=0|OTI=0|CUST=1|SN=123456789|TN=|CGN=7|CLI=123456789|SK=1|TCS=20060701173254|LPN=|LAC=|CS=1|CPC=10|PCNI=0|PCNA=|TPNI=0|PTNA=|CGN=7|TGNA=|TN=ST-1,uatb-4,DISC-5,END-3|LGID=0|CPN=|CPNN=3|CGNN=3|CPPI=1|NOAT=0|CBAT=0|FATS=0|CCTS=0|HTS=0|AIDL=|WALR=

Example 3:
Voice MO call.

VOICE_MO|CID=135883|OA=0|OTI=0|CUST=1|SN=9393009|TN=9393009|CGN=9393301|CLI=6421939340|SK=2|TCS=20080506050226|TCE=20080506050327|LPN=|LAC=|CS=4|CPC=10|PCNI=0|PCNA=|TPNI=0|PTNA=|CGN=93933301|TGNA=|TFN=ST-1.0,DDS-68.01,STTP-18.013,CCDR-19.0,CCDR-20.0,uatb-2.01111111,STC-59.01,END-3.0|LGID=0|CPN=VOICE_MO|CAET=0|CCET=60.0|OCPI=|CPNN=3|CGNN=3|CPPI=1|NOAT=1|CBAT=0|FATS=0|CCTS=20080506050227|HTS=20080506050227|AIDL=|ANS_TM=20080506050127|BEARER_TYPE=24|PCA=9393009|LOC_NUM=5021801004465|NT=6|RDPN=21939340|RDPNN=6421939340|RDPRES=2|SC=1300|SST=1|EXT9=12345678

Continued on next page
ACS EDRs, Continued

The following list details the tag values of EDRs created by the ACS service, the type and length of data required, and a description of the value.

AIDL (played announcement ID list)

Description: Played Announcement ID List, sequence of ACS_ANNOUNCEMENT_ENTRY.ID

This is a comma list of all of the elementary message IDs played during the call in sequence, either as a result of an:

• INAP PlayAnnouncement, or
• INAP PromptAndCollectUserInformation operation.

Format: comma sequence of unsigned 32-bit int

Version: ACS 2.3.3 to current

Notes:

1) Enabled by CdrExtraFields acs.conf flag.
2) If the DigitsInAnnouncementList acs.conf flag is set to true, each elementary message ID has the following added immediately after the ID value. If this was:

• a successful PlayAnnouncement or is not the last elementary message ID in the announcement, then nothing.
• PlayAnnouncement, during which the caller abandoned, then "Z"
• a successful PromptAndCollectUserInformation, then "^<digits collected>" , e.g. "^12345678"
• PromptAndCollectUserInformation, for which an improper caller response error, or timeout, was received, then "^X"
• PromptAndCollectUserInformation, during which the caller abandoned, then "^Z"

3) The announcements that match the ids can be seen via the ACS > Configuration > Announcements Tab > Edit screens, the column heading ResourceID are the numbers referred to in the AIDL list.

Examples:

off - AIDL=10,20,30,40
on - AIDL=10,20^X,20^12345678,30Z

BCOR (balance cascade override)

Description: Indicates a balance cascade override was used instead of the original balance cascade.

Format: Integer

Version: ACS 2.4.2

Notes: Used by FOX and DCD InitialTimeReservation and DirectTimeCharge.

Example: BCOR=257

Continued on next page
ACS EDRs, Continued

ACS EDR tags (continued)

BFT (billing failure treatment)
Description: Indicates that Billing Failure Treatment has been used for the call. The value is the total amount of time reserved (including that withheld), before BFT occurred.
Format: Integer
Version: ACS 2.4.2
Notes:
• This is set by the UATB node.
• For a system failure on initial reservation this will be 0.
Example: BFT=3000

CA (called address)
Description: Called Address
Called address from the CallInformationReport INAP operation.
Format: This is a string of digits, 0-32 chars.
Valid value are: 0-9A-F*#
Version: ACS 2.3.3 to current
Notes: Enabled by SendCIR acs.conf flag.
Example: CA=9393009

CAET (call attempt elapsed time)
Description: Call Attempt Elapsed Time
Format: Integer
Version: ACS 2.4.2 to current
Notes:
Seconds to the nearest second.
If elapsedTimesFromApplyChargingReport flag is set to '1' then it is from the Apply Charging Report.
Example: CAET=20

CBAT (connected by attempt termination)
Description: Call was connected by attempt termination, was the Connect operation sent along with a RequestReportBCSM to arm for busy, etc.
Format: Integer
Version: ACS 2.3.3 to current
Notes: 1 for true, 0 for false.
Example: CBAT=0

Continued on next page
ACS EDRs, Continued

ACS EDR tags (continued)

CC (carrier code)
Description: Carrier Code
Format: 0-9A-F*#
(0-32 chars)
Version: ACS 2.3.3 to current
Notes: The digits of the carrier code as given in the Set Carrier Code feature node.
Example: CC=

CCET (call connect elapsed time)
Description: Call Connect Elapsed Time.
Format: Seconds to the nearest tenth of a second as a decimal number with one decimal place.
Version: ACS 2.3.3 to current
Notes: If elapsedTimesFromApplyChargingReport flag is set to '1' then it is from the Apply Charging Report.
Example: CCET=121.3 for 121.3 seconds.

CCTS (call connect timestamp)
Description: Call Connect Timestamp
The time the Connect operation was sent to the SSP.
Format: Date - YYYYMMDDHHMMSSS
Version: ACS 2.3.3 to current
Example: CCTS=20080413221947

CGN (calling network number)
Description: The normalised digits of the Calling Network Number. The caller's network address as determined by the Chassis. This is derived from one of the parameters of the Initial DP according to the config options on the service line of the acs.conf file.
Format: 0-9A-F*#
(0-32 chars)
Version: ACS 2.3.3 to current
Notes: From IDP
Example: CGN=93933301

Continued on next page
ACS EDRs, Continued

ACS EDR tags (continued)

CGNA (global calling network address)
Description: Global Calling Network Address, as stored in
VPN_STATION.GVNS_ADDRESS
Format: 0-9A-F*#
(0-32 chars)
Version: ACS 2.3.3 to current
Notes: VPN only. If VPN is not installed, value is blank.
Example: CGNA=

CGNN (calling party nature of number)
Description: Calling Party ID Nature of Number
Format: Integer - 0..255
Version: ACS 2.3.3 to current
Notes: The nature of address of the number using the standard ITU-T notation i.e.
1 = subscriber
2 = unknown
3 = national
4 = international
Example: CGNN=3

CID (slee call ID)
Description: The slee call ID
Unique SLEE identifier assigned to the current call.
Format: Unsigned 32 bit integer
Version: ACS 2.3.3 to current
Example: CID=135883

CLI (calling logical number)
Description: Calling Line Identifier.
The caller's network address as determined by the Chassis.
More accurately, the calling logical number. This is derived
from one of the parameters of the Initial DP according to the
config options on the service line of the acs.conf file.
Format: 0-9A-F*#
(0-32 chars)
Version: ACS 2.3.3 to current
Notes: From IDP. May match CGN
Example: CLI=6421939340

Continued on next page
### ACS EDR tags (continued)

**CPC (calling party category)**
- **Description:** Incoming Calling Party Category.
- **Format:** Integer 0..255
- **Version:** ACS 2.3.3 to current
- **Notes:** From IDP
- **Example:** CPC=10

**CPN (control plan name)**
- **Description:** Control Plan Name
  - The name of the last ACS Control Plan to be executed for this call.
- **Format:** String, 0-50 chars
- **Version:** ACS 2.3.3 to current
- **Example:** CPN=VOICE_MO

**CPNI (calling private network ID)**
- **Description:** Calling Private Network ID
  - This is the database ID of the VPN network from which the call originated.
- **Format:** Unsigned 32-bit integer
- **Version:** ACS 2.3.3 to current
- **Notes:** This is only relevant when using the Oracle VPN product. Otherwise, it is set to 0.
- **Example:** CPNI=0

**CPNN (called party nature of number)**
- **Description:** Called Party Nature of Number.
  - This is the nature of address of the called party number, which is derived from one of the parameters of the Initial DP in the same way as calling logical number and calling network number. In practice, it will be derived from the called party number field of the Initial DP as there are no suitable alternative fields.
- **Format:** Integer 0..255
- **Version:** ACS 2.3.3 to current
- **Notes:** The number itself is held in the EDR as "SN".
- **Example:** CPNN=3

---

*Continued on next page*
**ACS EDR tags (continued)**

<table>
<thead>
<tr>
<th>CPPI (calling party presentation restricted indicator)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> Calling Party Presentation restricted Indicator (&quot;[CPPI=0]&quot; appears in the EDR.) When it is, it will indicate whether the calling logical number may be presented to subscribers.</td>
</tr>
<tr>
<td>- 1 means no (restricted)</td>
</tr>
<tr>
<td>- 0 means yes (not restricted).</td>
</tr>
<tr>
<td><strong>Format:</strong> Integer 0..255</td>
</tr>
<tr>
<td><strong>Version:</strong> ACS 2.3.3 to current</td>
</tr>
<tr>
<td><strong>Notes:</strong> Future Field</td>
</tr>
<tr>
<td><strong>Example:</strong> CPPI=1</td>
</tr>
</tbody>
</table>

Continued on next page
ACS EDRs, Continued

ACS EDR tags (continued)

CS (acs connect status)

Description: Connect Status. Whether AACS 2.4.2CS tried to connect the call and if so, what happened to it.

Format: Integer 0 to 12

Version: ACS 2.3.3 to current

Notes: Statuses include:
- 0 Connect status not recorded.
- 1 ACS sent a ReleaseCall operation.
- 2 ACS sent a Continue operation (or a Connect operation with destination routing address (DRA) set to the called party number in the IDP in certain circumstances. See the ACS Technical guide.) What happened to the call after the operation was sent is not recorded.
- 3 ACS attempted to connect the call. What happened to the call after the operation was sent is not recorded.
- 4 ACS attempted to connect the call and the call was answered.
- 5 ACS attempted to connect the call but the called party was busy.
- 6 ACS attempted to connect the call but hit route select failure.
- 7 ACS attempted to connect the call but the no answer timeout expired.
- 8 ACS attempted to connect the call but either the caller abandoned before answer or a TC abort was received. (TC abort is unlikely.)
- 9 ACS got to an END node but there had been a service handover and so, rather than disconnecting the call. It is awaiting an event report for mid call. Only relevant with the VPN product.
- 10 ACS sent a Continue operation. What happened to the call after the operation was sent is not recorded.
- 11 ACS received a TCAP Abort, unknown status.
- 12 ACS received a release by SSP on credit expiry.

Example: CS=4

Continued on next page
ACS EDR tags (continued)

CUST (customer database ID)
Description: ACS Customer Database ID (From the ACS_CUSTOMER table).
Format: Unsigned 32-bit integer.
Version: ACS 2.3.3 to current
Notes: The customer is the one who "owns" the call. The meaning of "own" is service specific. For example, with the ACS service it is the customer who owns the called number or the calling number record that triggered the Control Plan.
Example: CUST=1

DISC (discount override)
Description: Identifies the discount percentage override used instead of the original (if any) discount that was to be applied.
Format: Integer
Version: ACS 2.4.2
Notes: • May be a comma separated list of discount values.
• Used by FOX and DCD InitialTimeReservation and DirectTimeCharge.
Example: DISC=15

EXT(0-9) (extension buffer contents)
Description: There are 10 extension digits buffers in ACS numbered 0 to 9. These can be populated via, for example, decoding extensions from the Initial DP.
Whenever a EDR is logged, the values of all the non-empty extension digits buffers will be put in the EDR.
Format: Integer
Version: ACS 2.4.0 to current
Example: If extension buffer 0 contains 12345678 and extension buffer 5 contains 222 you will get:
EXT0=12345678|EXT1=222|

FATS (first announcement timestamp)
Description: First Announcement Timestamp
The time the first PlayAnnouncement or PromptAndCollectUserInformation operation was sent to the SSP for this call.
Format: Date (yyyymmddhhmmss format)
Version: ACS 2.3.3 to current
Example: FATS=0

Continued on next page
ACS EDR tags (continued)

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTS</td>
<td>Hunting time stamp. The time the first Connect operation was sent for this call. N.B. Not necessarily the 1st Connect for this hunt group.</td>
<td>Date (yyyymmddhhmmss format)</td>
<td>ACS 2.3.3 to current</td>
<td>HTS=20080413221947</td>
</tr>
<tr>
<td>LAC</td>
<td>Last Account Code. Digits of the last account code used in this call. Most recent Account Code entered during the service logic.</td>
<td>0-9A-F*# (0-32 chars)</td>
<td>ACS 2.3.3 to current</td>
<td>See AC node</td>
</tr>
<tr>
<td>LGID</td>
<td>Language ID. From first match in loaded profile The ACS database ID of the language used for announcements etc. From the ACS_LANGUAGE table.</td>
<td>Unsigned 32-bit integer.</td>
<td>ACS 2.3.3 to current</td>
<td>LGID=0</td>
</tr>
<tr>
<td>LPN</td>
<td>Last PIN Number. Most recent PIN entered during the service logic. The digits of the last PIN collected by a PIN authorisation node for this call.</td>
<td>0-9A-F*# (0-32 chars)</td>
<td>ACS 2.3.3 to current</td>
<td>See PIN authorisation node.</td>
</tr>
</tbody>
</table>

Continued on next page
ACS EDRs, Continued

ACS EDR tags (continued)

MCOR (maximum charge override)

Description: Indicates a maximum charge override was used instead of the original (if any) maximum charge that was to be applied.

Format: Integer

Version: ACS 2.4.2

Notes:
- If no maximum charge override has been used, the value is -1.
- Used by FOX and DCD InitialTimeReservation and DirectTimeCharge.

Example: MCOR=-1

NOAT (number of attempt terminations)

Description: Number of Attempt Terminations
The number of times an attempt termination type node has been encountered for this call, i.e. the number of time a Connect operation has been sent with busy, RSF etc, EDPs armed.

Format: Integer 0..255

Version: ACS 2.3.3 to current

Example: NOAT=1

NT (network type)

Description: Network type (determined from Service Key).

Format: Integer

Version: ACS 2.4.0 to current

Notes:
- 0 = Unspecified
- 1 = CDMA
- 2 = TDMA

Example: NT=0

OA (sccp originating address)

Description: The SCCP Originating Address where the TCAP messages are coming from.

Format: Integer

Version: ACS 2.4.2

Notes: This would be 0 if you haven't included it in your test tool (slpit) script.

Example: OA=0
ACS EDRs, Continued

ACS EDR tags (continued)

OCPI (original called party)
Description: Original Called Party
The digits of the original called party ID form the Initial DP.
Format: 0-9A-F*# (0-32 chars)
Version: ACS 2.3.3 to current
Notes: From IDP
Example: OCPI=

OTI (originating transaction ID)
Description: Originating Transaction ID
TCAP transaction ID for invoking Internal DP.
Format: Integer
Version: ACS 2.3.3 to current
Example: OTI=0

PCNA (calling private network address)
Description: Calling Private Network Address.
The VPN address of the calling station.
Format: 0-9A-F*# 
(0-32 chars)
Version: ACS 2.3.3 to current
Notes: VPN only. If VPN is not installed, value is blank.
Example: PCNA=

PTNA (private terminating network address)
Description: Private Terminating Network Address.
The VPN address of the terminating station.
Format: 0-9A-F*# 
(0-32 chars)
Version: ACS 2.3.3 to current
Notes: VPN only. If VPN is not installed, value is blank.
Example: PTNA=

Continued on next page
ACS EDRs, Continued

ACS EDR tags (continued)

RELC (acs release cause)
Description: Release Cause. The decimal value of the release cause, either from the CallInformationReport or from the ReleaseCall operation sent by ACS (as appropriate). For the coding of release causes, see ITU_T recommendation Q.850.
Format: Integer 0..255
Version: ACS 2.3.3 to current
Notes: Enabled by SendCIR acs.conf flag.
Example: RELC=31

SK (service key)
Description: Service Key
Numeric service key invoking service. The decimal value of the INAP service key from the Initial DP operation.
Format: Unsigned 32-bit integer.
Version: ACS 2.3.3 to current
Notes: From IDP
Example: SK=1000

SN (service number)
Description: Service (original called) Number
The called party number. Called number which invoked the service (e.g. 1-800…). See notes for CPNN (on page 270).
Format: 0-9A-F*#
(0-32 chars)
Version: ACS 2.3.3 to current
Example: SN=9393009

TCE (acs time call ended)
Description: Time Call End
Format: Date
Version: ACS 2.3.3 to current
Notes: If elapsedTimesFromApplyChargingReport flag is set to '1' then it is from the Apply Charging Report.
Example: TCE=20080413222047

Continued on next page
### ACS EDR tags (continued)

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCS</td>
<td>Time Call Start</td>
<td>Date</td>
<td>ACS 2.3.3 to current</td>
<td>TCS=20080413221947</td>
</tr>
</tbody>
</table>

*Continued on next page*
TFN (tracked feature node list)

Description: Tracked feature node list. A Comma separated list of feature nodes traversed in the Control Plan.

The complete set of mnemonics is:

- {"ST", "Start"},
- {'END', "End"},
- {'UT", "Unconditional Termination"},
- {'AT", "Attempt Termination"},
- {'PLAY", "Play Announcement"},
- {'DOY", "Day of year"},
- {'DOW", "Day of week"},
- {'TOD", "Time of day"},
- {'DN", "Dialed Number"},
- {'CP", "Calling Party"},
- {'GR", "Geographic Region"},
- {'PD", "Proportional Distribution"},
- {'EV_C", "Event counting"},
- {'EV_S", "Event setting"},
- {'EV_B", "Event branching"},
- {'DISC", "Disconnect Call"},
- {'SD", "Selection dependent routing"},
- {'SHO", "Service Handover"},
- {'PIN", "PIN Authorisation"},
- {'ACE", "Account Code Entry"},
- {'CDPT", "Collect Digits to pending TN"},
- {'CDST", "Collect digits to sub tag"},
- {'CF", "Call filtering"},
- {'TPTT", "Test Pending TN Type"},
- {'SEPP", "Set Pending TN from Profile"},
- {'TOWP", "Time of week profile"},
- {'ATTP", "Attempt terminate to pending"},
- {'UTTP", "Unconditional terminate to pending"},
- {'PB", "Profile branching"},

Continued on next page
ACS EDR tags (continued)

- "MCM", "Mid call mark",
- "STTP", "Store pending TN to profile",
- "DDS", "Dynamically driven switch",
- "NLT", "Number lookup and translate",
- "ACP", "Activate Control Plan",
- "ALP", "ACS Load Profile",
- "CPC", "Calling Party Category",
- "SCC", "Set carrier code",
- "MCJ", "Mid Call Jump",
- "STC", "Set Tariff code",
- "CPNT", "Control Plan Notes",
- "CONT", "Terminate Unchanged",
- "PAPV", "Play Variable Part Announcement",
- "MTCH", "Number Matching",
- "SSMF", "Send Short Message F",
- "CNPA", "Set Cut and Paste",
- "CUTC", "Cut Calling Number",
- "SDTN", "Store Digits to Pending TN",
- "TPTT", "Test Pending TN Type",
- "STPF", "Store Profile"

Format: String. Comma sequence of type-#,type-#

Version: ACS 2.3.3 to current

Notes: Enabled by CdrExtraFields acs.conf parameter.

Example: If CdrExtraFields is set to 1 (track traversed feature nodes and played announcements - the default):
"TFN=ST-1,SDTN-2,UTTP-4,END-3" for a:
- Start node (node number 1),
- Store Digits to Pending TN node (node number 2),
- Unconditional terminate to pending (node number 4) and
- End (node number 3).

If CdrExtraFields is set to 2 (include node substates):
"TFN=ST-1.0,SDTN-2.012,UTTP-4.01,END-3.0"
ACS EDRs, Continued

ACS EDR tags (continued)

TGNA (global terminating network address)

Description: Global Terminating Network Address
VPN_STATION.GVNS_ADDRESS

Format: String, zero, up to 32 characters.

Version: ACS 2.3.3 to current

Notes:
• VPN only
• Characters 0-9A-F*#
• If VPN is not installed, value is blank.

Example: TGNA=

TN (acs termination number)

Description: Termination number. The number we returned to the SSP in Connect, or empty for Disconnect/Continue. The digits of the destination routing address (DRA) in the Connect operation.

Format: String, zero, up to 32 characters.

Version: ACS 2.3.3 to current

Notes:
• From Control Plan.
• Characters 0-9A-F*#

Example: TN=9393009

TPNI (terminating private network ID)

Description: Terminating Private Network ID This is the database ID of the VPN network to which the call is made.

Format: unsigned 32-bit integer.

Version: ACS 2.3.3 to current

Notes: VPN only. If VPN is not installed, value is blank.

Example: TPNI=0

TPO (tariff plan override)

Description: Identifies the tariff plan used to override the original tariff plan that was to be applied.

Format: Integer

Version: ACS 2.4.2

Notes: Used by FOX and DCD InitialTimeReservation and DirectTimeCharge.

Example: TPO=667

Continued on next page
ACS EDR tags (continued)

<table>
<thead>
<tr>
<th>WALR (wallet reference)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td><strong>Format:</strong></td>
</tr>
<tr>
<td><strong>Version:</strong></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
</tr>
</tbody>
</table>
## DCD EDRs

### EDR generation
EDRs are generated and processed by the slee_acs on the UAS and uploaded at regular intervals to the USMS using the cmnPushFiles process.

Diameter Charging Driver (DCD) tags are appended to the EDRs generated by the Advanced Calling Services application. Refer to *EDR Reference Guide*, topic *ACS EDR tags* for the full list and descriptions.

### DCD EDR tags
Here are the EDR tags produced by DCD.

**DIA_RC** *(result code)*
- **Description:** Number indicating diameter result-code received in CCA message.
- **Format:** Integer
- **Concept:** Result-Code
- **Example:** `DIA_RC=2001`

**DIA_REQ** *(current session message number)*
- **Description:** Sequential number, indicating message within the current session.
- **Format:** Integer
- **Concept:** CC-Request-Number
- **Notes:** For Diameter event based messages, this will always be 0, and hence not recorded.
- **Example:** `DIA_REQ=1`

**DIA_SID** *(session id)*
- **Description:** This is a unique value identifying the Diameter Session.
- **Format:** Of the form:
  `<DiameterIdentity>;<time>;<SLEE CallID>`
  Where the `<time>` is the time of the first request (expressed as the number of seconds since the Unix epoch time), and `<DiameterIdentity>` is that of the SCP (i.e. the Origin-Host used in the CCR message).
- **Concept:** Session-ID
- **Example:** `DIA_SID=scp1.Oracle.co.nz;1201809603;1394074`

**DIA_TIME** *(time ccr sent)*
- **Description:** The time the CCR was sent, in hundredths of second
- **Format:** Date - "YYY-MM-DD-HH-MM-SSSS"
- **Concept:** Session-ID
- **Example:** `DIA_TIME=2008-03-27-20-41-3831`

### Custom tag names
The `cdrTag` configuration parameter allows for an EDR to have tag names customer defined.

### Example EDRs
Here are some example EDRs generated by DCD.

Refer to *EDR Reference Guide*, topic *ACS EDR Tags* for the non-DCD tags.
Example EDRs (continued)

Example 1
Whole EDR for an InitialTimeReservation and ConfirmTimeReservation:

EDR:
"VOICE_MO|CID=285222|OA=0|OTI=1|CUST=1|SN=0777666444|TN=0777666444|CGN=8888887|CLI=8888887|SK=1|TCS=20080327204138|TCE=20080327204241|LPN=|LAC=|CS=4|CPC=10|CC=|CPNI=0|PCNA=|TGNA=|TFN=ST-2,SDTN-21,uatb-3,END-14|LGID=0|CPN=|CAET=3|CCET=60.0|CA=60777666555|RELC=17|OCPI=|CPNN=3|CGNN=3|CPPI=1|NOAT=1|CBAT=0|FATS=0|CCTS=20080327204138|HTS=20080327204138|AIDL=|DIA_SID=|DIA_REQ=0|DIA_TIME=2008-03-27-20-41-3831|DIA_RC=2001|DIA_SID=|DIA_REQ=1|DIA_TIME=2008-03-27-20-41-3847|PCNA=60777666555|WALR=86"

Note the DCD part of the EDR. All four tags are present twice:

- The Initial Time Reservation
  DIA_SID=nzwn-test03-z2;47ec0682;45a26|DIA_REQ=0|DIA_RC=2001|DIA_TIME=2008-03-27-20-41-3831

- The Termination Time Reservation
  DIA_SID=nzwn-test03-z2;47ec0682;45a26|DIA_REQ=1|DIA_RC=2001|DIA_TIME=2008-03-27-20-41-3847

Example 2
Whole EDR for DirectNamedEvent:

EDR:
"VOICE_MO|CID=287224|OA=0|OTI=0|CUST=1|SN=0777666444|TN=|CGN=8888887|CLI=8888887|SK=1|TCS=20080327231115|TCE=0|LPN=|LAC=|CS=1|CPC=10|CC=|CPNI=0|PCNA=|TGNA=|TFN=ST-1,bevt-2,END-3|LGID=0|CPN=DirectDebit|CAET=0|CCET=0.0|CA=|RELC=31|OCPI=|CPNN=3|CGNN=3|CPPI=1|NOAT=0|CBAT=0|FATS=0|CCTS=0|HTS=0|AIDL=|DIA_SID=nzwn-test03-z2;47ec2993;461f8|DIA_REQ=0|DIA_TIME=2008-03-27-23-11-1577

Note in the DCD part of the EDR that event based EDRs only need to receive:
DIA_SID=nzwn-test03-z2;47ec2993;461f8|DIA_REQ=0|DIA_TIME=2008-03-27-3-11-1577

Example 3
For cdrTag for MMM_TAG and ZZZ_TAG, the following would be an example of what the resulting EDR would look like.

CCS_BE|CID=205383|OA=0|OTI=0|CUST=1|SN=1130|TN=|CGN=0212994768|CLI=0212994768|SK=3|TCS=20091117192600|LPN=|LAC=|CS=1|CPC=10|CC=|CPNI=0|PCNA=|TPNA=|CGN=|TGNA=|TFN=ST-1,CCDR-8,CCDR-12,CCSR-14,bevt-2,DISC-3,END-7|LGID=0|CPN=|AAA_TAG=11111|CMX_EC=CR96791|CMX_EN=BasicTest|DIA_REQ=0|DIA_TIME=2009-11-17-19-26-0062|MMM_TAG=55555|ZZZ_TAG=777
SCA EDRs

EDR collection
The SCA can be configured to produce EDRs for use in post processing as required. The EDRs are saved to file in a location specified in the sca.config. EDRs are saved to file in tag/value pairs, separated by "|", in the following form:

```
tag1=value1|tag2=value2
```

Field formats
Each field in an EDR is in a particular format, summarised in this table.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date / Time</td>
<td>A time to the nearest second, in format YYYYMMDDHHmmSS where:</td>
</tr>
<tr>
<td></td>
<td>• YYYY = year (e.g. 2005)</td>
</tr>
<tr>
<td></td>
<td>• MM = month (e.g. 03 for March)</td>
</tr>
<tr>
<td></td>
<td>• DD = day of the month (e.g. 09)</td>
</tr>
<tr>
<td></td>
<td>• HH = hours (e.g. 13 for 1pm)</td>
</tr>
<tr>
<td></td>
<td>• mm = minutes (e.g. 32)</td>
</tr>
<tr>
<td></td>
<td>• SS = seconds (e.g. 00)</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> A request submitted on 16th November 2007 1 minute and 14 seconds after midnight</td>
</tr>
<tr>
<td></td>
<td>TIMESTAMP=20071116000114</td>
</tr>
<tr>
<td>Integer</td>
<td>A decimal number. Will never exceed a 32 bit number (11 digits), but is often shorter. Leading zeros will not normally be present.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> DURATION=30</td>
</tr>
<tr>
<td>String</td>
<td>String of characters. Can be any length. Should not contain the characters = or</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> REQUEST_URI=<a href="mailto:aname@Oracle.com">aname@Oracle.com</a>;SLEESK=1</td>
</tr>
</tbody>
</table>

Notes: Tags may not necessarily be in a fixed order, as the order of processing may vary from one call type to another.

EDR fields
Here are the SCA tags within an EDR.

**CDR_TYPE** (sca reason for record generation)

<table>
<thead>
<tr>
<th>Description</th>
<th>Type of EDR (that is, where and why it was generated).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Integer</td>
</tr>
<tr>
<td>Version</td>
<td>SCA 1.0</td>
</tr>
<tr>
<td>Notes</td>
<td>1 - Call attempt</td>
</tr>
<tr>
<td></td>
<td>2 - Success</td>
</tr>
<tr>
<td></td>
<td>3 - Error</td>
</tr>
<tr>
<td>Example</td>
<td>CDR_TYPE=2</td>
</tr>
</tbody>
</table>

Continued on next page
**SCA EDRs, Continued**

**EDR fields (continued)**

**DURATION (session duration)**
- **Description:** The session duration (in seconds).
- **Format:** Integer
- **Version:** SCA 1.0
- **Notes:** This tag value is only present where the CDR_TYPE is 2.
- **Example:** DURATION=30

**FROM (sip message from header)**
- **Description:** Contains the contents of the From header in the SIP message.
- **Format:** String
- **Version:** SCA 1.0
- **Example:** FROM=

**METHOD (sip method of request)**
- **Description:** The SIP method for the request that caused the EDR to be generated.
- **Format:** String
- **Version:** SCA 1.0
- **Example:** METHOD=

**REQUEST_URI (uri request content)**
- **Description:** Contains the contents of the URI request.
- **Format:** String
- **Version:** SCA 1.0
- **Example:** REQUEST_URI=aname@Oracle.com;SLEESK=1

**TIMESTAMP (creation timestamp of sca edr)**
- **Description:** The date and time when the EDR was generated.
- **Format:** Date
- **Version:** SCA 1.0
- **Example:** TIMESTAMP=20071116000114

**TO (sip to header content)**
- **Description:** Contains the contents of the To header in the SIP message.
- **Format:** String
- **Version:**
- **Example:** TO=
NP EDRs

Introduction
The NP Service Pack produces ACS and LCR EDRs, on the UAS, for use in post processing as required.

EDR collection
Each call processed can produce a single EDR, or multiple EDRs, depending on the type and outcome of the call. As a minimum, each call invokes either an ACS, or a CCS service, producing one ACS/CCS EDR for every termination attempt.

Where Least Cost Routing (LCR) is invoked, an LCR EDR is produced for every carrier selected for termination as part of the LCR service logic, in addition to the ACS/CCS EDR produced for every termination attempt. This means that the number of LCR EDRs and the number of ACS/CCS EDRs produced for the call is the same.

NP EDR files
The EDRs are saved to file in a location specified in the cdrIF.cfg configuration file. For details, see Configuring EDR Collection.

EDR files have the following names, depending on the EDR type.

<table>
<thead>
<tr>
<th>EDR Type</th>
<th>File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS</td>
<td>ACS_&lt;yyyymmddhhss&gt;_&lt;PID&gt;.cdr</td>
</tr>
<tr>
<td>LCR</td>
<td>LCR_&lt;yyyymmddhhss&gt;_.cdr</td>
</tr>
</tbody>
</table>

Where:
- yyyymmddhhss = the date and time when the file was opened, and
- PID = the Unix process ID of the service instance that created the EDR file.

EDR fields
EDRs are saved to file in tag/value pairs, separated by "|", each record separated by a Unix newline character, in the following form:

APP|tag1=value1|tag2=value2|etc

Note: The first field in the EDR is not a tag/value pair. It contains the name of the service (either ACS or CCS) that created the EDR. For more information about the format of UAS generated EDRs, refer to the Event Detail Record Guide.

For LDR EDRs, the row trailer (newline) and column separator can be configured in the cdrIF.cfg and may be different to the default described in this topic.

NP ACS tags
The following ACS tags are generated in the EDR.

Continued on next page
NP EDRs, Continued

NP ACS tags (continued)

- AIDL (see "AIDL (played announcement ID list)" on page 266)
- CA (on page 267)
- CAET (on page 267)
- CBAT (on page 267)
- CCET (on page 268)
- CCTS (on page 268)
- CGNA (on page 269)
- CGNN (on page 269)
- CID (on page 269)
- CLI
- CPC (on page 270)
- CPN (on page 270)
- CPNI (on page 270)
- CPNN (on page 270)
- CPPI (on page 271)
- CS (on page 272)
- CUST (on page 273)
- FATS (on page 273)
- HTS (on page 274)
- LAC (on page 274)
- LGID (on page 274)
- LPN (on page 274) (not applicable for NP)
- NOAT (on page 275)
- OA (on page 275)
- OCPI (on page 276)
- OTI (on page 276)
- PCNA (on page 276) (not applicable for NP)
- PTNA (on page 276) (not applicable for NP)
- RELC (on page 277)
- SK (on page 277)
- SN (on page 277)
- TCE (on page 277)
- TCS (on page 278)
- TFN (on page 279)
- TGNA (on page 281) (not applicable for NP)
- TN (on page 281)
- TPNI (on page 281) (not applicable for NP)

Note: These are standard tags, as described in ACS EDR tags (on page 266).

Continued on next page
Example ACS EDRs

Example 1
This example shows the output produced for a successful termination attempt EDR.

```
ACS|CID=61080|OA=0|OTI=0|CUST=1|SN=2125551212|TN=2125551212|
CGN=93933301|CLI=3135551212|SK=111|TCS=20051026133312|
TCE=20051026133317|LPN=|LAC=|CS=4|CPC=10|CC=|CPNI=0|PCNA=|TPNI=0|
PTNA=|CGNA=|TGNA=|TFN=ST-1,DDS-5,ATTP-6,ATTP-8,END-3|LGID=0|
CPN=atp|CAET=5|CCET=0.1|CA=2125551212|RELC=16|OCPI=|CPNN=1|
CGNN=4|CPI=1|NOAT=2|CBAT=1|FATS=0|CTTS=20051026133312|
HTS=20051026133312|AIDL=
```

Example 2
This example shows the output produced for a failed termination attempt EDR.

```
ACS|CID=61080|OA=0|OTI=0|CUST=1|SN=2125551212|TN=2125551212|
CGN=93933301|CLI=3135551212|SK=111|TCS=20051026133312|
TCE=20051026133312|LPN=|LAC=|CS=0|CPC=10|CC=|CPNI=0|PCNA=|
TPNI=0|PTNA=|CGNA=|TGNA=|TFN=ST-1,DDS-5,ATTP-6|LGID=0|CPN=atp|
CAET=0|CCET=0.0|CA=2125551212|RELC=25|OCPI=|CPNN=1|CGNN=4|
CPI=1|NOAT=1|CBAT=0|FATS=0|CTTS=20051026133312|
HTS=20051026133312|AIDL=
```

LCR EDR tags

The following standard ACS tags are generated in the LCR EDR.

- **CID** (on page 269)
- **CLI**
- **CPN** (on page 270)
- **CUST** (on page 273)
- **SK** (on page 277)
- **SN** (on page 277)

**Note:** These are standard tags, as described in **ACS EDR tags** (on page 266).

LCR EDRs do not contain any information on whether the termination attempt was successful or not – this data is stored in the ACS/CCS EDRs.

The LCR EDRs also contain the same CID field that can be used for correlation purposes with ACS/CCS EDRs and with other LCR EDRs.

The following LCR tags are unique to NP.

**CALLINGNOA** (noa of callingnum)

```
Description: The Nature of Address of the CALLINGNUM.
Format: A single digit
Version: NP 2.4.1.1
Example: CALLINGNOA=4
```

Continued on next page
**NP EDRs, Continued**

**LCR EDR tags (continued)**

**CALLINGNUM (lcr set calling number)**
- **Description:** The Calling Number set by the LCR service.
  - This is the number that the service uses as the calling number when an attempt is made to connect the call.
- **Format:** Integer. May be up to 32 digits long.
- **Version:** NP 2.4.1.1
- **Example:** CALLINGNUM=331111111111

**CARRIERNAME (carrier name)**
- **Description:** The name of the selected carrier.
- **Format:** String. May be up to 30 characters long.
- **Version:** NP 2.4.1.1
- **Example:** CARRIERNAME=Test

**CARRIERPOS (position of carrier name in hunt list)**
- **Description:** The position of the selected carrier in the hunt list.
- **Format:** Integer from 1 to 8.
- **Version:** NP 2.4.1.1
- **Example:** CARRIERPOS=2

**ORIGTRUNK (idp location number content)**
- **Description:** Contains contents of location number field from the IDP.
- **Format:** integer
- **Version:** NP 2.4.1.1
- **Example:** ORIGTRUNK=441473

**PID (unix process id)**
- **Description:** The Unix Process ID of the service instance.
- **Format:** Integer
- **Version:** NP 2.4.1.1
- **Example:** PID=4355

**PTI (product type id)**
- **Description:** The Product Type ID for the CCS account type of the calling subscriber.
- **Format:** Integer
- **Version:** NP 2.4.1.1
- **Example:** PTI=2

*Continued on next page*
NP EDRs, Continued

LCR EDR tags (continued)

ROUTEDEST (routing destination for call)
Description: The Routing Destination for the call.
Format: String. May be up to 64 characters long.
Version: NP 2.4.1.1
Example: ROUTEDEST=Destination_3

TIME (creation timestamp of lcr edr)
Description: The timestamp for when the LCR EDR was created.
Format: Date
Version: NP 2.4.1.1
Example: TIME=20051020154857

TNNOA (noa of terminating number)
Description: The Nature of Address of the Terminating Number.
Format: Integer. A single digit.
Version: Notes:
This should correspond to the first digit of the TNNUM field.
Example: TNNOA=4

TNNUM (lcr terminating number)
Description: The Terminating Number set by the LCR service (the number that the service attempts to connect to).
Format: Number. May be up to 32 digits long.
Version: Notes:
The first digit of the number provides an indication of the NOA.
Example: TNNUM=4ABCD12AB987654321

Example 1
This example shows the output produced for a successful termination attempt EDR.

Example 2
This example shows the output produced for a failed termination attempt EDR.
**Messaging Manager EDRs**

**EDR collection**
The xmsTrigger of Messaging Manager produces EDRs to be used in post processing as required.

**Diagram**
This diagram shows the components on the UAS that generate and migrate Messaging Manager EDRs.

![Diagram of Messaging Manager components]

**File name and location**
Messaging manager EDRs are saved to file:
- with the base filename specified by the filename parameter (in the format `<base filename><date and time>.cdr`)
- in the location specified by the destdir parameter (by default `/IN/service_packages/XMS/cdr/closed/``)

in the eserv.config.

**File format**
EDRs are saved to file in tag/value pairs, separated by "|", in the following form:
```
tag1=value1|tag2=value2
```

*Continued on next page*
Each field in an EDR is in a particular format, summarised in this table.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boolean</td>
<td>Value of 0 (untrue) or 1 (true).</td>
</tr>
<tr>
<td>Example:</td>
<td>DLVR=1</td>
</tr>
<tr>
<td>Date / Time</td>
<td>A time to the nearest second, in format YYYYMMDDHHMMSS where:</td>
</tr>
<tr>
<td></td>
<td>• YYYY = year (e.g. 2004)</td>
</tr>
<tr>
<td></td>
<td>• MM = month (e.g. 04 for March)</td>
</tr>
<tr>
<td></td>
<td>• DD = day of the month (e.g. 09)</td>
</tr>
<tr>
<td></td>
<td>• HH = hours (e.g. 13 for 1pm)</td>
</tr>
<tr>
<td></td>
<td>• mm = minutes (e.g. 32)</td>
</tr>
<tr>
<td></td>
<td>• SS = seconds (e.g. 00)</td>
</tr>
<tr>
<td>Example:</td>
<td>A message submitted on 16th May 2004 1 minute and 14 seconds after midnight DATE=20040516000114</td>
</tr>
<tr>
<td>Integer</td>
<td>A decimal number. Will never exceed a 32 bit number (11 digits), but is often shorter. Leading zeros will not normally be present.</td>
</tr>
<tr>
<td>Example:</td>
<td>ULEN=30</td>
</tr>
<tr>
<td>Network Number</td>
<td>A sequence of hexadecimal characters representing a phone number. Usually consists of only the characters 0 – 9, but can also contain A – F (representing characters such as # and *). Leading zeros will be present if required.</td>
</tr>
<tr>
<td>Example:</td>
<td>DADR=0020006449393471</td>
</tr>
<tr>
<td>String</td>
<td>String of characters. Can be any length. Should not contain the characters = or</td>
</tr>
<tr>
<td>Example:</td>
<td>USRD=hello, whats up</td>
</tr>
</tbody>
</table>

Notes:
- Tags may not necessarily be in a fixed order, as the order of processing may vary from one call type to another.
- Some fields will not be present if the call does not reach the call state that produces them – for example, the call duration will not be present for calls which are not answered.

Continued on next page
Chapter 31   Commercial In Confidence

Messaging Manager EDRs, Continued

This topic describes the tags within an EDR. The EDR content can include the user payload (SMS text).

**MMX EDR tags**

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADAP</td>
<td></td>
<td>String, Date, Integer, Float, List</td>
<td>MMX 4.1</td>
<td>TAG=</td>
</tr>
<tr>
<td>ALPH</td>
<td>The alphabet name.</td>
<td>String</td>
<td></td>
<td>ALPH=GSM7Bit</td>
</tr>
<tr>
<td>APPA</td>
<td></td>
<td>String, Date, Integer, Float, List</td>
<td>MMX 4.1</td>
<td>TAG=</td>
</tr>
<tr>
<td>APPD</td>
<td></td>
<td>String, Date, Integer, Float, List</td>
<td>MMX 4.1</td>
<td>TAG=</td>
</tr>
<tr>
<td>APPR</td>
<td></td>
<td>String, Date, Integer, Float, List</td>
<td>MMX 4.1</td>
<td>TAG=</td>
</tr>
<tr>
<td>ASAD</td>
<td>The IP address of the originating ASP</td>
<td>String</td>
<td>MMX 3.1</td>
<td>ASAD=</td>
</tr>
</tbody>
</table>

Continued on next page
### MMX EDR tags (continued)

#### ASPDF (asp definition)

<table>
<thead>
<tr>
<th>Description:</th>
<th>The ASP definition. This can be used to derive the connection path using the config file. The tag will be added to EDRs for messages sent/relayed by MMX using EMI or SMPP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format:</td>
<td>String</td>
</tr>
<tr>
<td>Notes:</td>
<td>This tag will be logged in the following format:</td>
</tr>
<tr>
<td>Example:</td>
<td>ASPDF=ASPName.S.smcLoginId</td>
</tr>
</tbody>
</table>

Where:
- ASPName - The value of the ASPS.name entry in the config file. This entry in the config file identifies the ASP from which this messages originated.
- smcLoginId - The value of the corresponding ASPS.smcLogins.smcConnection.smcLoginId entry. This entry in the config file identifies the SMSC connection where the message was sent.

#### ASPID (inbound and outbound path)

<table>
<thead>
<tr>
<th>Description:</th>
<th>The inbound path and the outbound path.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format:</td>
<td>String</td>
</tr>
<tr>
<td>Notes:</td>
<td>Used twice</td>
</tr>
<tr>
<td>Example:</td>
<td>ASPID=</td>
</tr>
</tbody>
</table>

#### AXAD (ip connections from asp)

<table>
<thead>
<tr>
<th>Description:</th>
<th>This is used for IP connections from ASPs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format:</td>
<td>String</td>
</tr>
<tr>
<td>Notes:</td>
<td>It indicates the internet listen address used for the ASP connection.</td>
</tr>
<tr>
<td>Example:</td>
<td>AXAD=</td>
</tr>
</tbody>
</table>

#### BILLID

<table>
<thead>
<tr>
<th>Description:</th>
<th>The ..........</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format:</td>
<td>String, Date, Integer, Float, List</td>
</tr>
<tr>
<td>Version:</td>
<td>MMX 4.1</td>
</tr>
<tr>
<td>Example:</td>
<td>TAG=</td>
</tr>
</tbody>
</table>
### MMX EDR tags (continued)

**CCLS**
- **Description:** The ............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

**CHPY**
- **Description:** The ............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

**CT**
- **Description:** The ............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

**DADR (destination address)**
- **Description:** The Destination Address
- **Format:** Refer to *EDR address format* (on page 310).
- **Version:**
- **Example:** DADR=0020006449383471

**DATE (timestamp sms sent to mmx)**
- **Description:** The date and time at which the short message was submitted to MMX.
- **Format:** Date
- **Version:**
- **Example:** DATE=20080901041701

**DELTs (timestamp of delivery attempt)**
- **Description:** The delivery timestamp. The time of delivery attempt.
- **Format:** Date
- **Version:**
- **Example:** DELTS=20041214040046

Continued on next page
**MMX EDR tags (continued)**

**DIMSI (destination imsi)**
- **Description:** The destination IMSI.
- **Format:** String, Date, Integer, Float, List
- **Version:**
- **Notes:** Only included where MMX has attempted FDA. B party IMSI of FDA messages.
- **Example:** DIMSI=

**DISTS (timestamp of discard)**
- **Description:** Discard timestamp.
- **Format:** Date
- **Version:**
- **Notes:** Added if all delivery routes fail.
- **Example:** DISTS=20080901041706

**DLOC (terminating party location information)**
- **Description:** Specifies the terminating party location information.
- **Format:** String
- **Version:** MMX 2.2.7 and 3.1
- **Notes:** This value will be set in the following order:
  - Cell ID returned in the MAP_ATI response if available,
  - Default MSC ID from the eserv.conf parameter, “defaultTerminatingLocation”, or
  - A null value, if the Control Plan does not initiate a MAP-ATI for the called party.

**DLVR (message delivered flag)**
- **Description:** Message delivered.
- **Format:** Boolean
- **Version:**
- **Notes:**
  - 0 - not delivered
  - 1 - delivered
  - This is only present on EDRs for delivery receipt messages.
- **Example:** DLVR=1

**DPATH (delivery path)**
- **Description:** Path used for outbound delivery/submit attempt.
- **Format:** String
- **Version:** MMX 4.1
- **Example:** DPATH=SMPP_SME_SMPP1

*Continued on next page*
**Messaging Manager EDRs, Continued**

**MMX EDR tags (continued)**

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
<th>Format</th>
<th>Version</th>
<th>Notes</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRM</td>
<td>The</td>
<td>String, Date, Integer, Float, List</td>
<td>MMX 4.1</td>
<td>Service Centre Address of the configured destination SMSC. Included only when MAP delivery to the SMSC is attempted.</td>
<td>TAG=</td>
</tr>
<tr>
<td>DSCA</td>
<td>Destination Service Center Address.</td>
<td>String, Date, Integer, Float, List</td>
<td></td>
<td></td>
<td>DSCA=</td>
</tr>
<tr>
<td>DSCGT</td>
<td>Destination Global Title.</td>
<td>String</td>
<td></td>
<td>Global Title of the configured destination SMSC. Included only when MAP delivery to the SMSC is attempted.</td>
<td>DSCGT=</td>
</tr>
<tr>
<td>DSTL</td>
<td>Destination Global Title of FDA MSC.</td>
<td>String</td>
<td></td>
<td></td>
<td>DSTL=</td>
</tr>
<tr>
<td>EDELT</td>
<td>The</td>
<td>String, Date, Integer, Float, List</td>
<td>MMX 4.1</td>
<td></td>
<td>TAG=</td>
</tr>
<tr>
<td>ESN</td>
<td>Electronic Serial Number.</td>
<td>32 bit &quot;number&quot;, having a sub format of 14 bit manufacturer code and 18 bit serial number.</td>
<td></td>
<td>Used with AMPS, TDMA and CDMA phones in the United States, equivalent to IMEI numbers used by all GSM phones.</td>
<td></td>
</tr>
</tbody>
</table>

*Continued on next page*
GPRS (general packet radio service)
Description: General Packet Radio Service supported indicator.
Format: Integer
Version:
Notes: 0 = GPRS not supported
1 = GPRS supported
Example: GPRS=0

IPRI (incoming protocol value)
Description: Incoming priority value.
Format: String
Version:
Example: IPRI=PriorityNormal

IPRN (incoming protocol name)
Description: Incoming protocol name.
Format: String
Version:
Notes: • For failed transactions this may show SMPP/EMI
• For successful transactions this will show the actual protocol used SMPP
Example: IPRN=MAP

ITS (incoming tele service)
Description: Incoming tele-service
Format: String, Date, Integer, Float, List
Version:
Example: ITS=

MMC
Description: The ............
Format: String, Date, Integer, Float, List
Version: MMX 4.1
Example: TAG=
MMX EDR tags (continued)

MSCA (smsc address)
Description: SMSC Address
Format: Refer to EDR address format (on page 310).
Version: Notes: For an IS41 FDA delivery, the MSCA tag shows the MSC Address used for the actual delivery attempt.
Example: MSCA=

MSGD (message destination)
Description: Outbound/outgoing Message Destination
Format: Integer
Version: Notes:
0 – Short Message Entity, i.e. direct delivery to handset or ASP
1 – Message Centre
Example: MSGD=1

MSGR (message reference number)
Description: Message reference number
Format: Integer
Version: Example: MSGR=5

MTYP (message type)
Description: Incoming/Inbound Message Type
Format: Integer
Version: Notes:
0 - Submit
1 - Deliver
2 - Notify
3 - Command
4 - RouteInfo
Example: MTYP=1

NRQ (status report requested for message)
Description: Was a notification (status report) requested for this message?
Format: Boolean
Version: Notes:
0 = not requested
1 = requested
Example: NRQ=0

Continued on next page
MMX EDR tags (continued)

NRQD (emi with defined nrq)

Description:
Format: List
Notes: This is an EMI only field. If the incoming EMI message has a defined NRQ, then the following will be appended:
NRQD=<nrq>,<npid>
Note that npid may be "" if not present.
Example: NRQD=

OADR (originating address)

Description: Originating Address
Format: Refer to EDR address format (on page 310).
Version:
Example: OADR=0010006449393414

OAID (originating adapter id)

Description: Originating adapter ID
Format: String
Version:
Example: OAID=MA1

OCAU (acs cause value)

Description: Cause value returned by ACS on originating Call Model.
Format: String, Date, Integer, Float, List
Version:
Example: OCAU=

OIMSI (originating imsi)

Description: Originating IMSI (if present).
Format: String
Version:
Example: OIMSI=

OIPA (originating ip address)

Description: Originating IP address
Format: String
Version:
Example: OIPA=

Continued on next page
Messaging Manager EDRs, Continued

**MMX EDR tags (continued)**

**OLOC (originating party location information)**
- **Description:** Specifies the originating party location information.
- **Format:** String
- **Version:** MMX 2.2.7 and 3.1
- **Notes:** This value will be set in the following order:
  - Cell ID returned in the MAP_ATI response if available,
  - MSC ID from the SCCP layer if available, or
  - Default MSC ID from the eserv.conf parameter, "defaultOriginatingLocation".

**OPRI (outgoing priority)**
- **Description:** Outgoing priority
- **Format:** String
- **Version:**
- **Example:** OPRI=PriorityNormal

**OPRN (output protocol name)**
- **Description:** Output protocol name
- **Format:** String
- **Version:**
- **Example:** OPRN=SMPP

**OPRT (originating port number)**
- **Description:** Originating port number
- **Format:** String, Date, Integer, Float, List
- **Version:**
- **Example:** OPRT=

**OSA**
- **Description:** The .............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

**OTS (outgoing tele service)**
- **Description:** Outgoing tele-service
- **Format:** String, Date, Integer, Float, List
- **Version:**
- **Example:** OTS=

*Continued on next page*
Messaging Manager EDRs, Continued

**MMX EDR tags (continued)**

**PERR (protocol specific error)**
- **Description:** Protocol specific error or abort
- **Format:** String
- **Version:**
- **Notes:**
  - MAP: error-34, pabort-2, uabort-1
  - SMPP: ESME_RSYSERR, ESME_RINVMSGID
  - EMI: error-03, error-24
  - IS41: error-0x81, error-0x8c
- **Example:** PERR=

**PRES (terminating adapter response)**
- **Description:** Terminating adapter response, whether the SMS was successfully delivered or not. (was - adapter response to Submit)
- **Format:** Integer
- **Version:**
- **Notes:**
  - 1 – Success
  - 2 – Failed
  - 3 – Rejected
- **Example:** PRES=1

**PRID (protocol identifier)**
- **Description:** Protocol Identifier. Provides any protocol specific information in an incoming message.
- **Format:** Integer
- **Version:**
- **Example:** PRID=1

**RECN**
- **Description:** The ............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

**RECT**
- **Description:** The ............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

*Continued on next page*
**Messaging Manager EDRs, Continued**

**MMX EDR tags** (continued)

**RESL (submit result)**
- **Description:** Submit Result. The response given to the A-party.
- **Format:** Integer
- **Version:**
- **Notes:**
  - 0 – Success
  - 1 – Transient Failure
  - 2 – Permanent Failure
  - 3 – Abort
- **Example:** RESL=0

**RRR**
- **Description:** The ............
- **Format:** String, Date, Integer, Float, List
- **Version:** MMX 4.1
- **Example:** TAG=

**SCA (service center address)**
- **Description:** Service Center Address.
- **Format:** Refer to *EDR address format* (on page 310).
- **Version:**
- **Notes:** The value will be the same as either MSCA or DSCA depending on the message type.
- **Example:** SCA=0010013094219300

**SCRID (screening rule id)**
- **Description:** The screening rule ID in the EDR which identifies the filtering rule of the message.
- **Format:** Integer
- **Version:**
- **Example:** SCRID=21

**SEGN (message segment number)**
- **Description:** The message was message segment \( n \) of a potentially segmented message.
- **Format:** Integer
- **Version:**
- **Notes:** This is logged irrespective of segmentation or not of the message.
- **Example:** SEGN=0

*Continued on next page*
Messaging Manager EDRs, Continued

MMX EDR tags (continued)

SEGR (concatenated message reference)
Description: Concatenated message reference
Format: String, Date, Integer, Float, List
Version: 
Example: SEGR=

SEGT (total message segments)
Description: The total number of message segments.
Format: Integer
Version: 
Notes: This is logged irrespective of segmentation or not of the message.
Example: SEGT=0

SRCL (source location)
Description: SourceLocation Information, i.e. VMSC address for MAP/IS-41.
Format: String, Date, Integer, Float, List
Version: 
Notes: E.164 of sending VMSC
Example: SRCL=00001310:9

SRQ
Description: The ............
Format: String, Date, Integer, Float, List
Version: MMX 4.1
Example: TAG=

SSAD (ip of originating smsc)
Description: The IP address of originating SMSC
Format: String, Date, Integer, Float, List
Version: 
Example: SSAD=

SSRID (screening sub-rule id)
Description: The screening sub-rule ID in the EDR which identifies the sub-rule that filters the message.
Format: Integer
Version: 
Example: SSRID=1

Continued on next page
Messaging Manager EDRs, Continued

MMX EDR tags (continued)

SSTN (smpp service type)

**Description:** The SMPP service type
**Format:** String, Date, Integer, Float, List
**Version:**
**Example:** SSTN=

STRR (status report request)

**Description:** Status Report Request.
**Format:** Integer
**Version:**
**Notes:**
- 0 - no report requested
- 1 - handset/asp request (for its own purposes)
- 2 - requested by MMX (ACS), for billing purposes.
- 3 - requested by SME and MMX.
**Example:** STRR=0

SUBJ

**Description:** The ............
**Format:** String, Date, Integer, Float, List
**Version:** MMX 4.1
**Example:** TAG=

SUB_STATUS (subscriber status)

**Description:** The subscriber status.
**Format:** Integer
**Version:**
**Notes:**
- 0 - subscriber information not retrieved
- 1 - unknown subscriber
- 2 - error
- 3 - active
- 4 - cancelled
**Example:** SUB_STATUS=0

SV

**Description:** The ............
**Format:** String, Date, Integer, Float, List
**Version:** MMX 4.1
**Example:** TAG=

Continued on next page
**MMX EDR tags (continued)**

**TAID (terminating adapter id)**
- **Description:** Terminating adapter ID.
- **Format:** String
- **Version:**
- **Example:** TAID=SMPP1

**TCAU (acs terminate cause value)**
- **Description:** Cause value returned by ACS on terminating Call Model
- **Format:** Integer
- **Version:**
- **Example:** TCAU=

**THRD (throttled flag)**
- **Description:** 1 if message is throttled, otherwise tag is absent.
- **Format:** Integer
- **Version:**
- **Example:** THRD=1

**TLEN (length of user data in characters)**
- **Description:** Length of the User Data (i.e. message) in characters.
- **Format:** Integer
- **Version:**
- **Example:** TLEN=12

**TYPE (type of edr)**
- **Description:** Type of EDR; i.e. where and why it was generated.
- **Format:** Integer
- **Version:**
- **Notes:** 1 - MO/MT Short messages
- **Example:** TYPE=1

**ULEN (length of user data)**
- **Description:** Length of the User Data (i.e. message) in octets (bytes).
- **Format:** Integer
- **Version:**
- **Example:** ULEN=11

*Continued on next page*
MMX EDR tags (continued)

USRD (user data)
Description: Contains the user data.
Format: See notes
Version: 
Notes: If MMX:
• can parse the user data into the UTF-8 alphabet, then the corresponding UTF-8 string will be displayed.
  In this case, the ULEN field denotes the number of bytes, which may differ from the number of contained alphabetic characters.
• cannot convert the user data into a UTF-8, then the output will be displayed as a hex, using 00-FF to denote the content of each byte. In this case, ULEN will exactly match the number of bytes represented in the USRD field output.
Any control characters, if found, are converted as follows:
• \n, \r, \f converted to ' ' (space)
• | converted to |
Example: USRD=Hello, whats up

VASID
Description: The ............
Format: String, Date, Integer, Float, List
Version: MMX 4.1
Example: TAG=

VP (validity period)
Description: Validity Period.
The time period in seconds during which the originator considers the short message to be valid.
Format: Integer
Version: 
Notes: If this field is set to 0, then there is no time limit.
Example: VP=0

Multiple field occurrences
Every delivery attempt will write the fields OPRN, TAID, MSCA, OADR, DADR, SRCL, OPRI, MSGD, STRR and PRES to the EDR.
If there is at least one attempt, the fields MSCA, OADR, DADR, SRCL, MSGD and STRR get written twice.
• Once when the incoming call is passed to MMX, and
• Once when termination is attempted.
The fields are not necessarily the same though, as MMX/ACS can change the values. However, MSCA and SRCL are not present for all protocols.

Continued on next page
Messaging Manager EDRs, Continued

Example EDR 1
Here is an example MMX EDR. It is an 7-bit GSM text message from 6449393414 to 6449393471 (MAP to SMPP). The message was normal priority, successfully delivered, unsegmented, with no delivery receipt requested.

```
TYPE=1|DATE=20080901041701|IPRN=MAP|OAID=MAP1|MSCA=0040015114406267 |OADR=0010006449393414|DADR=0020006449383471|IPRI=PriorityNormal|MTYP=0|MSGD=1|SRCL=00001310:9|MSGR=0|USRD=Test
Message|ALPH=GSM7Bit|ULEN=11|TLEN=12|PRID=0|STRR=0|VP=0|NRQ=0|SEGN=0|SEGT=0|DELTS=2004121400046|OPRN=SMPP|TAID=SMPP1|MSCA=0040015114406267 |OADR=0010006449393414|DADR=0020006449393471|OPRI=PriorityNormal|MSGD=1|PRES=1|SRCL=00001310:9|STRR=0|RESL=0
```

Example EDR 2
This example EDR is a message from 6449393414 to 6449393471 (IS-41 to IS-41). The message was emergency priority GSM 7-bit text of "hello, how are you", successfully delivered, unsegmented, with no delivery receipt requested.

```
TYPE=1|DATE=20060901041701|IPRN=IS41|OAID=CDMA1|MSCA=0040015114406267 |OADR=0010006449393414|DADR=0020006449393471|IPRI=PriorityEmergency|MTYP=0|MSGD=1|SRCL=00001310:9|MSGR=5|USRD=hello, how are you|ALPH=GSM7Bit|ULEN=33|TLEN=18|PRID=1|STRR=0|VP=0|NRQ=0|SEGN=0|SEGT=0|DELTS=2004121400046|OPRN=IS41|TAID=CDMA1|MSCA=0040015114406267 |OADR=0010006449393414|DADR=0020006449393471|OPRI=PriorityEmergency|MSGD=0|PRES=1|SRCL=00001310:9|STRR=0|RESL=0
```

Example EDR 3
Here is an example EDR of a failed delivery receipt or a prior successful message. The delivery receipt failed because of a numberRules misconfiguration in Messaging Manager Navigator.

The call was an IS-41 to IS-41 delivery receipt from 6449393471 to 6449393414. The message was emergency priority GSM 7-bit text of "hello world.

```
TYPE=1|DATE=20060901041701|IPRN=IS41|OAID=CDMA1|MSCA=0040015114406267 |OADR=0010006449393414|DADR=0020006449393471|IPRI=PriorityEmergency|MTYP=1|DLVR=1|MSGD=0|SRCL=00001310:9|MSGR=5|USRD=hello world.|ALPH=GSM7Bit|ULEN=11|TLEN=12|PRID=1|STRR=0|VP=0|NRQ=0|SEGN=0|SEGT=0|DELTS=2004121400046|OPRN=IS41|TAID=CDMA1|MSCA=0040015114406267 |OADR=0010006449393414|DADR=0020006449393471|OPRI=PriorityEmergency|MSGD=0|PRES=1|SRCL=00001310:9|STRR=0|RESL=1
```
Several EDR tags contain addresses. These tags include:

- MSCA
- OADR
- DADR

All addresses are specified using the following format:

(TON) (NPI) (Address Digits)

This table describes the components in the EDR Addresses.

<table>
<thead>
<tr>
<th>Component</th>
<th>Explanation</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TON</td>
<td>The Type of Number value indicator. Where:</td>
<td>000 - 006</td>
</tr>
<tr>
<td></td>
<td>• 000 = unknown</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 001 = international</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 002 = national</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 003 = network_specific</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 004 = subscriber_number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 005 = alphanumeric</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 006 = abbreviated</td>
<td></td>
</tr>
<tr>
<td>NPI</td>
<td>The Number Plan Indicator value for the prefix. Where:</td>
<td>000 - 001, 003 - 004, 006, 008 - 010, 013 - 014, 018</td>
</tr>
<tr>
<td></td>
<td>• 000 = unknown</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 001 = ISDN (E.163/E.164)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 003 = Data (X.121)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 004 = Telex (F.69)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 006 = Land mobile (E.212)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 008 = National</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 009 = Private</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 010 = ERMES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 013 = Point Code &amp; subscriber number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 014 = Internet (IP)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 018 = WAP</td>
<td></td>
</tr>
</tbody>
</table>

Address Digits  Addresses used include SMSC, Originating, Destination Address and Source Location Information.

Example -MSCA= 00000148500000007

TON = 000 (unknown), NPI = 001 (isdn), Address digits = 48500000007

Note: Unless normalised otherwise, the EDR shows the TON and NPI as they are set in the incoming message. According to GSM specification (ETSI TS 100 901 V7.3.0).
Appendix

Overview

This appendix contains the following topics.

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# Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>Authentication, Authorisation, and Accounting. Specified in Diameter RFC 3588.</td>
</tr>
<tr>
<td>AC</td>
<td>Application Context. A parameter in a TCAP message which indicates what protocol is conveyed. May indicate MAP, CAMEL, INAP, etc. Also usually specifies the particular version of the conveyed protocol, e.g. which CAMEL Phase.</td>
</tr>
<tr>
<td>ACS</td>
<td>Advanced Control Services configuration platform.</td>
</tr>
<tr>
<td>ANI</td>
<td>Automatic Number Identification - Term used in the USA by long distance carriers for CLI.</td>
</tr>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
</tbody>
</table>
| ASP  | • Application Service Provider, or  
|      | • Application Server Process. An IP based instance of an AS. An ASP implements a SCTP connection between 2 platforms. |
| ATI  | Any Time Interrogation - this process is used on a GSM network to interrogate the HLR for location and or subscriber information. |
| BE   | Billing Engine |
| BFT  | Billing Failure Treatment - the process that is applied if the system has lost all connections to a billing engine. It allows for limited continuation of call processing functions, if configured. |
| C7   | See SS7. |
| CAMEL| Customized Applications for Mobile network Enhanced Logic  
|      | This is a 3GPP (Third Generation Partnership Project) initiative to extend traditional IN services found in fixed networks into mobile networks. The architecture is similar to that of traditional IN, in that the control functions and switching functions are remote. Unlike the fixed IN environment, in mobile networks the subscriber may roam into another PLMN (Public Land Mobile Network), consequently the controlling function must interact with a switching function in a foreign network. CAMEL specifies the agreed information flows that may be passed between these networks. |
| CC   | Country Code. Prefix identifying the country for a numeric international address. |
| CCA  | Credit-Control-Answer, used in Diameter by the credit-control server to acknowledge a Credit-Control-Request (CCR) from the credit-control client. |
| CCR  | Credit-Control-Request, used in Diameter by the credit-control client to request credit authorization from the credit-control server. |
| CCS  | 1) Charging Control Services (or Prepaid Charging) component.  
<p>|      | 2) Common Channel Signalling. A signalling system used in telephone networks that separates signalling information from user data. |
| <strong>CDMA</strong> | Code Division Multiple Access is a method for describing physical radio channels. Data intended for a specific channel is modulated with that channel's code. These are typically pseudo-random in nature, and possess favourable correlation properties to ensure physical channels are not confused with one another. |
| <strong>CDR</strong> | Call Detail Record |
| Note: The industry standard for CDR is EDR (Event Detail Record). Over time EDR will replace CDR in the Oracle documentation. |
| <strong>CID</strong> | Call Instance Data |
| <strong>CLI</strong> | Calling Line Identification - the telephone number of the caller. Also referred to as ANI. |
| <strong>Connection</strong> | Transport level link between two peers, providing for multiple sessions. |
| <strong>CORBA</strong> | Common Object Request Broker Architecture. It is a framework that provides interoperability between objects built in different programming languages, running on different physical machines perhaps on different networks. It specifies an Interface Definition Language, and API that allows client / server interaction with the ORB. |
| <strong>DB</strong> | Database |
| <strong>Diameter</strong> | A feature rich AAA protocol. Utilises SCTP and TCP transports. |
| <strong>DP</strong> | Detection Point |
| <strong>DRA</strong> | Destination Routing Address. The parameter in the INAP Connect operation, sent from ACS to the SSP. This is the number the SSP is instructed to connect to. |
| <strong>DTMF</strong> | Dual Tone Multi-Frequency - system used by touch tone telephones where one high and one low frequency, or tone, is assigned to each touch tone button on the phone. |
| <strong>EDR</strong> | Event Detail Record |
| Note: Previously CDR. The industry standard for CDR is EDR (Event Detail Record). Over time EDR will replace CDR in the Oracle documentation. |
| <strong>EMI</strong> | Exchange Message Interface protocol |
| <strong>ESN</strong> | Electronic Serial Number - a 32bit number uniquely identifying the mobile station equipment. |
| <strong>ETSI</strong> | European Telecommunications Standards Institute |
| <strong>FDA</strong> | First Delivery Attempt - the delivery of a short message directly to the SME rather than relaying it via the MC. |
| <strong>FOX</strong> | Fast OSA eXtensions. A TCP/IP billing protocol intended for use with external vendors. Based on OSA, it fills in functional gaps missing in OSA, and defines &quot;combined&quot; OSA operations to increase platform throughput. Uses a non-CORBA transport layer in order to provide enhanced fail-over and connection redundancy. |
| <strong>GPRS</strong> | General Packet Radio Service - employed to connect mobile cellular users to PDN (Public Data Network- for example the Internet). |
| <strong>GSM</strong> | Global System for Mobile communication. It is a second generation cellular telecommunication system. Unlike first generation systems, GSM is digital and thus introduced greater enhancements such as security, capacity, quality and the ability to support integrated services. |
| <strong>GUI</strong> | Graphical User Interface |
| <strong>GVNS</strong> | Global Virtual Numbering Scheme - When multiple VPNs are in use by a customer, the capability to route calls between these VPNs requires a numbering scheme that uses destination addresses based on a customer id and extension number. These GVNS addresses can then be interpreted to provide inter VPN operation. |
| <strong>HLR</strong> | The Home Location Register is a database within the HPLMN (Home Public Land Mobile Network). It provides routing information for MT calls and SMS. It is also responsible for the maintenance of user subscription information. This is distributed to the relevant VLR, or SGSN (Serving GPRS Support Node) through the attach process and mobility management procedures such as Location Area and Routing Area updates. |
| <strong>HPLMN</strong> | Home PLMN |
| <strong>HTML</strong> | HyperText Markup Language, a small application of SGML used on the World Wide Web. It defines a very simple class of report-style documents, with section headings, paragraphs, lists, tables, and illustrations, with a few informational and presentational items, and some hypertext and multimedia. |
| <strong>Hunting</strong> | A terminating call feature where a subscriber may request a list of alternate destination addresses. If their mobile station is not attached, or does not answer a call, then the service logic should attempt to reach the supplied alternate destinations in sequence. |
| <strong>IDP</strong> | INAP message: Initial DP (Initial Detection Point) |
| <strong>IMSI</strong> | International Mobile Subscriber Identifier. A unique identifier allocated to each mobile subscriber in a GSM and UMTS network. It consists of a MCC (Mobile Country Code), a MNC (Mobile Network Code) and a MSIN (Mobile Station Identification Number). The IMSI is returned by the HLR query (SRI-SM) when doing FDA. This tells the MSC exactly who the subscriber is that the message is to be sent to. |
| <strong>IN</strong> | Intelligent Network |
| <strong>INAP</strong> | Intelligent Network Application Part - a protocol offering real time communication between IN elements. |
| <strong>Initial DP</strong> | Initial Detection Point - INAP Operation. This is the operation that is sent when the switch reaches a trigger detection point. |</p>
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
</table>
| IP      | 1) Internet Protocol  
          2) Intelligent Peripheral - a box that is able to play announcements |
<p>| <strong>IP address</strong> | Internet Protocol Address - network address of a card on a computer |
| IS-41   | Interim Standard 41 is a signaling protocol used in cellular telecommunications systems. It deals with the signalling between the MSC and other network elements for the purpose of handovers and roaming etc. |
| ISDN    | Integrated Services Digital Network - set of protocols for connecting ISDN stations. |
| ISUP    | ISDN User Part - part of the SS7 protocol layer and used in the setting up, management, and release of trunks that carry voice and data between calling and called parties. |
| ITU     | International Telecommunication Union |
| IVR     | Interactive Voice Response - systems that provide information in the form of recorded messages over telephone lines in response to user input in the form of spoken words or, more commonly, DTMF signalling. |
| MAP     | Mobile Application Part - a protocol which enables real time communication between nodes in a mobile cellular network. A typical usage of the protocol would be for the transfer of location information from the VLR to the HLR. |
| MC      | Message Centre. Also known as SMSC. |
| MCC     | Mobile Country Code. In the location information context, this is padded to three digits with leading zeros. Refer to ITU E.212 (&quot;Land Mobile Numbering Plan&quot;) documentation for a list of codes. |
| MID     | Measurement ID - used in Number Portability, counts the occurrences of an error. |
| MMX     | Messaging Manager. |
| MNC     | Mobile Network Code. The part of an international address following the mobile country code (MCC), or at the start of a national format address. This specifies the mobile network code, i.e. the operator owning the address. In the location information context, this is padded to two digits with a leading zero. Refer to ITU E.212 (&quot;Land Mobile Numbering Plan&quot;) documentation for a list of codes. |
| MNP     | Mobile Number Portability |
| MO      | Mobile Originated |
| MS      | Mobile Station |
| MSC     | Mobile Switching Centre. Also known as a switch. |
| MSIN    | Mobile Station Identification Number. |
| MSISDN  | Mobile Station ISDN number. Uniquely defines the mobile station as an ISDN terminal. It consists of three parts; the country code (CC), the national destination code (NDC) and the subscriber number (SN). |</p>
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>Mobile Terminated</td>
</tr>
<tr>
<td>MTP</td>
<td>Message Transfer Part (part of the SS7 protocol stack).</td>
</tr>
<tr>
<td>NOA</td>
<td>Nature Of Address - a classification to determine in what realm (Local, National or International) a given phone number resides, for the purposes of routing and billing.</td>
</tr>
<tr>
<td>NP</td>
<td>Number Portability</td>
</tr>
<tr>
<td>NPI</td>
<td>Number Plan Indicator</td>
</tr>
<tr>
<td>Oracle</td>
<td>Oracle Corporation</td>
</tr>
<tr>
<td>ORB</td>
<td>Object Request Broker. Within an Object based communication system, an ORB keeps track of the actual addresses of all defined objects and thus is used to route traffic to the correct destination. The CORBA defines the ORB in a series of standards enabling different platforms to share common information.</td>
</tr>
<tr>
<td>OSA</td>
<td>Open Service Access provides a standard interface through which developers can design services that may interact with functions within the network.</td>
</tr>
<tr>
<td>PC</td>
<td>Point Code. The Point Code is the address of a switching point.</td>
</tr>
<tr>
<td>Peer</td>
<td>Remote machine, which for our purposes is capable of acting as a Diameter agent.</td>
</tr>
<tr>
<td>PI</td>
<td>Provisioning Interface - used for bulk database updates/configuration instead of GUI based configuration.</td>
</tr>
<tr>
<td>PIN</td>
<td>Personal Identification Number</td>
</tr>
<tr>
<td>PLMN</td>
<td>Public Land Mobile Network</td>
</tr>
</tbody>
</table>
| SCA          | 1) Service Centre Address  
|              | 2) Session Control Agent for Session Initiation Protocol (SIP) |
| SCCP         | Signalling Connection Control Part (part of the SS7 protocol stack). |
| SCP          | Service Control Point. Also known as UAS. |
| SCS          | Service Capability Server (OSA) |
| SCTP         | Stream Control Transmission Protocol. A transport-layer protocol analogous to the TCP or User Datagram Protocol (UDP). SCTP provides some similar services as TCP (reliable, in-sequence transport of messages with congestion control) but adds high availability. |
| Session      | Diameter exchange relating to a particular user or subscriber access to a provided service (i.e. a phone call). |
| SGSN         | Serving GPRS Support Node |
| **SIM** | Usually referred to as a SIM card, the Subscriber Identity Module is the user subscription to the mobile network. The SIM contains relevant information that enables access onto the subscribed operator’s network. |
| **SIP** | Session Initiation Protocol - a signalling protocol for Internet conferencing, telephony, event notification and instant messaging. (IETF) |
| **SLEE** | Service Logic Execution Environment |
| **SME** | Short Message Entity - an entity which may send or receive Short Messages. It may be located in a fixed network, a mobile, or an SMSC. |
| **SMP** | Service Management Platform (also referred to as USMS). |
| **SMPP** | Short Message Peer-to-Peer protocol |
| **SMS** | Short Message Service. |
| **SMSC** | Short Message Service Centre - stores and forwards a short message to the indicated destination subscriber number. |
| **SMS-MO** | Short Message Service Mobile Originated |
| **SMS-MT** | Short Message Service Mobile Terminating |
| **SN** | Service Number |
| **SRI** | Send Routing Information - This process is used on a GSM network to interrogate the HLR for subscriber routing information. |
| **SS7** | A Common Channel Signalling system used in many modern telecoms networks that provides a suite of protocols which enables circuit and non circuit related information to be routed about and between networks. The main protocols include MTP, SCCP and ISUP. |
| **SSP** | Service Switching Point |
| **Switching Point** | Anything that can send and receive C7 messages. |
| **TCAP** | Transaction Capabilities Application Part – layer in protocol stack, message protocol. |
| **TCP** | Transmission Control Protocol. This is a reliable octet streaming protocol used by the majority of applications on the Internet. It provides a connection-oriented, full-duplex, point to point service between hosts. |
| **TDMA** | Time Division Multiple Access - a communications technique that uses a common channel for communications among multiple users by allocating each a unique time slot. |
| **UAS** | Universal Application Server - hardware on which applications run. |
| **UBE** | Universal Billing Engine for Oracle Communications Network Control and Charging. |
| **URI** | Uniform Resource Identifier. |
| **USMS** | Universal Service Management System hardware platform. |
| **USSD** | Unstructured Supplementary Service Data - a feature in the GSM MAP protocol that can be used to provide subscriber functions such as Balance Query and Friends and Family Access. |
| **VLR** | Visitor Location Register - contains all subscriber data required for call handling and mobility management for mobile subscribers currently located in the area controlled by the VLR. |
| **VMSC** | Visited Mobile Switching Centre |
| **Voice Call** | The term “voice call” in this document is intended to denote any call controlled by CAMEL or INAP InitialDP. In practice this also includes fax calls, data-over-voice calls, and also includes 3G voice and video conference calls. |
| **VPN** | The Virtual Private Network product is an enhanced services capability enabling private network facilities across a public telephony network. |
| **WAP** | Wireless Application Protocol. A standard designed to allow the content of the Internet to be viewed on the screen of a mobile device such as mobile phones, personal organisers and pagers. It also overcomes the processing limitation of such devices. The information and services available are stripped down to their basic text format. |
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