This specification *describes the situation of the Proximus network and services. It will be subject to modifications for corrections or when the network or the services will be modified. Please take into account that modifications can appear at any moment. Therefore, the reader is requested to check regularly with the most recent list of available specifications that the document in one's possession is the latest version.*

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Advice of Charge (AOC)

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0. DOCUMENT HISTORY

Every update of this document results in a complete new version with new version number and release date.

Version	Date	Main or important changes since previous version
1.0	16 AUG 1999	…
1.1	31 OCT 2000	• **§ 1 and 2.** Introduction added • **§ 3.** AOC in EURO • Latest version of PICS
1.2	15 NOV 2001	• Removal of AOC in BEF
1.3	24 JAN 2003	• **§ 1.** Chapter added related to the 'Scope' • **§ 2.** Chapter added related to the 'References' • **§ 3.** Chapter added related to 'Symbols, definitions and abbreviations' • **§ 4.** Change title 'general description' in 'service description' • **§ 4.** Adapt description of AOC-S, -D & -E according to new behavior • **§ 4.** Paragraph related to applicability removed • **§ 5.** Small modification related to interaction with Terminal Portability • **§ 6.** Clarification about precision according to time-based AOC • **§ 7.** Amounts and coding adapted according to new 'time-based' behavior • **§ 8.** Limitations described in a separate chapter • **§ 9.** Chapter added related to influence on 16 kHz • **ANNEX 1.** New more detailed examples of DSS1 traces included

1. SCOPE

This document specifies the stage three (the protocol procedures and switching functions implemented to support a telecommunications service) of the Advice Of Charge (AOC) supplementary service for the Integrated Services Digital Network (ISDN) as provided by Proximus at the T reference point or coincident S and T reference point (as defined in ITU Recommendation I.411) by means of the Digital Subscriber Signalling System No. one (DSS1).

The specification is valid for both ISDN Basic Access (BA) and ISDN Primary Rate Access (PRA) and it is applicable to the Siemens 'EWSD V16B' - and 'Alcatel S12 Pack 8' - switching systems.

Some parts of the technical implementation may be different in the two used switching systems. In this case, specific switch-dependent comments are added or tables are used explaining the technical implementation for both systems.

2. REFERENCES

ETS 300 102-1	ETSI-specification: Integrated Services Digital Network (ISDN); User-network interface layer 3 Specifications for basic call control
EN 300 403-1	ETSI-specification: Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification
ITU-T I.411	ITU-recommendation: ISDN user-network interfaces - Reference configurations
ETS 300 178	ETSI-specification: Integrated Services Digital Network (ISDN); Advice Of Charge: charging information at call set-up time (AOC-S) supplementary service Service description
ETS 300 179	ETSI-specification: Integrated Services Digital Network (ISDN); Advice Of Charge: charging information during the call (AOC-D) supplementary service Service description
ETS 300 180	ETSI-specification: Integrated Services Digital Network (ISDN); Advice Of Charge: charging information at the end of the call (AOC-E) supplementary service Service description
ETS 300 181	ETSI-specification: Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service Functional capabilities and information flows
ETS 300 182-1	ETSI-specification: Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification
ETS 300 182-2	Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification

3. SYMBOLS, DEFINITIONS AND ABBREVIATIONS

For the purpose of the present document, the following symbols, abbreviations and definitions applies:

3.1. Abbreviations

AOC	Advice Of Charge
BA	Basic Access
DSS1	Digital Subscriber Signalling System No. one
ETS	European Telecommunication Standard
EWSD	Proximus Switching System of Siemens
ISDN	Integrated Services Digital Network
IN	Intelligent Network
ITU	International Telecommunication Union
PICS	Protocol Implementation Conformance Statement
PRA	Primary Rate Access
S12	Proximus Switching System of Alcatel

3.2. Definitions

P	Tariff period
$Np	Price with VAT of tariff per second
$Ns	Price with VAT of the set-up charge
$Nb	Price with VAT of the call attempt
$Sub	Price with VAT of the call up to this moment ($Ns + sum $Np)
$Tot	Total price with VAT of the call ($Ns + sum $Np)

4. SERVICE DESCRIPTION

Advice Of Charge (AOC) is a group of supplementary services for ISDN accesses, allowing the served user to be informed of usage based charging information. The AOC group of supplementary services includes the following :

- AOC-S : Charging information at call set-up time;
- AOC-D : Charging information during the call;
- AOC-E : Charging information at the end of a call.

More specific :

- The AOC-S supplementary service enables a user to receive information about the charging rates at call set-up time and also to receive further information during the call if there is a change of charging rates.
- The AOC-D supplementary service enables a user to receive information on the recorded charges for a call during the active phase of the call.
- The AOC-E supplementary service enables a user to receive information on the recorded charges for a call when the call is terminated.

The procedures according to the "Generic Functional protocol for the support of supplementary services" (ETS 300 196) will be used to convey the AOC information towards the customers premises; in particular via facility, i.e. in the CONNECT-msg, the FACILITY-msg, the DISCONNECT-msg or the RELEASE-msg.

For ISDN Advice Of Charge, options and clarifications to ETSI standard ETS 300 182 are described in PICS documents (Protocol Implementation Conformance Statement) delivered by the switch vendors. Cf. annexes 2 and 3.

The following charging information will be conveyed on the User-Network-Interface :

AOC-S

- AOC-S is sent during the set-up phase of the call. This will be in the CONNECT-message on Siemens EWSD-switches and as early as possible (before of after the ALERT-message) on Alcatel S12-switches. It will give information about the charged items 'basicCommunication' (P and $Np), 'callSetup' ($Ns) and optionally also 'callAttempt' ($Nb).
- It is also sent during the active phase of the call in case of tariff period modification, and gives information about the charged items 'basicCommunication' (P and $Np).
- And it is also sent during the clearing phase of the call in case of unsuccessful call (call attempt), and gives information about the charged item 'callAttempt' ($Nb).

AOC-D

- AOC-D is sent during the active phase of a call ($Sub).

  When a fixed connection cost ($Ns) is defined, then an AOC-D message (containing this connection cost) is sent immediately after the CONNECT-message.

  The transfer of the further AOC-D-messages is based on two threshold values:

  A timer threshold value, which is set to 5 seconds
  A cost threshold value, which is set to 0.05 €

Depending on the type of switching-system the sending of the next AOC-D messages can be different. These minor differences are clarified with the following examples:

Example 1:

Suppose a connection-cost ($Ns) of 0,02 EURO and tariff is lower than 0,01 € /sec.

Alcatel - S12
The first AOC-D message (containing the connection-cost of 0,02 €) is send immediately after the CONNECT-msg.
The following AOC-D messages are send each time the total cost has been increased with 0,05 €. So, at the moment the cost is 0,07 €, 0,12 €, 0,17 €, ...

Siemens - EWSD
The first AOC-D message (containing the connection-cost of 0,02 €) is send immediately after the CONNECT-msg.
The next AOC-D messages are send each time the total cost is equal to a multiple of the cost threshold value of 0,05 €. So, at the moment the cost is 0,05 €, 0,10 €, 0,15 €, ...

Example 2:

Suppose a connection-cost ($Ns) of 0,05 EURO and tariff is lower than 0,01 € /sec.

Alcatel - S12
The first AOC-D message (containing the connection-cost of 0,05 €) is send immediately after the CONNECT-msg.
The following AOC-D messages are send each time the total cost has been increased with 0,05 €. So, at the moment the cost is 0,10 €, 0,15 €, 0,20 €, ...

Siemens - EWSD
The first AOC-D message (containing the connection-cost of 0,05 €) is send immediately after the CONNECT-msg.

The next AOC-D messages are send each time the total cost is equal to a multiple of the cost threshold value of 0,05 €. So, at the moment the cost is 0,10 €, 0,15 €, 0,20 €, ...

AOC-E

- AOC-E is sent during the clearing phase of a call ($Tot) in the DISCONNECT or RELEASE message. It always has priority on AOC-D. That means that, since both are active, only AOC- E is sent during the clearing phase.

5. INTERACTION WITH TERMINAL PORTABILITY

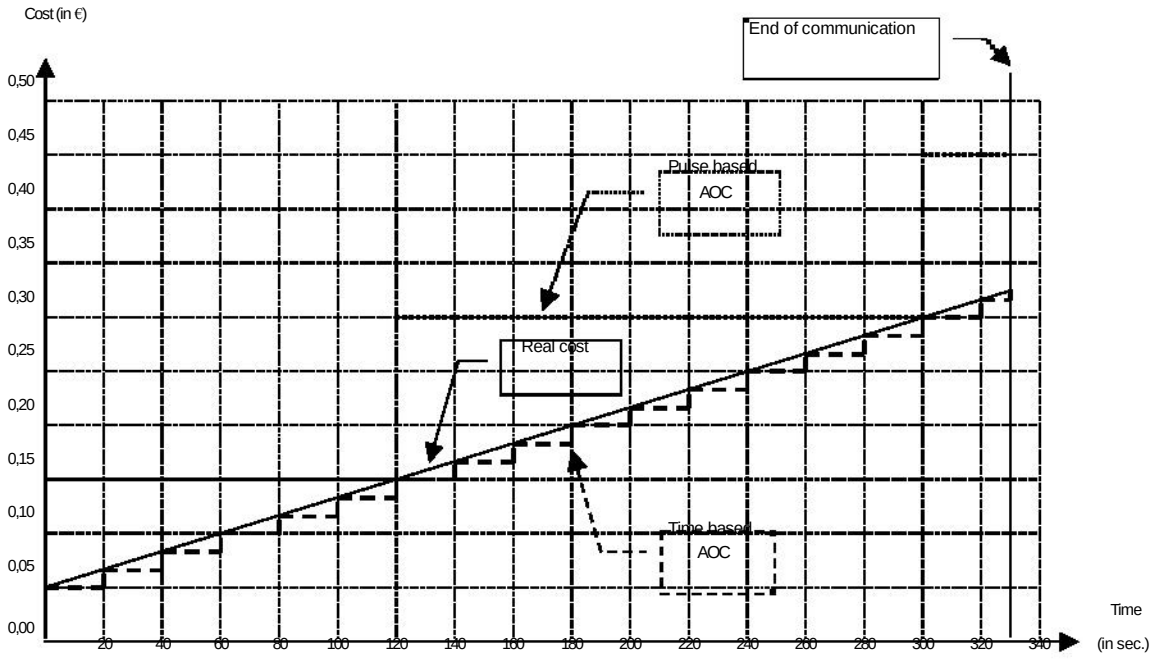
Siemens EWSD-switches: AOC-S information is sent in the SUSPEND-ACK msg, while AOC-D information will be sent in the RESUME-ACK msg. No AOC information is sent during the time the call is suspended.

Alcatel S12-switches: during the time the call is suspended by the calling party, no AOC information is sent. Just after resuming, AOC-D is sent, via a FACILITY-msg indicating the total amount of charge at this point in time.

Remark: This is only valid if the calling user suspended the call, not if the called user did suspend the call.

6. PRECISION OF THE CHARGING INFORMATION

The type of Advice Of Charge is no longer 'Pulse Based' but now it is **'Time Based'**. The difference between 'Pulse based AOC' and 'Time-based AOC' can be easily explained based on the next figure:



Pulse based AOC (previous type of AOC)

A value per pulse is defined (for instance 0,15 EURO)
A time period between the pulses is defined (for instance 180 sec.)
Time periods will be calculated in order to always be above the real cost at any time during the call (REASON: at the end of the call, no precise calculation was done. The latest amount sent during the call, was also considered as the total amount at the end of the call).

Time based AOC (current type of AOC)

A connection cost is defined (for instance 0,05 EURO)
A cost per second is defined (for instance 0,0008333 EURO per second)
During the call, an exact amount is sent whenever the communication cost (without call set-up) passes a certain amount (for example 0,05 EURO).
At the end of the call, the exact amount for the total communication cost is sent.

7. AMOUNTS AND CODING

AOC information is always expressed in EUR.

Currency String = "EUR"
Multiplier = One Hundredth

f.e. : 5,23 EUR => Currency String = "EUR"; currency amount = 523; Multiplier = One Hundredth.

The internal calculation of the tariff in the network is performed with at least 4 digits after the decimal point. But the value in the AOC is rounded to the higher or lower EUR cent.

f.e. : 5,2341 EUR => 5,23 EUR
5,235 EUR => 5,24 EUR 5,2361
EUR => 5,24 EUR

The information sent is the total amount (VAT incl.), so it is cumulative and not incremental. The information is derived directly from the Currency Tariffs, and is no longer based on the same tables as for analogue lines. The user will receive, if subscribed to the AOC-D supplementary service, consecutive AOC-D information containing a currency amount, which represents the real actual cost.

The tariff period P (length of time unit) in the AOC-S will be coded differently on both switching-system. On Alcatel S12-switches the value of period P will always be set to 1 with a scale of 'oneSecond' (P = 1 second). On Siemens EWSD-switches the value of period P will always be set to 6000 with a scale of 'oneHundredthSecond' (P = 60 seconds). The multiplier for the currency amount is equal for both switching-systems and is always set to 1/100.

Because a multiplier of 1/100 is used for the currency amount and the value of period P on the Alcatel S12-switches is set to one second it could be that on these switches in the AOC-S a currency value "00" will be included. This will not occur on EWSD-switches because on EWSD the value of period P is set to 60 seconds and so the cost per minute i.s.o. the cost per second is included in the AOC-S.

The ChargingType in the AOC-S will be 'continuous charging'.

In annex 1, you will find a few examples of DSS1 protocol traces for different types of calls.

8. LIMITATIONS

The AOC information sent is the best possible estimation for the basic call tariffs applied by Proximus. At any time of the call, the information will be normally not higher than the real charges.

Special cases

In addition to the basic call tariffs, an increasing number of discounts and special tariffs are offered by Proximus, on volume or subscription basis. These are not covered by any of the charging information services, i.e. the AOC information does not take these discounts and special tariffs into account.

Calls set-up from Proximus telephone lines but handled by another carrier will not be charged by Proximus. This includes 0800 calling card services, and carriers access via a carrier selection code (15xx or 16xx) or via carrier pre-selection.

For calls routed to a carrier via carrier selection or pre-selection, the "no charge info available" indication is given by the AOC service.

Additionally, more and more IN-based services will be developed with dynamic charging. This dynamic charging is also not covered.

9. INFLUENCE OF TIME-BASED AOC ON 16kHz-FEATURE USED ON ANALOG LINES

The feature 16 kHz used on analogue lines, will not be influenced by the ISDN Time-Based AOC.

The timing when pulses are sent on an analogue line, and the timing when AOC messages are sent on an ISDN line are completely independent.

10. ANNEX 1 SOME EXAMPLES OF DSS1 PROTOCOL TRACES

Important remark : The mentioned information in this ANNEX must explicitly be seen as examples. The contents may vary, depending on the used tariffs, supplementary service usage, etc. This means that other values or other items can also be sent.

10.1. Normal charged, successful call

10.1.1. Normal charged, successful call (on ALCATEL S12 switch)

```
Frame: 706 ------------------------------------------------
Date: 1/ 3/2003       13:50:49.767.232 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
29: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0A 81
     30 32 37 39 38 36 32 30 33 7D 02 91 81
              ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP        =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0A 00001010 Len= 10
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
             Called Number: 027986203
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 708 ------------------------------------------------
Date: 1/ 3/2003       13:50:50.076.864 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 02 18 01 89 27 01 E8
              ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
02 00000010 ===== CALL-PROC =====
18 00011000 ---------- CHI : Channel identification --------
```

```
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
             no extension

Frame: 710 ----------------------------------------------------
Date: 1/ 3/2003       13:50:52.801.728 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
100: 02 81 02 02 08 01 81 62 1C 5A 91 A1 57 02 01 28
     02 01 1F 30 4F 30 25 0A 01 00 A1 20 81 03 45 55 52
     A2 06 81 01 00 82 01 01 83 01 00 A4 06 81 01 01 82
     01 02 A5 06 81 01 01 82 01 02 30 12 0A 01 01 A2 0D
     81 03 45 55 52 A2 06 81 01 02 82 01 01 30 12 0A 01
     02 A2 0D 81 03 45 55 52 A2 06 81 01
     05 82 01 01
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           ====
1C 00011100 ---------- FAC : Facility ----------------------
5A 01011010 Len= 90
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
57 01010111 Length:
   0-------     Single octet length
   -1010111     Len= 87
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 28
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
4F 01001111      Length:
   0------- -     Single octet length
   1001111        Len= 79
30 00110000     Type: AOCS currency info
25 00100101       Length:
   0------- -      Single octet length
   0100101         Len= 37
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: basic communication (0)
A1 10100001      Type: duration currency
20 00100000        Length:
   0------- -       Single octet length
   0100000          Len= 32
81 10000001       Type: dCurrency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: dAmount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0-------           Single octet length
```

```
    -0000001            Len= 1
                      Value: 0
82 10000010         Type: multiplier
01 00000001           Length:
    0------- -          Single octet length
    0000001             Len= 1
01 00000001         Value: one hundredth (1)
83 10000011       Type: dChargingType
01 00000001           Length:
    0------- -         Single octet length
    0000001             Len= 1
00 00000000        Value: continuous charging (0)
A4 10100100       Type: dTime
06 00000110           Length:
    0------- -         Single octet length
    0000110             Len= 6
81 10000001        Type: length of time unit
01 00000001           Length:
    0------- -          Single octet length
    0000001             Len= 1
01                    Value: 1
82 10000010        Type: scale
01 00000001           Length:
    0------- -          Single octet length
    0000001             Len= 1
02 00000010         Value: one second (2)
A5 10100101       Type: dGranularity
06 00000110           Length:
    0------- -         Single octet length
    0000110             Len= 6
81 10000001        Type: length of time unit
01 00000001           Length:
    0------- -          Single octet length
    0000001             Len= 1
01                    Value: 1
82 10000010        Type: scale
01 00000001           Length:
    0------- -          Single octet length
    0000001             Len= 1
02 00000010         Value: one second (2)
30 00110000     Type: AOCS currency info
12 00010010       Length:
    0------- -      Single octet length
    0010010         Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
    0------- -       Single octet length
    0000001         Len= 1
01 00000001       Value: call attempt (1)
A2 10100010      Type: flat rate currency
0D 00001101        Length:
    0------- -       Single octet length
    0001101         Len= 13
81 10000001       Type: fRCurrency
03 00000011         Length:
    0------- -         Single octet length
    0000011           Len= 3
                    Value: EUR
A2 10100010       Type: fRAmount
06 00000110         Length:
    0------- -         Single octet length
    0000110           Len= 6
81 10000001       Type: currency amount
01 00000001         Length:
    0------- -         Single octet length
    0000001           Len= 1
                    Value: 2
82 10000010       Type: multiplier
01 00000001         Length:
    0------- -         Single octet length
    0000001           Len= 1
01 00000001       Value: one hundredth (1)
30 00110000     Type: AOCS currency info
12 00010010       Length:
    0------- -      Single octet length
    0010010         Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
```

```
   0-------          Single octet length
   -0000001          Len= 1
02 00000010        Value: call setup (2)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
   0------- -         Single octet length
   0001101            Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
   0------- -          Single octet length
   0000011             Len= 3
                     Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -          Single octet length
   0000110             Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
                        Value: 5
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
01 00000001          Value: one hundredth (1)

Frame: 712 ----------------------------------------------------
Date: 1/ 3/2003       13:50:52.908.992 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
12: 02 81 04 02 08 01 81 01 1E 02 82 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.

Frame: 714 ----------------------------------------------------
Date: 1/ 3/2003       13:50:53.139.904 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
27: 02 81 06 02 08 01 81 07 29 05 03 01 03 0D 28 4C
    0A 21 83 32 37 39 38 36 32 30 33
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN          =====
29 00101001 ---------- DTE : Date --------------------------
05 00000101 Len= 5
03 00000011 year: 3
01 00000001 month: 1
03 00000011 day: 3
0D 00001101 hour: 13
28 00101000 minute:40
4C 01001100 ---------- CNI : Connected number --------------
0A 00001010 Len= 10
21 00100001 octet 3 : 21
   ----0001 Numbering Plan : ISDN/Telephony (E.163/E.164)
   -010---- Type of number : national
   0------- extension bit = 0
83 10000011 octet 3a: 83
   -00----- Presentation indicator : presentation allowed
   ------11 Screening indicator : network provided
```

```
             Calling Number: 27986203

Frame: 716 ----------------------------------------------------
Date: 1/ 3/2003       13:50:53.210.432 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
42: 02 81 08 02 08 01 81 62 1C 20 91 A1 1D 02 01 2A
     02 01 21 30 15 A1 0D 81 03 45 55 52 A2 06 81 01
     05 82 01 01 82 01 00 83 01 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           ====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 2A
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
30 00110000 Type: specific currency
15 00010101      Length:
   0------- -     Single octet length
   0010101        Len= 21
A1 10100001     Type: recorded currency
0D 00001101       Length:
   0------- -      Single octet length
   0001101         Len= 13
81 10000001      Type: currency
03 00000011        Length:
   0------- -       Single octet length
   0000011          Len= 3
                   Value: EUR
A2 10100010      Type: amount
06 00000110        Length:
   0------- -       Single octet length
   0000110          Len= 6
81 10000001       Type: currency amount
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
                     Value: 5
82 10000010       Type: multiplier
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
01 00000001        Value: one hundredth (1)
82 10000010     Type: type of charging info
01 00000001       Length:
   0------- -      Single octet length
   0000001        Len= 1
00 00000000     Value: sub total (0)
83 10000011     Type: AOCD billing Id
01 00000001       Length:
   0------- -      Single octet length
   0000001        Len= 1
00 00000000     Value: normal charging (0)

Frame: 730 ----------------------------------------------------
Date: 1/ 3/2003       13:51:53.190.336 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
42: 02 81 0A 02 08 01 81 62 1C 20 91 A1 1D 02 01 2C
     02 01 21 30 15 A1 0D 81 03 45 55 52 A2 06 81 01
     0A 82 01 01 82 01 00 83 01 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
```

```
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC          =====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 2C
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
30 00110000 Type: specific currency
15 00010101       Length:
   0------- -      Single octet length
   0010101         Len= 21
A1 10100001      Type: recorded currency
0D 00001101        Length:
   0------- -       Single octet length
   0001101          Len= 13
81 10000001       Type: currency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
                     Value: 10
82 10000010        Type: multiplier
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
01 00000001         Value: one hundredth (1)
82 10000010      Type: type of charging info
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: sub total (0)
83 10000011      Type: AOCD billing Id
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: normal charging (0)

Frame: 746 ------------------------------------------------
Date: 1/ 3/2003       13:52:53.229.056 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
42: 02 81 0C 02 08 01 81 62 1C 20 91 A1 1D 02 01 2E
    02 01 21 30 15 A1 0D 81 03 45 55 52 A2 06 81 01
    0F 82 01 01 82 01 00 83 01 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC          =====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
```

```
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 2E
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
30 00110000 Type: specific currency
15 00010101       Length:
   0------- -      Single octet length
   0010101         Len= 21
A1 10100001      Type: recorded currency
0D 00001101        Length:
   0------- -       Single octet length
   0001101          Len= 13
81 10000001       Type: currency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                   Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                       Value: 15
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)
82 10000010      Type: type of charging info
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: sub total (0)
83 10000011      Type: AOCD billing Id
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: normal charging (0)

Frame: 750 ----------------------------------------------------
Date: 1/ 3/2003       13:53:09.828.032 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 0E 08 01 01 45 08 02 80 90
              ---------- Layer 3 Info ----------
              Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          =====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 752 ----------------------------------------------------
Date: 1/ 3/2003       13:53:10.188.032 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
41: 02 81 0E 04 08 01 81 4D 1C 1F 91 A1 1C 02 01 30
     02 01 23 30 14 30 12 A1 0D 81 03 45 55 52 A2 06
     81 01 10 82 01 01 82 01 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
```

```
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL          =====
1C 00011100 ---------- FAC : Facility ----------------------
1F 00011111 Len= 31
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1C 00011100 Length:
   0-------     Single octet length
   -0011100     Len= 28
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 30
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency
30 00110000 Type: AOCE currency info
14 00010100       Length:
   0------- -      Single octet length
   0010100         Len= 20
30 00110000      Type: specific currency
12 00010010        Length:
   0------- -       Single octet length
   0010010          Len= 18
A1 10100001       Type: recorded currency
0D 00001101         Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001        Type: currency
03 00000011          Length:
   0------- -         Single octet length
   0000011            Len= 3
                     Value: EUR
A2 10100010        Type: amount
06 00000110          Length:
   0------- -         Single octet length
   0000110           Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                      Value: 16
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)
82 10000010       Type: AOCE billing Id
01 00000001         Length:
   0------- -        Single octet length
   0000001          Len= 1
00 00000000       Value: normal charging (0)

Frame: 754 ----------------------------------------------------
Date: 1/ 3/2003       13:53:10.258.112 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 10 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      =====
```

10.1.2. Normal charged, successful call (on SIEMENS EWSD switch)

```
Frame: 562 ------------------------------------------------
Date: 1/ 3/2003       13:42:02.221.760 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
29: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0A 81
    30 32 37 39 38 36 32 30 33 7D 02 91 81
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP          =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0A 00001010 Len= 10
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
            Called Number: 027986203
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 564 ------------------------------------------------
Date: 1/ 3/2003       13:42:02.442.688 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 0D 18 01 89 27 01 E8
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
0D 00001101 ===== SETUP-ACK =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
```

```
             no extension

Frame: 566 ----------------------------------------------------
Date: 1/ 3/2003       13:42:02.765.824 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
12: 02 81 02 02 08 01 81 01 1E 02 84 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT        =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
84 10000100 octet 3 : 84
   -00----- Coding standard: CCITT standardized coding as described below
   ----0100 Location: public network serving the remote user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.

Frame: 568 ----------------------------------------------------
Date: 1/ 3/2003       13:43:59.190.176 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
120: 02 81 04 02 08 01 81 07 1C 5B 91 A1 58 02 01 0F
     02 01 1F 30 50 30 26 0A 01 00 A1 21 81 03 45 55 52
     A2 06 81 01 05 82 01 01 83 01 00 A4 07 81 02 17 70
     82 01 00 A5 06 81 01 01 82 01 02 30 12 0A 01 02 A2
     0D 81 03 45 55 52 A2 06 81 01 05 82 01 01 30 12 0A
     01 04 A2 0D 81 03 45 55 52 A2 06 81 01 00 82 01 01
     29 05 03 01 03 0D 21 4C 0A 21 83
     32 37 39 38 36 32 30 33
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN         =====
1C 00011100 ---------- FAC : Facility ----------------------
5B 01011011 Len= 91
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
58 01011000 Length:
   0-------     Single octet length
   -1011000     Len= 88
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0F
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
50 01010000       Length:
   0------- -      Single octet length
   1010000         Len= 80
30 00110000      Type: AOCS currency info
26 00100110        Length:
   0------- -       Single octet length
   0100110          Len= 38
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
00 00000000        Value: basic communication (0)
A1 10100001       Type: duration currency
21 00100001         Length:
   0------- -        Single octet length
   0100001           Len= 33
81 10000001        Type: dCurrency
03 00000011          Length:
   0------- -         Single octet length
   0000011           Len= 3
```

```
                    Value: EUR
A2 10100010         Type: dAmount
06 00000110           Length:
   0------- -           Single octet length
   0000110              Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
                      Value: 5
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
01 00000001           Value: one hundredth (1)
83 10000011         Type: dChargingType
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
00 00000000         Value: continuous charging (0)
A4 10100100         Type: dTime
07 00000111           Length:
   0------- -           Single octet length
   0000111              Len= 7
81 10000001         Type: length of time unit
02 00000010           Length:
   0------- -           Single octet length
   0000010              Len= 2
                      Value: 6000
82 10000010         Type: scale
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
00 00000000           Value: one hundredth second (0)
A5 10100101         Type: dGranularity
06 00000110           Length:
   0------- -           Single octet length
   0000110              Len= 6
81 10000001         Type: length of time unit
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
01                    Value: 1
82 10000010         Type: scale
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
02 00000010           Value: one second (2)
30 00110000       Type: AOCS currency info
12 00010010         Length:
   0------- -         Single octet length
   0010010            Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
02 00000010         Value: call setup (2)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
   0------- -         Single octet length
   0001101            Len= 13
81 10000001         Type: fRCurrency
03 00000011           Length:
   0------- -           Single octet length
   0000011              Len= 3
                      Value: EUR
A2 10100010         Type: fRAmount
06 00000110           Length:
   0------- -           Single octet length
   0000110              Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
                      Value: 5
82 10000010         Type: multiplier
01 00000001           Length:
   0-------             Single octet length
```

```
   -0000001            Len= 1
01 00000001          Value: one hundredth (1)
30 00110000      Type: AOCS currency info
12 00010010        Length:
   0------- -       Single octet length
   0010010          Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
04 00000100        Value: operation of supplementary serv (4)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
   0------- -         Single octet length
   0000011            Len= 3
                     Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                      Value: 0
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)
29 00101001   ---------- DTE : Date --------------------------
05 00000101   Len= 5
03 00000011   year: 3
01 00000001   month: 1
03 00000011   day: 3
0D 00001101   hour: 13
21 00100001   minute:33
4C 01001100   ---------- CNI : Connected number --------------
0A 00001010   Len= 10
21 00100001   octet 3 : 21
   ----0001 - Numbering Plan : ISDN/Telephony (E.163/E.164)
   010---- 0- Type of number : national
   ------     extension bit = 0
83 10000011   octet 3a: 83
   -00----- - Presentation indicator : presentation allowed
   -----11    Screening indicator : network provided
              Calling Number: 27986203

Frame: 570 ----------------------------------------------------
Date: 1/ 3/2003       13:43:59.221.760 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
39: 02 81 06 02 08 01 81 62 1C 1D 91 A1 1A 02 01 10
    02 01 21 30 12 A1 0D 81 03 45 55 52 A2 06 81 01
    05 82 01 01 82 01 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC          =====
1C 00011100 ---------- FAC : Facility ----------------------
1D 00011101 Len= 29
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1A 00011010 Length:
   0-------     Single octet length
   -0011010     Len= 26
02 00000010 invoke identifier tag
01 00000001 Len= 1
              InvokeID= 10
```

```
02  00000010 operation tag
01  00000001 length of operation tag is = 1
21  00100001 operation 33: AOCD Currency
30  00110000 Type: specific currency
12  00010010      Length:
    0------- -      Single octet length
    0010010         Len= 18
A1  10100001     Type: recorded currency
0D  00001101       Length:
    0------- -       Single octet length
    0001101          Len= 13
81  10000001      Type: currency
03  00000011        Length:
    0------- -        Single octet length
    0000011           Len= 3
                    Value: EUR
A2  10100010      Type: amount
06  00000110        Length:
    0------- -        Single octet length
    0000110           Len= 6
81  10000001       Type: currency amount
01  00000001         Length:
    0------- -         Single octet length
    0000001           Len= 1
                      Value: 5
82  10000010       Type: multiplier
01  00000001         Length:
    0------- -         Single octet length
    0000001           Len= 1
01  00000001        Value: one hundredth (1)
82  10000010     Type: type of charging info
01  00000001       Length:
    0------- -       Single octet length
    0000001          Len= 1
00  00000000      Value: sub total (0)

Frame: 586 ----------------------------------------------------
Date: 1/ 3/2003       13:44:59.221.568 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
39: 02 81 08 02 08 01 81 62 1C 1D 91 A1 1A 02 01 11
     02 01 21 30 12 A1 0D 81 03 45 55 52 A2 06 81 01
     0A 82 01 01 82 01 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08  00001000 PD for E-DSS.1/CCITT Q.931
01  00000001 Callref length: 1 type: one octet
81  10000001 Call Reference octet
    -0000001 Call Reference value          CR: 01
    1------- Message to CR-origination side
62  01100010 ===== FAC           ====
1C  00011100 ---------- FAC : Facility ----------------------
1D  00011101 Len= 29
91  10010001 octet 3 : 91
    ---10001 Service discriminator: supplementary service applications
A1  10100001 type: invoke
1A  00011010 Length:
    0-------     Single octet length
    -0011010     Len= 26
02  00000010 invoke identifier tag
01  00000001 Len= 1
              InvokeID= 11
02  00000010 operation tag
01  00000001 length of operation tag is = 1
21  00100001 operation 33: AOCD Currency
30  00110000 Type: specific currency
12  00010010      Length:
    0------- -      Single octet length
    0010010         Len= 18
A1  10100001     Type: recorded currency
0D  00001101       Length:
    0------- -       Single octet length
    0001101          Len= 13
81  10000001      Type: currency
03  00000011        Length:
    0------- -        Single octet length
    0000011           Len= 3
                    Value: EUR
```

```
A2 10100010       Type: amount
06 00000110         Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
                      Value: 10
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
01 00000001          Value: one hundredth (1)
82 10000010      Type: type of charging info
01 00000001        Length:
   0------- -        Single octet length
   0000001           Len= 1
00 00000000       Value: sub total (0)

Frame: 602 ----------------------------------------------------
Date: 1/ 3/2003       13:45:59.244.864 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
39: 02 81 0A 02 08 01 81 62 1C 1D 91 A1 1A 02 01 12
     02 01 21 30 12 A1 0D 81 03 45 55 52 A2 06 81 01
     0F 82 01 01 82 01 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           ====
1C 00011100 ---------- FAC : Facility ----------------------
1D 00011101 Len= 29
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1A 00011010 Length:
   0-------     Single octet length
   -0011010     Len= 26
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 12
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
30 00110000 Type: specific currency
12 00010010       Length:
   0------- -       Single octet length
   0010010          Len= 18
A1 10100001      Type: recorded currency
0D 00001101        Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001       Type: currency
03 00000011         Length:
   0------- -         Single octet length
   0000011            Len= 3
                    Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
                      Value: 15
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
01 00000001          Value: one hundredth (1)
82 10000010      Type: type of charging info
01 00000001        Length:
```

```
   0-------         Single octet length
   -0000001         Len= 1
00 00000000       Value: sub total (0)

Frame: 610 ----------------------------------------------------
Date: 1/ 3/2003       13:46:21.439.552 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 0C 08 01 01 45 08 02 80 90
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          =====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 612 ----------------------------------------------------
Date: 1/ 3/2003       13:46:21.579.840 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
38: 02 81 0C 04 08 01 81 4D 1C 1C 91 A1 19 02 01 13
    02 01 23 30 11 30 0F A1 0D 81 03 45 55 52 A2 06
    81 01 10 82 01 01
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL          =====
1C 00011100 ---------- FAC : Facility ----------------------
1C 00011100 Len= 28
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
19 00011001 Length:
   0-------     Single octet length
   -0011001     Len= 25
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 13
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency
30 00110000 Type: AOCE currency info
11 00010001       Length:
   0------- -      Single octet length
   0010001         Len= 17
30 00110000      Type: specific currency
0F 00001111        Length:
   0------- -       Single octet length
   0001111          Len= 15
A1 10100001       Type: recorded currency
0D 00001101         Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001         Type: currency
03 00000011           Length:
   0------- -          Single octet length
   0000011             Len= 3
                     Value: EUR
A2 10100010         Type: amount
06 00000110           Length:
   0------- -          Single octet length
   0000110             Len= 6
81 10000001          Type: currency amount
01 00000001            Length:
```

```
   0-------            Single octet length
   -0000001            Len= 1
                      Value: 16
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)

Frame: 614 ------------------------------------------------
Date: 1/ 3/2003       13:46:21.649.216 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 0E 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      ====
```

10.2. Charged 'call attempt'

This case occurs, for instance, when the calling side calls a called party who does not answer the call.

10.2.1. Charged 'call attempt' (on ALCATEL S12 switch)

```
Frame: 49 -----------------------------------------------------
Date: 1/ 3/2003       10:56:51.505.280 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
29: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0A 81
     30 32 37 39 37 32 35 38 31 7D 02 91 81
              ---------- Layer 3 Info ----------
              Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP        =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0A 00001010 Len= 10
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
             Called Number: 027972581
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 51 -----------------------------------------------------
Date: 1/ 3/2003       10:56:51.808.960 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 02 18 01 89 27 01 E8
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
02 00000010 ===== CALL-PROC =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
```

```
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
             no extension

Frame: 58 ----------------------------------------------------
Date: 1/ 3/2003       10:56:52.768.448 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
100: 02 81 02 02 08 01 81 62 1C 5A 91 A1 57 02 01 02
     02 01 1F 30 4F 30 25 0A 01 00 A1 20 81 03 45 55 52
     A2 06 81 01 00 82 01 01 83 01 00 A4 06 81 01 01 82
     01 02 A5 06 81 01 01 82 01 02 30 12 0A 01 01 A2 0D
     81 03 45 55 52 A2 06 81 01 02 82 01 01 30 12 0A 01
     02 A2 0D 81 03 45 55 52 A2 06 81 01
     05 82 01 01
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC          =====
1C 00011100 ---------- FAC : Facility ----------------------
5A 01011010 Len= 90
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
57 01010111 Length:
   0-------     Single octet length
   -1010111     Len= 87
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 02
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
4F 01001111       Length:
   0------- -      Single octet length
   1001111         Len= 79
30 00110000      Type: AOCS currency info
25 00100101        Length:
   0------- -       Single octet length
   0100101          Len= 37
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
00 00000000        Value: basic communication (0)
A1 10100001       Type: duration currency
20 00100000         Length:
   0------- -        Single octet length
   0100000           Len= 32
81 10000001        Type: dCurrency
03 00000011          Length:
   0------- -         Single octet length
   0000011            Len= 3
                     Value: EUR
A2 10100010        Type: dAmount
06 00000110          Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                      Value: 0
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)
83 10000011        Type: dChargingType
01 00000001          Length:
```

```
    0-------           Single octet length
    -0000001           Len= 1
00  00000000         Value: continuous charging (0)
A4  10100100       Type: dTime
06  00000110         Length:
    0------- -         Single octet length
    0000110            Len= 6
81  10000001       Type: length of time unit
01  00000001         Length:
    0------- -          Single octet length
    0000001            Len= 1
01                     Value: 1
82 10000010        Type: scale
01 00000001          Length:
    0------- -          Single octet length
    0000001            Len= 1
02 00000010          Value: one second (2)
A5 10100101       Type: dGranularity
06 00000110         Length:
    0------- -         Single octet length
    0000110            Len= 6
81 10000001        Type: length of time unit
01 00000001          Length:
    0------- -          Single octet length
    0000001            Len= 1
01                     Value: 1
82 10000010        Type: scale
01 00000001          Length:
    0------- -          Single octet length
    0000001            Len= 1
02 00000010          Value: one second (2)
30 00110000     Type: AOCS currency info
12 00010010       Length:
    0------- -       Single octet length
    0010010          Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
    0------- -        Single octet length
    0000001          Len= 1
01 00000001       Value: call attempt (1)
A2 10100010      Type: flat rate currency
0D 00001101        Length:
    0------- -       Single octet length
    0001101          Len= 13
81 10000001       Type: fRCurrency
03 00000011         Length:
    0------- -         Single octet length
    0000011           Len= 3
                    Value: EUR
A2 10100010       Type: fRAmount
06 00000110         Length:
    0------- -         Single octet length
    0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
    0------- -          Single octet length
    0000001            Len= 1
                       Value: 2
82 10000010        Type: multiplier
01 00000001          Length:
    0------- -          Single octet length
    0000001            Len= 1
01 00000001         Value: one hundredth (1)
30 00110000     Type: AOCS currency info
12 00010010       Length:
    0------- -       Single octet length
    0010010          Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
    0------- -       Single octet length
    0000001          Len= 1
02 00000010       Value: call setup (2)
A2 10100010      Type: flat rate currency
0D 00001101        Length:
    0------- -       Single octet length
    0001101          Len= 13
81 10000001       Type: fRCurrency
03 00000011         Length:
```

```
   0-------           Single octet length
   -0000011           Len= 3
                    Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -          Single octet length
   0000110             Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
                      Value: 5
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -           Single octet length
   0000001              Len= 1
01 00000001          Value: one hundredth (1)

Frame: 60 -----------------------------------------------------
Date: 1/ 3/2003       10:56:52.875.200 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
12: 02 81 04 02 08 01 81 01 1E 02 82 88
              ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.

Frame: 62 -----------------------------------------------------
Date: 1/ 3/2003       10:56:59.160.960 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
-------------------------------------------------------------
12: 00 81 02 06 08 01 01 45 08 02 80 90
              ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          =====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 66 -----------------------------------------------------
Date: 1/ 3/2003       10:56:59.563.776 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
41: 02 81 06 04 08 01 81 4D 1C 1F 91 A1 1C 02 01 04
    02 01 23 30 14 30 12 A1 0D 81 03 45 55 52 A2 06
    81 01 02 82 01 01 82 01 00
              ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           =====
1C 00011100 ---------- FAC : Facility ----------------------
1F 00011111 Len= 31
```

```
91 10010001   octet 3 : 91
   ---10001   Service discriminator: supplementary service applications
A1 10100001   type: invoke
1C 00011100    Length:
   0------- -   Single octet length
   0011100      Len= 28
02 00000010   invoke identifier tag
01 00000001   Len= 1
              InvokeID= 04
02  00000010  operation tag
01  00000001  length of operation tag is = 1
23  00100011  operation 35: AOCE Currency
30  00110000   Type: AOCE currency info
14  00010100     Length:
   0------- -     Single octet length
   0010100        Len= 20
30  00110000    Type: specific currency
12  00010010      Length:
   0------- -      Single octet length
   0010010         Len= 18
A1  10100001     Type: recorded currency
0D  00001101       Length:
   0------- -       Single octet length
   0001101          Len= 13
81  10000001      Type: currency
03  00000011        Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0------- -         Single octet length
   0000001            Len= 1
                      Value: 2
82 10000010        Type: multiplier
01 00000001          Length:
   0------- -         Single octet length
   0000001            Len= 1
01 00000001         Value: one hundredth (1)
82 10000010      Type: AOCE billing Id
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: normal charging (0)

Frame: 70 ------------------------------------------------------
Date: 1/ 3/2003       10:56:59.634.368 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
-------------------------------------------------------------
8: 00 81 04 08 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      ====
```

10.2.2. Charged 'call attempt' (on SIEMENS EWSD switch)

```
Frame: 542 ----------------------------------------------------
Date: 1/ 3/2003       13:40:51.909.632 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
29: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0A 81
    30 32 37 39 38 36 32 30 33 7D 02 91 81
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP          =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0A 00001010 Len= 10
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
            Called Number: 027986203
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension


Frame: 544 ----------------------------------------------------
Date: 1/ 3/2003       13:40:52.218.688 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 0D 18 01 89 27 01 E8
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
0D 00001101 ===== SETUP-ACK =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
```

```
   1------- Extension:
             no extension


Frame: 546 ----------------------------------------------------
Date: 1/ 3/2003       13:40:52.467.584 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
12: 02 81 02 02 08 01 81 01 1E 02 84 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         ====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
84 10000100 octet 3 : 84
   -00----- Coding standard: CCITT standardized coding as described below
   ----0100 Location: public network serving the remote user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.


Frame: 548 ----------------------------------------------------
Date: 1/ 3/2003       13:40:57.584.512 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 04 08 01 01 45 08 02 80 90
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          ====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing


Frame: 550 ----------------------------------------------------
Date: 1/ 3/2003       13:40:57.712.192 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
61: 02 81 04 04 08 01 81 4D 1C 33 91 A1 30 02 01 0E
    02 01 1F 30 28 30 12 0A 01 01 A2 0D 81 03 45 55 52
    A2 06 81 01 02 82 01 01 30 12 0A 01 04 A2 0D
    81 03 45 55 52 A2 06 81 01 00 82 01 01
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           ====
1C 00011100 ---------- FAC : Facility ----------------------
33 00110011 Len= 51
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
30 00110000 Length:
   0-------     Single octet length
   -0110000     Len= 48
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0E
02 00000010 operation tag
01 00000001 length of operation tag is = 1
```

```
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
28 00101000       Length:
   0------- -      Single octet length
   0101000         Len= 40
30 00110000      Type: AOCS currency info
12 00010010        Length:
   0------- -       Single octet length
   0010010          Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
01 00000001        Value: call attempt (1)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
   0------- -         Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -         Single octet length
   0000110           Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                      Value: 2
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)
30 00110000      Type: AOCS currency info
12 00010010        Length:
   0------- -       Single octet length
   0010010          Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
04 00000100        Value: operation of supplementary serv (4)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
   0------- -         Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -         Single octet length
   0000110           Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                      Value: 0
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)

Frame: 552 ----------------------------------------------------
Date: 1/ 3/2003       13:40:57.769.664 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 06 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
```

```
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      ====
```

10.3. Call 'free of charge'

This case occurs when calling a charge-free destination, e.g. a 0800 number.

10.3.1. Call 'free of charge' (on ALCATEL S12 switch)

```
Frame: 92 -----------------------------------------------------
Date: 1/ 3/2003       11:15:27.844.416 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
29: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0A 81
     30 38 30 30 35 31 30 32 37 7D 02 91 81
              ---------- Layer 3 Info ----------
              Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP        =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0A 00001010 Len= 10
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
             Called Number: 080051027
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 94 -----------------------------------------------------
Date: 1/ 3/2003       11:15:28.771.520 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 02 18 01 89 27 01 E8
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
02 00000010 ===== CALL-PROC =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
```

```
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
             no extension

Frame: 96 ------------------------------------------------
Date: 1/ 3/2003       11:15:33.162.432 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
42: 02 81 02 02 08 01 81 62 1C 20 91 A1 1D 02 01 06
    02 01 1F 30 15 30 05 0A 01 00 84 00 30 05 0A 01
    01 84 00 30 05 0A 01 02 84 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           =====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 06
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
15 00010101       Length:
   0------- -      Single octet length
   0010101         Len= 21
30 00110000      Type: AOCS currency info
05 00000101        Length:
   0------- -       Single octet length
   0000101          Len= 5
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
00 00000000        Value: basic communication (0)
84 10000100       Type: free of charge
00 00000000         Length:
   0------- -        Single octet length
   0000000           Len= 0
30 00110000      Type: AOCS currency info
05 00000101        Length:
   0------- -       Single octet length
   0000101          Len= 5
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
01 00000001        Value: call attempt (1)
84 10000100       Type: free of charge
00 00000000         Length:
   0------- -        Single octet length
   0000000           Len= 0
30 00110000      Type: AOCS currency info
05 00000101        Length:
   0------- -       Single octet length
   0000101          Len= 5
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
02 00000010        Value: call setup (2)
84 10000100       Type: free of charge
00 00000000         Length:
   0-------          Single octet length
```

```
   -0000000          Len= 0

Frame: 98 ------------------------------------------------------
Date: 1/ 3/2003       11:15:33.317.760 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
16: 02 81 04 02 08 01 81 01 1E 02 82 82 1E 02 82 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
82 10000010 octet 4 : 82
   -0000010 Progress description: destination address is non-ISDN
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.

Frame: 100 -----------------------------------------------------
Date: 1/ 3/2003       11:15:37.293.696 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
23: 02 81 06 02 08 01 81 07 1E 02 82 82 29 05 03 01
    03 0B 05 4C 02 00 A3
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN          =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
82 10000010 octet 4 : 82
   -0000010 Progress description: destination address is non-ISDN
29 00101001 ---------- DTE : Date --------------------------
05 00000101 Len= 5
03 00000011 year: 3
01 00000001 month: 1
03 00000011 day: 3
0B 00001011 hour: 11
05 00000101 minute: 5
4C 01001100 ---------- CNI : Connected number --------------
02 00000010 Len= 2
00 00000000 octet 3 : 00
   ----0000 Numbering Plan : unknown -
   000---- Type of number : unknown
   0------- extension bit = 0
A3 10100011 octet 3a: A3
   -01----- Presentation indicator : presentation restricted
   ------11 Screening indicator : network provided
             Calling Number:

Frame: 102 -----------------------------------------------------
Date: 1/ 3/2003       11:15:37.339.648 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
21: 02 81 08 02 08 01 81 62 1C 0B 91 A1 08 02 01 08
    02 01 21 81 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
```

```
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           =====
1C 00011100 ---------- FAC : Facility ----------------------
0B 00001011 Len= 11
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
08 00001000 Length:
   0-------     Single octet length
   -0001000     Len= 8
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 08
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
81 10000001 Type: free of charge
00 00000000       Length:
   0-------        Single octet length -
   0000000         Len= 0

Frame: 104 ----------------------------------------------------
Date: 1/ 3/2003       11:15:46.870.336 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 0A 08 01 01 45 08 02 80 90
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          =====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 106 ----------------------------------------------------
Date: 1/ 3/2003       11:15:47.191.808 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
23: 02 81 0A 04 08 01 81 4D 1C 0D 91 A1 0A 02 01 0A
    02 01 23 30 02 81 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           =====
1C 00011100 ---------- FAC : Facility ----------------------
0D 00001101 Len= 13
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
0A 00001010 Length:
   0-------     Single octet length
   -0001010     Len= 10
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0A
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency
30 00110000 Type: AOCE currency info
02 00000010       Length:
   0-------        Single octet length -
   0000010         Len= 2
```

```
81 10000001     Type: free of charge
00 00000000       Length:
   0-------        Single octet length
   -0000000        Len= 0

Frame: 108 ----------------------------------------------------
Date: 1/ 3/2003       11:15:47.254.784 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 0C 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      =====
```

10.3.2. Call 'free of charge' (on SIEMENS EWSD switch)

```
Frame: 514 ----------------------------------------------------
Date: 1/ 3/2003       13:39:49.913.728 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
29: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0A 81
     30 38 30 30 35 31 30 32 37 7D 02 91 81
              ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP         =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0A 00001010 Len= 10
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
             Called Number: 080051027
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 516 ----------------------------------------------------
Date: 1/ 3/2003       13:39:50.117.120 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 0D 18 01 89 27 01 E8
              ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
0D 00001101 ===== SETUP-ACK =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
             no extension
```

```
Frame: 518 ----------------------------------------------------
Date: 1/ 3/2003       13:39:50.575.168 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
8: 02 81 02 02 08 01 81 02
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
02 00000010 ===== CALL-PROC =====

Frame: 520 ----------------------------------------------------
Date: 1/ 3/2003       13:39:51.852.224 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
12: 02 81 04 02 08 01 81 01 1E 02 82 82
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
82 10000010 octet 4 : 82
   -0000010 Progress description: destination address is non-ISDN

Frame: 522 ----------------------------------------------------
Date: 1/ 3/2003       13:39:57.334.272 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
66: 02 81 06 02 08 01 81 07 1C 2D 91 A1 2A 02 01 0B
    02 01 1F 30 22 30 05 0A 01 00 84 00 30 05 0A 01 02
    84 00 30 12 0A 01 04 A2 0D 81 03 45 55 52 A2 06 81
    01 00 82 01 01 29 05 03 01 03 0D 1D 4C 02
    00 A3
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN          =====
1C 00011100 ---------- FAC : Facility ----------------------
2D 00101101 Len= 45
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
2A 00101010 Length:
   0-------     Single octet length
   -0101010     Len= 42
02 00000010 invoke identifier tag
01 00000001 Len= 1
              InvokeID= 0B
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
22 00100010       Length:
   0------- -      Single octet length
   0100010         Len= 34
30 00110000      Type: AOCS currency info
05 00000101        Length:
   0------- -       Single octet length
   0000101          Len= 5
0A 00001010       Type: charged item
01 00000001         Length:
   0-------           Single octet length
```

```
   -0000001          Len= 1
00 00000000        Value: basic communication (0)
84 10000100       Type: free of charge
00 00000000         Length:
   0------- -         Single octet length
   0000000           Len= 0
30 00110000     Type: AOCS currency info
05 00000101         Length:
   0------- -        Single octet length
   0000101           Len= 5
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -         Single octet length
   0000001           Len= 1
02 00000010        Value: call setup (2)
84 10000100       Type: free of charge
00 00000000         Length:
   0------- -         Single octet length
   0000000           Len= 0
30 00110000     Type: AOCS currency info
12 00010010         Length:
   0------- -        Single octet length
   0010010           Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -         Single octet length
   0000001           Len= 1
04 00000100        Value: operation of supplementary serv (4)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
   0------- -         Single octet length
   0001101           Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
   0------- -          Single octet length
   0000011            Len= 3
                     Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -          Single octet length
   0000110            Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -           Single octet length
   0000001             Len= 1
                      Value: 0
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -           Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)
29 00101001   ---------- DTE : Date --------------------------
05 00000101   Len= 5
03 00000011   year: 3
01 00000001   month: 1
03 00000011   day: 3
0D 00001101   hour: 13
1D 00011101   minute:29
4C 01001100   ---------- CNI : Connected number --------------
02 00000010   Len= 2
00 00000000   octet 3 : 00
   ----0000 - Numbering Plan : unknown
   000---- 0- Type of number : unknown
   ------     extension bit = 0
A3 10100011   octet 3a: A3
   -01----- - Presentation indicator : presentation restricted
   -----11    Screening indicator : network provided
              Calling Number:

Frame: 524 ----------------------------------------------------
Date: 1/ 3/2003       13:39:57.375.872 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
21: 02 81 08 02 08 01 81 62 1C 0B 91 A1 08 02 01 0C
    02 01 21 81 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
```

```
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           =====
1C 00011100 ---------- FAC : Facility ----------------------
0B 00001011 Len= 11
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
08 00001000 Length:
   0-------     Single octet length
   -0001000     Len= 8
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0C
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
81 10000001 Type: free of charge
00 00000000       Length:
   0-------        Single octet length -
   0000000         Len= 0

Frame: 528 ----------------------------------------------------
Date: 1/ 3/2003       13:40:14.551.360 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 0A 08 01 01 45 08 02 80 90
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          =====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 530 ----------------------------------------------------
Date: 1/ 3/2003       13:40:14.707.328 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
23: 02 81 0A 04 08 01 81 4D 1C 0D 91 A1 0A 02 01 0D
    02 01 23 30 02 81 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           =====
1C 00011100 ---------- FAC : Facility ----------------------
0D 00001101 Len= 13
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
0A 00001010 Length:
   0-------     Single octet length
   -0001010     Len= 10
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0D
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency
30 00110000 Type: AOCE currency info
02 00000010       Length:
   0-------        Single octet length -
   0000010         Len= 2
```

```
81 10000001     Type: free of charge
00 00000000       Length:
   0-------        Single octet length
   -0000000        Len= 0

Frame: 532 ----------------------------------------------------
Date: 1/ 3/2003       13:40:14.769.728 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 0C 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      =====
```

10.4. Call for which no charge info is available

This case occurs when a call is e.g. routed to another carrier via carrier selection or pre-selection.

10.4.1. Call for which no charge info is available (on ALCATEL S12 switch)

```
Frame: 264 ----------------------------------------------------
Date: 1/ 3/2003       11:35:24.315.264 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
33: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0E 81
    31 36 39 30 30 32 37 39 38 36 32 30 33 7D 02 91
    81
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP        =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0E 00001110 Len= 14
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
            Called Number: 1690027986203
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension


Frame: 266 ----------------------------------------------------
Date: 1/ 3/2003       11:35:24.621.888 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 02 18 01 89 27 01 E8
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
02 00000010 ===== CALL-PROC =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
```

```
   ----1---   exclusive: only the indicated channel is acceptable
   -----0-- - D-channel indicator : the channel identified is not the D-channel
   -----01    Interface : basic rate : B1 channel
27 00100111   ---------- NOID : Notification indicator -------
01 00000001   Len= 1
E8 11101000   octet 3 : E8
   -1101000   Notification description: diversion activated
   1-------   Extension:
              no extension


Frame: 268 ----------------------------------------------------
Date: 1/ 3/2003       11:35:27.681.216 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
42: 02 81 02 02 08 01 81 62 1C 20 91 A1 1D 02 01 0C
    02 01 1F 30 15 30 05 0A 01 00 85 00 30 05 0A 01
    01 85 00 30 05 0A 01 02 85 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC          =====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0C
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
15 00010101      Length:
   0------- -     Single octet length
   0010101        Len= 21
30 00110000     Type: AOCS currency info
05 00000101       Length:
   0------- -      Single octet length
   0000101         Len= 5
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: basic communication (0)
85 10000101      Type: currency info not available
00 00000000        Length:
   0------- -       Single octet length
   0000000          Len= 0
30 00110000     Type: AOCS currency info
05 00000101       Length:
   0------- -      Single octet length
   0000101         Len= 5
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
01 00000001       Value: call attempt (1)
85 10000101      Type: currency info not available
00 00000000        Length:
   0------- -       Single octet length
   0000000          Len= 0
30 00110000     Type: AOCS currency info
05 00000101       Length:
   0------- -      Single octet length
   0000101         Len= 5
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
```

```
02 00000010        Value: call setup (2)
85 10000101       Type: currency info not available
00 00000000         Length:
   0------- -         Single octet length
   0000000            Len= 0


Frame: 270 ----------------------------------------------------
Date: 1/ 3/2003       11:35:27.841.600 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
12: 02 81 04 02 08 01 81 01 1E 02 82 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
82 10000010 octet 3 : 82
   -00----- Coding standard: CCITT standardized coding as described below
   ----0010 Location: public network serving the local user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.


Frame: 272 ----------------------------------------------------
Date: 1/ 3/2003       11:35:33.565.952 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
27: 02 81 06 02 08 01 81 07 29 05 03 01 03 0B 19 4C
    0A 21 83 32 37 39 38 36 32 30 33
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN          =====
29 00101001 ---------- DTE : Date --------------------------
05 00000101 Len= 5
03 00000011 year: 3
01 00000001 month: 1
03 00000011 day: 3
0B 00001011 hour: 11
19 00011001 minute:25
4C 01001100 ---------- CNI : Connected number --------------
0A 00001010 Len= 10
21 00100001 octet 3 : 21
   ----0001 Numbering Plan : ISDN/Telephony (E.163/E.164)
   -010---- Type of number : national
   0------- extension bit = 0
83 10000011 octet 3a: 83
   -00----- Presentation indicator : presentation allowed
   ------11 Screening indicator : network provided
             Calling Number: 27986203


Frame: 274 ----------------------------------------------------
Date: 1/ 3/2003       11:35:33.611.776 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
21: 02 81 08 02 08 01 81 62 1C 0B 91 A1 08 02 01 0E
    02 01 21 05 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           =====
1C 00011100 ---------- FAC : Facility ----------------------
0B 00001011 Len= 11
```

```
91 10010001   octet 3 : 91
   ---10001   Service discriminator: supplementary service applications
A1 10100001   type: invoke
08 00001000    Length:
   0------- -   Single octet length
   0001000      Len= 8
02 00000010   invoke identifier tag
01 00000001   Len= 1
              InvokeID= 0E
02  00000010  operation tag
01  00000001  length of operation tag is = 1
21  00100001  operation 33: AOCD Currency
05  00000101   Type: charge not available
00  00000000     Length:
   0------- -     Single octet length
   0000000        Len= 0


Frame: 286 ----------------------------------------------------
Date: 1/ 3/2003       11:36:14.188.288 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 0A 08 01 01 45 08 02 80 90
              ---------- Layer 3 Info ----------
              Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          ====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing


Frame: 288 ----------------------------------------------------
Date: 1/ 3/2003       11:36:14.527.040 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
21: 02 81 0A 04 08 01 81 4D 1C 0B 91 A1 08 02 01 10
     02 01 23 05 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           ====
1C 00011100 ---------- FAC : Facility ----------------------
0B 00001011 Len= 11
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
08 00001000 Length:
   0-------     Single octet length
   -0001000     Len= 8
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 10
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency 05
00000101 Type: charge not available
00 00000000      Length:
   0-------       Single octet length -
   0000000        Len= 0


Frame: 290 ----------------------------------------------------
Date: 1/ 3/2003       11:36:14.585.856 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
```

```
------------------------------------------------------------
8: 00 81 04 0C 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      ====
```

10.4.2. Call for which no charge info is available (on SIEMENS EWSD switch)

```
Frame: 486 ------------------------------------------------
Date: 1/ 3/2003       13:38:21.153.728 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
33: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0E 81
    31 36 39 30 30 32 37 39 38 36 32 30 33 7D 02 91
    81
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP         =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0E 00001110 Len= 14
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
            Called Number: 1690027986203
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 488 ------------------------------------------------
Date: 1/ 3/2003       13:38:21.420.480 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 0D 18 01 89 27 01 E8
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
0D 00001101 ===== SETUP-ACK =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
```

```
             no extension

Frame: 490 ----------------------------------------------------
Date: 1/ 3/2003       13:38:22.319.296 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
12: 02 81 02 02 08 01 81 01 1E 02 84 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT        ====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
84 10000100 octet 3 : 84
   -00----- Coding standard: CCITT standardized coding as described below
   ----0100 Location: public network serving the remote user
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.

Frame: 494 ----------------------------------------------------
Date: 1/ 3/2003       13:38:33.450.880 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
61: 02 81 04 02 08 01 81 07 1C 20 91 A1 1D 02 01 33
    02 01 1F 30 15 30 05 0A 01 00 85 00 30 05 0A 01 02
    85 00 30 05 0A 01 04 85 00 29 05 03 01 03 0D
    1C 4C 0A 21 83 32 37 39 38 36 32 30 33
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN         ====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 33
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
15 00010101      Length:
   0------- -     Single octet length
   0010101        Len= 21
30 00110000     Type: AOCS currency info
05 00000101       Length:
   0------- -      Single octet length
   0000101         Len= 5
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: basic communication (0)
85 10000101      Type: currency info not available
00 00000000        Length:
   0------- -       Single octet length
   0000000          Len= 0
30 00110000     Type: AOCS currency info
05 00000101       Length:
   0------- -      Single octet length
   0000101         Len= 5
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
```

```
02 00000010        Value: call setup (2)
85 10000101       Type: currency info not available
00 00000000         Length:
   0------- -         Single octet length
   0000000            Len= 0
30 00110000      Type: AOCS currency info
05 00000101        Length:
   0------- -        Single octet length
   0000101           Len= 5
0A 00001010       Type: charged item
01 00000001         Length:
   0------- -         Single octet length
   0000001           Len= 1
04 00000100        Value: operation of supplementary serv (4)
85 10000101       Type: currency info not available
00 00000000         Length:
   0------- -         Single octet length
   0000000           Len= 0
29 00101001   ---------- DTE : Date --------------------------
05 00000101   Len= 5
03 00000011   year: 3
01 00000001   month: 1
03 00000011   day: 3
0D 00001101   hour: 13
1C 00011100   minute:28
4C 01001100   ---------- CNI : Connected number --------------
0A 00001010   Len= 10
21 00100001   octet 3 : 21
   ----0001 - Numbering Plan : ISDN/Telephony (E.163/E.164)
   010---- 0- Type of number : national
   ------     extension bit = 0
83 10000011   octet 3a: 83
   -00----- - Presentation indicator : presentation allowed
   -----11    Screening indicator : network provided
              Calling Number: 27986203

Frame: 496 ----------------------------------------------------
Date: 1/ 3/2003       13:38:33.492.736 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
21: 02 81 06 02 08 01 81 62 1C 0B 91 A1 08 02 01 34
     02 01 21 05 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           ====
1C 00011100 ---------- FAC : Facility ----------------------
0B 00001011 Len= 11
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
08 00001000 Length:
   0-------     Single octet length
   -0001000     Len= 8
02 00000010 invoke identifier tag
01 00000001 Len= 1
              InvokeID= 34
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency 05
00000101 Type: charge not available
00 00000000       Length:
   0-------        Single octet length -
   0000000         Len= 0

Frame: 500 ----------------------------------------------------
Date: 1/ 3/2003       13:38:49.230.592 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 08 08 01 01 45 08 02 80 90
              ---------- Layer 3 Info ----------
              Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
```

```
01 00000001   Call Reference octet
   -0000001   Call Reference value          CR: 01
   0-------   Message from CR-origination side
45 01000101   ===== DISC         =====
08 00001000   ---------- CAU : Cause -------------------------
02 00000010   Len= 2
80 10000000   octet 3 : 80
   ----0000 - Location: user
   00----- 1- Coding standard: CCITT standardized coding
   ------     Extension bit: no extension
90 10010000   octet 4 : 90
   -0010000   Cause #16 : normal call clearing

Frame: 502 ----------------------------------------------------
Date: 1/ 3/2003       13:38:49.387.008 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
21: 02 81 08 04 08 01 81 4D 1C 0B 91 A1 08 02 01 35
    02 01 23 05 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL          =====
1C 00011100 ---------- FAC : Facility ----------------------
0B 00001011 Len= 11
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
08 00001000 Length:
   0-------     Single octet length
   -0001000     Len= 8
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 35
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency 05
00000101 Type: charge not available
00 00000000      Length:
   0-------       Single octet length -
   0000000        Len= 0

Frame: 504 ----------------------------------------------------
Date: 1/ 3/2003       13:38:49.446.400 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 0A 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      =====
```

10.5. Call for which 'flat fee' charging is applicable

This case occurs when a call is set up to e.g. a pager.

10.5.1. Call for which 'flat fee' charging is applicable (on ALCATEL S12 switch)

```
Frame: 1002 ------------------------------------------------
Date: 1/ 3/2003       16:16:41.035.008 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
-------------------------------------------------------------
30: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0B 81
    30 34 35 38 33 32 34 37 36 31 7D 02 91 81
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP         =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0B 00001011 Len= 11
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
            Called Number: 0458324761
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 1004 ------------------------------------------------
Date: 1/ 3/2003       16:16:41.344.064 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
-------------------------------------------------------------
14: 02 81 00 02 08 01 81 02 18 01 89 27 01 E8
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
02 00000010 ===== CALL-PROC =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
```

```
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
             no extension

Frame: 1006 ----------------------------------------------------
Date: 1/ 3/2003       16:16:47.323.328 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
100: 02 81 02 02 08 01 81 62 1C 5A 91 A1 57 02 01 32
     02 01 1F 30 4F 30 25 0A 01 00 A1 20 81 03 45 55 52
     A2 06 81 01 00 82 01 01 83 01 00 A4 06 81 01 01 82
     01 02 A5 06 81 01 01 82 01 02 30 12 0A 01 01 A2 0D
     81 03 45 55 52 A2 06 81 01 02 82 01 01 30 12 0A 01
     02 A2 0D 81 03 45 55 52 A2 06 81 01
     32 82 01 01
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC          =====
1C 00011100 ---------- FAC : Facility ----------------------
5A 01011010 Len= 90
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
57 01010111 Length:
   0-------     Single octet length
   -1010111     Len= 87
02 00000010 invoke identifier tag
01 00000001 Len= 1
            InvokeID= 32
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
4F 01001111      Length:
   0------- -     Single octet length
   1001111        Len= 79
30 00110000     Type: AOCS currency info
25 00100101       Length:
   0------- -      Single octet length
   0100101         Len= 37
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: basic communication (0)
A1 10100001      Type: duration currency
20 00100000        Length:
   0------- -       Single octet length
   0100000          Len= 32
81 10000001       Type: dCurrency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: dAmount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
                     Value: 0
82 10000010        Type: multiplier
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
01 00000001         Value: one hundredth (1)
83 10000011       Type: dChargingType
```

```
01 00000001          Length:
   0------- -         Single octet length
   0000001            Len= 1
00 00000000         Value: continuous charging (0)
A4 10100100       Type: dTime
06 00000110         Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001       Type: length of time unit
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
01                   Value: 1
82 10000010       Type: scale
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
02 00000010         Value: one second (2)
A5 10100101       Type: dGranularity
06 00000110         Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001       Type: length of time unit
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
01                   Value: 1
82 10000010       Type: scale
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
02 00000010         Value: one second (2)
30 00110000     Type: AOCS currency info
12 00010010       Length:
   0------- -       Single octet length
   0010010          Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -        Single octet length
   0000001           Len= 1
01 00000001       Value: call attempt (1)
A2 10100010      Type: flat rate currency
0D 00001101        Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001       Type: fRCurrency
03 00000011         Length:
   0------- -         Single octet length
   0000011            Len= 3
                    Value: EUR
A2 10100010       Type: fRAmount
06 00000110         Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001       Type: currency amount
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
                    Value: 2
82 10000010       Type: multiplier
01 00000001         Length:
   0------- -         Single octet length
   0000001            Len= 1
01 00000001         Value: one hundredth (1)
30 00110000     Type: AOCS currency info
12 00010010       Length:
   0------- -       Single octet length
   0010010          Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -        Single octet length
   0000001           Len= 1
02 00000010       Value: call setup (2)
A2 10100010      Type: flat rate currency
0D 00001101        Length:
   0------- -        Single octet length
   0001101           Len= 13
81 10000001       Type: fRCurrency
```

```
03 00000011          Length:
   0------- -         Single octet length
   0000011            Len= 3
                    Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
   0------- -         Single octet length
   0000110            Len= 6
81 10000001         Type: currency amount
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
                       Value: 50
82 10000010         Type: multiplier
01 00000001           Length:
   0------- -          Single octet length
   0000001             Len= 1
01 00000001          Value: one hundredth (1)

Frame: 1008 ------------------------------------------------
Date: 1/ 3/2003       16:16:47.420.288 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
16: 02 81 04 02 08 01 81 01 1E 02 8A 81 1E 02 8A 88
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
8A 10001010 octet 3 : 8A
   -00----- Coding standard: CCITT standardized coding as described below
   ----1010 Location: network beyond interworking point
81 10000001 octet 4 : 81
   -0000001 Progress description: call is not end-to-end ISDN
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
8A 10001010 octet 3 : 8A
   -00----- Coding standard: CCITT standardized coding as described below
   ----1010 Location: network beyond interworking point
88 10001000 octet 4 : 88
   -0001000 Progress description: in-band info or appropiate pattern avail.

Frame: 1010 ------------------------------------------------
Date: 1/ 3/2003       16:16:53.005.056 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
23: 02 81 06 02 08 01 81 07 1E 02 8A 81 29 05 03 01
    03 10 06 4C 02 00 C3
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN          =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
8A 10001010 octet 3 : 8A
   -00----- Coding standard: CCITT standardized coding as described below
   ----1010 Location: network beyond interworking point
81 10000001 octet 4 : 81
   -0000001 Progress description: call is not end-to-end ISDN
29 00101001 ---------- DTE : Date --------------------------
05 00000101 Len= 5
03 00000011 year: 3
01 00000001 month: 1
03 00000011 day: 3
10 00010000 hour: 16
06 00000110 minute: 6
4C 01001100 ---------- CNI : Connected number --------------
02 00000010 Len= 2
00 00000000 octet 3 : 00
```

```
   ----0000   Numbering Plan : unknown
   -000----   Type of number : unknown
   0-------   extension bit = 0
C3 11000011   octet 3a: C3
   -10----- - Presentation indicator : number not available due to interworking
   -----11    Screening indicator : network provided
              Calling Number:

Frame: 1012 ----------------------------------------------------
Date: 1/ 3/2003       16:16:53.076.160 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
---------------------------------------------------------------
42: 02 81 08 02 08 01 81 62 1C 20 91 A1 1D 02 01 34
    02 01 21 30 15 A1 0D 81 03 45 55 52 A2 06 81 01
    32 82 01 01 82 01 00 83 01 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           =====
1C 00011100 ---------- FAC : Facility ----------------------
20 00100000 Len= 32
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1D 00011101 Length:
   0-------     Single octet length
   -0011101     Len= 29
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 34
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
30 00110000 Type: specific currency
15 00010101      Length:
   0------- -     Single octet length
   0010101        Len= 21
A1 10100001     Type: recorded currency
0D 00001101       Length:
   0------- -      Single octet length
   0001101         Len= 13
81 10000001      Type: currency
03 00000011        Length:
   0------- -       Single octet length
   0000011          Len= 3
                   Value: EUR
A2 10100010      Type: amount
06 00000110        Length:
   0------- -       Single octet length
   0000110          Len= 6
81 10000001       Type: currency amount
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
                     Value: 50
82 10000010       Type: multiplier
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
01 00000001        Value: one hundredth (1)
82 10000010     Type: type of charging info
01 00000001       Length:
   0------- -      Single octet length
   0000001         Len= 1
00 00000000      Value: sub total (0)
83 10000011     Type: AOCD billing Id
01 00000001       Length:
   0------- -      Single octet length
   0000001         Len= 1
00 00000000      Value: normal charging (0)

Frame: 1018 ----------------------------------------------------
Date: 1/ 3/2003       16:17:15.374.080 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
```

```
------------------------------------------------------------
12: 00 81 02 0A 08 01 01 45 08 02 80 90
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          =====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 1020 ------------------------------------------------
Date: 1/ 3/2003       16:17:15.728.896 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
41: 02 81 0A 04 08 01 81 4D 1C 1F 91 A1 1C 02 01 36
    02 01 23 30 14 30 12 A1 0D 81 03 45 55 52 A2 06
    81 01 32 82 01 01 82 01 00
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           =====
1C 00011100 ---------- FAC : Facility ----------------------
1F 00011111 Len= 31
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1C 00011100 Length:
   0-------     Single octet length
   -0011100     Len= 28
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 36
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency
30 00110000 Type: AOCE currency info
14 00010100      Length:
   0------- -     Single octet length
   0010100        Len= 20
30 00110000     Type: specific currency
12 00010010       Length:
   0------- -      Single octet length
   0010010         Len= 18
A1 10100001      Type: recorded currency
0D 00001101        Length:
   0------- -       Single octet length
   0001101          Len= 13
81 10000001       Type: currency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -        Single octet length
   0000110          Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
                     Value: 50
82 10000010        Type: multiplier
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
```

```
01 00000001          Value: one hundredth (1)
82 10000010       Type: AOCE billing Id
01 00000001         Length:
   0------- -        Single octet length
   0000001           Len= 1
00 00000000        Value: normal charging (0)

Frame: 1022 ------------------------------------------------
Date: 1/ 3/2003       16:17:15.800.064 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 0C 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      ====
```

10.5.2. Call for which 'flat fee' charging is applicable (on SIEMENS EWSD switch)

```
Frame: 444 ----------------------------------------------------
Date: 1/ 3/2003       13:34:12.533.952 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
30: 00 81 00 00 08 01 01 05 04 03 80 90 A3 70 0B 81
    30 34 35 38 33 32 34 37 36 31 7D 02 91 81
             ---------- Layer 3 Info ----------
            Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
05 00000101 ===== SETUP        =====
04 00000100 ---------- BC : Bearer capability --------------
03 00000011 Len= 3
80 10000000 octet 3 : 80
   ---00000 Information Transfer Capability: speech
   -00----- Coding Standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   ---10000 Information Transfer Rate: 64 kbit/s
   -00----- Transfer Mode : circuit mode
   1------- Extension bit: no extension
A3 10100011 octet 5 : A3
   ---00011 User information layer 1 protocol: G.711 A-law
   -01----- Layer 1 identifier
   1------- Extension bit: no extension
70 01110000 ---------- CDPN : Called party number ----------
0B 00001011 Len= 11
81 10000001 octet 3 : 81
   -000---- Type of number: unknown
   ----0001 Numbering plan: ISDN / Telephony numbering plan
            Called Number: 0458324761
7D 01111101 ---------- HLC : High layer compatibility ------
02 00000010 Len= 2
91 10010001 octet 3 : 91
   ------01 Presentation method: high layer protocol profile
   ---100-- Interpretation: first high layer characteristics used
   -00----- Coding standard: CCITT standardized coding as described below
   1------- extension: no extension
81 10000001 octet 4 : 81
   -0000001 High layer char. ID: telephony
   1------- extension: no extension

Frame: 446 ----------------------------------------------------
Date: 1/ 3/2003       13:34:12.801.536 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
14: 02 81 00 02 08 01 81 0D 18 01 89 27 01 E8
             ---------- Layer 3 Info ----------
            Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
0D 00001101 ===== SETUP-ACK =====
18 00011000 ---------- CHI : Channel identification --------
01 00000001 Len= 1
89 10001001 octet 3 : 89
   1------- not extended
   -0------ Interface Identifier present : interface implicitly identified
   --0----- Interface type : basic interface
   ---0---- Spare
   ----1--- exclusive: only the indicated channel is acceptable
   -----0-- D-channel indicator : the channel identified is not the D-channel
   ------01 Interface : basic rate : B1 channel
27 00100111 ---------- NOID : Notification indicator -------
01 00000001 Len= 1
E8 11101000 octet 3 : E8
   -1101000 Notification description: diversion activated
   1------- Extension:
            no extension
```

```
Frame: 448 ----------------------------------------------------
Date: 1/ 3/2003       13:34:17.185.920 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
12: 02 81 02 02 08 01 81 01 1E 02 8A 81
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
01 00000001 ===== ALERT         =====
1E 00011110 ---------- PI : Progress indicator -------------
02 00000010 Len= 2
8A 10001010 octet 3 : 8A
   -00----- Coding standard: CCITT standardized coding as described below
   ----1010 Location: network beyond interworking point
81 10000001 octet 4 : 81
   -0000001 Progress description: call is not end-to-end ISDN

Frame: 450 ----------------------------------------------------
Date: 1/ 3/2003       13:34:23.795.008 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
92: 02 81 04 02 08 01 81 07 1C 47 91 A1 44 02 01 08
    02 01 1F 30 3C 30 12 0A 01 00 A2 0D 81 03 45 55 52
    A2 06 81 01 00 82 01 01 30 12 0A 01 02 A2 0D 81 03
    45 55 52 A2 06 81 01 32 82 01 01 30 12 0A 01 04 A2
    0D 81 03 45 55 52 A2 06 81 01 00 82 01
    01 29 05 03 01 03 0D 17 4C 02 00 C3
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
07 00000111 ===== CONN          =====
1C 00011100 ---------- FAC : Facility ----------------------
47 01000111 Len= 71
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
44 01000100 Length:
   0-------     Single octet length
   -1000100     Len= 68
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 08
02 00000010 operation tag
01 00000001 length of operation tag is = 1
1F 00011111 operation 31: AOCS Currency
30 00110000 Type: AOCS currency info list
3C 00111100      Length:
   0------- -     Single octet length
   0111100        Len= 60
30 00110000     Type: AOCS currency info
12 00010010       Length:
   0------- -      Single octet length
   0010010         Len= 18
0A 00001010      Type: charged item
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: basic communication (0)
A2 10100010      Type: flat rate currency
0D 00001101        Length:
   0------- -       Single octet length
   0001101          Len= 13
81 10000001       Type: fRCurrency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: fRAmount
06 00000110         Length:
```

```
    0-------           Single octet length
    -0000110           Len= 6
81 10000001          Type: currency amount
01 00000001            Length:
    0------- -          Single octet length
    0000001            Len= 1
                       Value: 0
82 10000010          Type: multiplier
01 00000001            Length:
    0------- -          Single octet length
    0000001            Len= 1
01 00000001           Value: one hundredth (1)
30 00110000      Type: AOCS currency info
12 00010010        Length:
    0------- -       Single octet length
    0010010          Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
    0------- -        Single octet length
    0000001          Len= 1
02 00000010        Value: call setup (2)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
    0------- -        Single octet length
    0001101          Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
    0------- -         Single octet length
    0000011           Len= 3
                     Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
    0------- -         Single octet length
    0000110           Len= 6
81 10000001          Type: currency amount
01 00000001            Length:
    0------- -          Single octet length
    0000001            Len= 1
                       Value: 50
82 10000010          Type: multiplier
01 00000001            Length:
    0------- -          Single octet length
    0000001            Len= 1
01 00000001           Value: one hundredth (1)
30 00110000      Type: AOCS currency info
12 00010010        Length:
    0------- -       Single octet length
    0010010          Len= 18
0A 00001010       Type: charged item
01 00000001         Length:
    0------- -        Single octet length
    0000001          Len= 1
04 00000100        Value: operation of supplementary serv (4)
A2 10100010       Type: flat rate currency
0D 00001101         Length:
    0------- -        Single octet length
    0001101          Len= 13
81 10000001        Type: fRCurrency
03 00000011          Length:
    0------- -         Single octet length
    0000011           Len= 3
                     Value: EUR
A2 10100010        Type: fRAmount
06 00000110          Length:
    0------- -         Single octet length
    0000110           Len= 6
81 10000001          Type: currency amount
01 00000001            Length:
    0------- -          Single octet length
    0000001            Len= 1
                       Value: 0
82 10000010          Type: multiplier
01 00000001            Length:
    0------- -          Single octet length
    0000001            Len= 1
01 00000001           Value: one hundredth (1)
29 00101001    ---------- DTE : Date --------------------------
05 00000101    Len= 5
```

```
03  00000011   year: 3
01  00000001   month: 1
03  00000011   day: 3
0D  00001101   hour: 13
17  00010111   minute:23
4C  01001100   ---------- CNI : Connected number --------------
02  00000010   Len= 2
00  00000000 - octet 3 : 00
   ---0000 -  Numbering Plan : unknown
   000---- 0- Type of number : unknown
   ------     extension bit = 0
C3 11000011   octet 3a: C3
   -10-----   Presentation indicator : number not available due to interworking
   ------11   Screening indicator : network provided
              Calling Number:

Frame: 452 ----------------------------------------------------
Date: 1/ 3/2003       13:34:23.846.272 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
39: 02 81 06 02 08 01 81 62 1C 1D 91 A1 1A 02 01 09
     02 01 21 30 12 A1 0D 81 03 45 55 52 A2 06 81 01
     32 82 01 01 82 01 00
              ---------- Layer 3 Info ----------
              Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
62 01100010 ===== FAC           ====
1C 00011100 ---------- FAC : Facility ----------------------
1D 00011101 Len= 29
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
1A 00011010 Length:
   0-------     Single octet length
   -0011010     Len= 26
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 09
02 00000010 operation tag
01 00000001 length of operation tag is = 1
21 00100001 operation 33: AOCD Currency
30 00110000 Type: specific currency
12 00010010       Length:
   0------- -      Single octet length
   0010010         Len= 18
A1 10100001      Type: recorded currency
0D 00001101        Length:
   0------- -       Single octet length
   0001101          Len= 13
81 10000001       Type: currency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0------- -         Single octet length
   0000001            Len= 1
                      Value: 50
82 10000010        Type: multiplier
01 00000001          Length:
   0------- -         Single octet length
   0000001            Len= 1
01 00000001         Value: one hundredth (1)
82 10000010      Type: type of charging info
01 00000001        Length:
   0------- -       Single octet length
   0000001          Len= 1
00 00000000       Value: sub total (0)
```

```
Frame: 472 ----------------------------------------------------
Date: 1/ 3/2003       13:36:00.226.176 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
12: 00 81 02 08 08 01 01 45 08 02 80 90
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
45 01000101 ===== DISC          ====
08 00001000 ---------- CAU : Cause -------------------------
02 00000010 Len= 2
80 10000000 octet 3 : 80
   ----0000 Location: user
   -00----- Coding standard: CCITT standardized coding
   1------- Extension bit: no extension
90 10010000 octet 4 : 90
   -0010000 Cause #16 : normal call clearing

Frame: 474 ----------------------------------------------------
Date: 1/ 3/2003       13:36:00.369.856 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Netw Status: OK
------------------------------------------------------------
38: 02 81 08 04 08 01 81 4D 1C 1C 91 A1 19 02 01 0A
    02 01 23 30 11 30 0F A1 0D 81 03 45 55 52 A2 06
    81 01 32 82 01 01
             ---------- Layer 3 Info ----------
             Direction: Network->User
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
81 10000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   1------- Message to CR-origination side
4D 01001101 ===== REL           ====
1C 00011100 ---------- FAC : Facility ----------------------
1C 00011100 Len= 28
91 10010001 octet 3 : 91
   ---10001 Service discriminator: supplementary service applications
A1 10100001 type: invoke
19 00011001 Length:
   0-------     Single octet length
   -0011001     Len= 25
02 00000010 invoke identifier tag
01 00000001 Len= 1
             InvokeID= 0A
02 00000010 operation tag
01 00000001 length of operation tag is = 1
23 00100011 operation 35: AOCE Currency
30 00110000 Type: AOCE currency info
11 00010001      Length:
   0------- -     Single octet length
   0010001        Len= 17
30 00110000     Type: specific currency
0F 00001111       Length:
   0------- -      Single octet length
   0001111         Len= 15
A1 10100001      Type: recorded currency
0D 00001101        Length:
   0------- -       Single octet length
   0001101          Len= 13
81 10000001       Type: currency
03 00000011         Length:
   0------- -        Single octet length
   0000011           Len= 3
                    Value: EUR
A2 10100010       Type: amount
06 00000110         Length:
   0------- -        Single octet length
   0000110           Len= 6
81 10000001        Type: currency amount
01 00000001          Length:
   0------- -         Single octet length
   0000001           Len= 1
                     Value: 50
82 10000010        Type: multiplier
```

```
01 00000001           Length:
   0-------            Single octet length -
   0000001             Len= 1
01 00000001          Value: one hundredth (1)

Frame: 476 ----------------------------------------------------
Date: 1/ 3/2003       13:36:00.439.680 Diff: 000:00:00.000.000
from: SLOT3/BRI-S0/Term Status: OK
------------------------------------------------------------
8: 00 81 04 0A 08 01 01 5A
             ---------- Layer 3 Info ----------
             Direction: User->Network
08 00001000 PD for E-DSS.1/CCITT Q.931
01 00000001 Callref length: 1 type: one octet
01 00000001 Call Reference octet
   -0000001 Call Reference value          CR: 01
   0------- Message from CR-origination side
5A 01011010 ===== REL-COM      =====
```

11. ANNEX 2 PICS FOR ALCATEL S12 EXCHANGES

Paragraph names and numbers of the ETSI reference document EN 300 182-1 are kept in next part.

Annex A (normative): PICS proforma

A.1.4 Symbols, abbreviations and terms

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7.
The reference column contained in the tables gives reference to the appropriate part(s) of EN 300 182-1 describing the particular item. Note, however, that a reference merely indicates the place where the core of a description of an item can be found. Any additional information contained in EN 300 182-1 has to be taken into account when making a statement about the conformance of that particular item.
The following common notations, defined in ISO/IEC 9646-7, are used for the status column:

M	mandatory
O	optional
N/A	not applicable
O.<integer>	for mutually exclusive or selectable options from a set

The following common notations, defined in ISO/IEC 9646-7, are used for the support column:
Y for supported/implemented
N for not supported/not implemented

A.4 Identification of the protocol

This PICS proforma applies to the following standard:
EN 300 182-1 (V1.2): "Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

A.5 Global statement of conformance

The implementation described in this PICS meets all the mandatory requirements of the referenced standard?

[X] **Yes**

[ ] **No**

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming. Explanations may be entered in the comments field at the bottom of each table or on attached pages.

A.6 Roles

Table A.1: Roles

Item	Major role: Does the implementation...	Conditions for status	Status	Reference	Support
	Type of implementation				
R1	not used				
R 2.1	support user requirements?		O.1	9	[ ]Yes [x]No
R 2.2	support network requirements?		O.1	9	[x]Yes [ ]No
R3	not used (note)	N/A	N/A R 4.1	support user	
requirements at the interface of the]Yes [ ]No		R 2.1	M	9	[
	served user?	NOT R 2.1	N/A		[x]N/A
R 4.2	support user requirements at the interface of the remote user?		N/A		N/A
R 4.3	support network requirements at the interface of the served user?	R 2.2	M	9	[x]Yes [ ]No
		NOT R 2.2	N/A		[ ]N/A
R 4.4	support network requirements at the interface of the remote user?		N/A		N/A
O.1	Support of one and only one of these options is required.				

NOTE: EN 300 182-1 provides identical requirements for the T reference point and for the coincident S and T reference point. Therefore, this PICS proforma makes no distinction between the different reference points.

Comments:

A.7 User

The tables provided in this clause need only to be completed for user implementation where item R 2.1 in table A.1 is supported.

A.7.1 Major capabilities

Table A.2: Major capabilities - user

Item	Major capability: Does the implementation support...	Conditions for status	Status	Reference	Support
MC 1	AOC-S?	O.2	1	[ ]Yes [ ]No MC 2	AOC-D?
	O.2	1	[ ]Yes [ ]No	MC 3	AOC-E?
	O.2	1	[ ]Yes [ ]No	MC 4	the receipt
of charging information in the call establishment phase (AOC-S)?		MC 1 NOT MC 1	M N/A	9.2.1	[ ]Yes [ ]No [ ]N/A
MC 5	the receipt of charging information in the Active state of a call (AOC-S and AOC-D)?	MC 1 OR MC 2 NOT (MC 1 OR MC 2)	M N/A	9.2.2	[ ]Yes [ ]No [ ]N/A
MC 6	the receipt of charging information in the call clearing phase (AOC-S, AOC-E and AOC-D)?	MC 1 OR MC 2 OR MC 3 NOT (MC 1 OR MC 2 OR MC 3)	M N/A	9.2.3	[ ]Yes [ ]No [ ]N/A
MC 7	the receipt of charging information without a bearer establishment at the user-network interface (AOC-E)?	MC 3 NOT MC 3	O N/A	9.2.4	[ ]Yes [ ]No [ ]N/A
MC 8	the receipt of charging information as currency and charging units?	MC 2 OR MC 3 NOT (MC 2 OR MC 3)	O N/A	9.2	[ ]Yes [ ]No [ ]N/A
MC 9	the receipt of charging information as currency and as special charging arrangement?	MC 1 NOT MC 1	O N/A	9.2	[ ]Yes [ ]No [ ]N/A
O.2	Support of at least of one of these options is required.				
Comments:					

A.7.2 Subsidiary capabilities

Table A.3: Subsidiary capabilities - user

Item	Subsidiary capability: Does the implementation support...	Conditions for status	Status	Reference	Support
SC 1	the AOC-S service on a per call basis?	MC 1 NOT MC 1	O N/A	9.1.1	[ ]Yes [ ]No [ ]N/A
SC 2	the AOC-D service on a per call basis?	MC 2 NOT MC 2	O N/A	9.1.1	[ ]Yes [ ]No [ ]N/A
SC 3	the AOC-E service on a per call basis?	MC 3 NOT MC 3	O N/A	9.1.1	[ ]Yes [ ]No [ ]N/A
Comments:					

A.7.3 Protocol data units

No items requiring response.

A.7.4 Protocol data unit parameters

Table A.4: Facility information element components received - user

Item	Facility information element components: Does the implementation support the interpretation of...	Conditions for status	Status	Reference	Support
P1	ChargingRequest				
P 1.1	ChargingRequest return result component?	SC 1 OR SC 2 OR SC 3 NOT (SC 1 OR SC 2 OR SC 3)	M N/A	9.1, 9.2.1	[ ]Yes [ ]No [ ]N/A
P 1.2	ChargingRequest return error component?	SC 1 OR SC 2 OR SC 3 NOT (SC 1 OR SC 2 OR SC 3)	M N/A	9.2.1	[ ]Yes [ ]No [ ]N/A
P2	AOCSCurrency invoke component?	MC 1 NOT MC 1	M N/A	9.2.1, 9.2.2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P3	AOCSSpecialArr invoke component?	MC 1 NOT MC 1	M N/A	9.2.1, 9.2.2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P4	AOCDCurrency invoke component?	MC 2 NOT MC 2	M N/A	9.2.2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P5	AOCDChargingUnit invoke component?	MC 2 NOT MC 2	M N/A	9.2..2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P6	AOCECurrency invoke component?	MC 3 NOT MC 3	M N/A	9.2.3, 9.2.4	[ ]Yes [ ]No [ ]N/A
P7	AOCEChargingUnit invoke component?	MC 3 NOT MC 3	M N/A	9.2.3, 9.2.4	[ ]Yes [ ]No [ ]N/A
Comments:					

Table A.5: Facility information element components transmitted - user

Item	Facility information element components: Does the implementation support...	Conditions for status	Status	Reference	Support
P8	the inclusion of the ChargingRequest invoke component?	SC 1 OR SC 2 OR M SC 3 NOT (SC 1 OR SC 2 OR SC 3)	N/A	9.2.1, 9.2.2	[ ]Yes [ ]No [ ]N/A
Comments:					

A.7.5 Timers

No items requiring response.

A.7.6 Call states

No items requiring response.

A.8 Network

The tables provided in this clause need only to be completed for network implementation where item R 2.2 in table A.1 is supported.

A.8.1 Major capabilities

Table A.6: Major capabilities - network

Item	Major capability: Does the implementation...	Conditions for status	Status	Reference	Support
MC 10	support AOC-S?		O.3	1	[x]Yes [ ]No
MC 11	support AOC-D?	O.3	1	[x]Yes [ ]No MC 12	support
AOC-E?	O.3	1	[x]Yes [ ]No	MC 13	support the
transfer of charging information in	support the call establishment phase (AOC-S)?	MC 10 NOT MC 10	M N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 14	support the transfer of charging information in the Active state of a call (AOC-S and AOC-D)?	MC 10 OR MC 11 NOT (MC 10 OR MC 11)	M N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 15	support the transfer of charging information in the call clearing phase (AOC-E and AOC-D)?	MC 11 OR MC 12 NOT (MC 11 OR MC 12)	M N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 16	support the transfer of charging information in the call clearing phase (AOC-S)?	MC 10 NOT MC 10	O N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 17	support the transfer of charging information without a bearer establishment at the user-network interface (AOC-E)?	MC 12 NOT MC 12	O N/A	9.2.4	[x]Yes [ ]No [ ]N/A
MC 18	**provide charging information based on charging units...**				
MC 18.1	AOC-S?	MC 10 NOT MC 10	O N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 18.1	AOC-D?	MC 11 NOT MC 11	O.4 N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 18.1	AOC-E?	MC 12 NOT MC 12	O.5 N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 19	**provide charging information based on currency units...**				
MC 19.1	AOC-D?	MC 11 NOT MC 11	O.4 N/A	9.2	[x]Yes [ ]No [ ]N/A
MC 19.1	AOC-E?	MC 12 NOT MC 12	O.5 N/A	9.2	[x]Yes [ ]No [ ]N/A
O.3	Support of at least one of these options is required.				
O.4	Support of at least one of these options is required.				
O.5	Support of at least one of these options is required.				
Comments:					

A.8.2 Subsidiary capabilities

Table A.7: Subsidiary capabilities - network

Item	Subsidiary capability: Does the implementation...	Conditions for status	Status	Reference	Support
SC 4	retain the charging information for a suspended call as long as it retains the call identity?		O	6.2	[x]Yes [ ]No [ ]N/A
Comments:					

A.8.3 Protocol data units

No items requiring response.

A.8.4 Protocol data unit parameters

Table A.8: Facility information element components received - network

Item	Facility information element components: Does the implementation support...	Conditions for status	Status	Reference	Support
P9	the inclusion of the ChargingRequest invoke component?		M	9.2.1, 9.2.2	[x]Yes [ ]No
Comments:					

Table A.9: Facility information element components transmitted - network

Item	Facility information element components: Does the implementation support the interpretation of...	Conditions for status	Status	Reference	Support
P 10	ChargingRequest				
P 10.1	ChargingRequest return result component?	M	9.1, 9.2.1	[x]Yes [ ]No P 10.2	
	ChargingRequest return error component?	M	9.2.1	[x]Yes [ ]No P 11	
	AOCSCurrency invoke component?	MC 10 NOT MC 10	M N/A	9.2.1, 9.2.2, 9.2.3	[x]Yes [ ]No [ ]N/A
P 12	AOCSSpecialArr invoke component?	MC 10 NOT MC 10	O N/A	9.2.1, 9.2.2, 9.2.3	[x]Yes [ ]No [ ]N/A
P 13	AOCDCurrency invoke component?	MC 11 NOT MC 11	O.6 N/A	9.2.2, 9.2.3	[x]Yes [ ]No [ ]N/A
P 14	AOCDChargingUnit invoke component?	MC 11 NOT MC 11	O.6 N/A	9.2..2, 9.2.3	[x]Yes [ ]No [ ]N/A
P 15	AOCECurrency invoke component?	MC 12 NOT MC 12	O.7 N/A	9.2.3, 9.2.4	[x]Yes [ ]No [ ]N/A
P 16	AOCEChargingUnit invoke component?	MC 12 NOT MC 12	O.7 N/A	9.2.3, 9.2.4	[x]Yes [ ]No [ ]N/A
O.6	Support of at least one of these options is required.				
O.7	Support of at least one of these options is required.				
Comments:					

A.8.5 Timers

No items requiring response.

A.8.6 Call states

No items requiring response.

Annex A (normative): PICS proforma

A.1.4 Symbols, abbreviations and terms

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7.
The reference column contained in the tables gives reference to the appropriate part(s) of ETS 300 182-1 describing the particular item. Note, however, that a reference merely indicates the place where the core of a description of an item can be found. Any additional information contained in ETS 300 182-1 has to be taken into account when making a statement about the conformance of that particular item.
The following common notations, defined in ISO/IEC 9646-7, are used for the status column:

M	mandatory
O	optional
N/A	not applicable
O.<integer>	for mutually exclusive or selectable options from a set

The following common notations, defined in ISO/IEC 9646-7, are used for the support column:

Y for supported/implemented
N for not supported/not implemented

A.4 Identification of the protocol

This PICS proforma applies to the following standard:
ETS 300 182-1 (1999): "Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

A.5 Global statement of conformance

The implementation described in this PICS meets all the mandatory requirements of the referenced standard?

[X] **Yes**

[ ] **No**

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming. Explanations may be entered in the comments field at the bottom of each table or on attached pages.

A.6 Roles

Table A.1: Roles

Item	Major role: Does the implementation... Type of implementation	Conditions for status	Status	Reference	Support
R1	not used				
R 2.1	support user requirements?		O.1	9	[ ]Yes [x]No
R 2.2	support network requirements?		O.1	9	[x]Yes [ ]No
R3	not used (note)	N/A	N/A R 4.1	support user requirements at the interface of the]Yes [ ]No	
	served user?	R 2.1	M	9	[
		NOT R 2.1	N/A		[x]N/A
R 4.2	support user requirements at the interface of the remote user?		N/A		N/A
R 4.3	support network requirements at the interface of the served user?	R 2.2	M	9	[x]Yes [ ]No
		NOT R 2.2	N/A		[ ]N/A
R 4.4	support network requirements at the interface of the remote user?		N/A		N/A
O.1	Support of one and only one of these options is required.				

NOTE: ETS 300 182-1 provides identical requirements for the T reference point and for the coincident S and T reference point. Therefore, this PICS proforma makes no distinction between the different reference points.

Comments:

A.7 User

The tables provided in this clause need only to be completed for user implementation where item R 2.1 in table A.1 is supported.

A.7.1 Major capabilities

Table A.2: Major capabilities - user

Item	Major capability: Does the implementation support...	Conditions for status	Status	Reference	Support
MC 1	AOC-S?	O.2	1	[ ]Yes [ ]No	MC 2 AOC-D?
	O.2	1	[ ]Yes [ ]No	MC 3	AOC-E?
	O.2	1	[ ]Yes [ ]No	MC 4	the receipt
of charging information in the call		MC 1	M	9.2.1	[ ]Yes [ ]No
	establishment phase (AOC-S)?	NOT MC 1	N/A		[ ]N/A
MC 5	the receipt of charging information in the Active state of a call (AOC-S and AOC-D)?	MC 1 OR MC 2 NOT (MC 1 OR MC 2)	M N/A	9.2.2	[ ]Yes [ ]No [ ]N/A
MC 6	the receipt of charging information in the call clearing phase (AOC-S, AOC-E and AOC-D)?	MC 1 OR MC 2 OR MC 3 NOT (MC 1 OR MC 2 OR MC 3)	M N/A	9.2.3	[ ]Yes [ ]No [ ]N/A
MC 7	the receipt of charging information without a bearer establishment at the user-network interface (AOC-E)?	MC 3 NOT MC 3	O N/A	9.2.4	[ ]Yes [ ]No [ ]N/A
MC 8	the receipt of charging information as currency and charging units?	MC 2 OR MC 3 NOT (MC 2 OR MC 3)	O N/A	9.2	[ ]Yes [ ]No [ ]N/A
MC 9	the receipt of charging information as currency and as special charging arrangement?	MC 1 NOT MC 1	O N/A	9.2	[ ]Yes [ ]No [ ]N/A
O.2	Support of at least of one of these options is required.				
Comments:					

A.7.2 Subsidiary capabilities

Table A.3: Subsidiary capabilities - user

Item	Subsidiary capability: Does the implementation support...	Conditions for status	Status	Reference	Support
SC 1	the AOC-S service on a per call basis?	MC 1	O	9.1.1	[ ]Yes [ ]No
		NOT MC 1	N/A		[ ]N/A
SC 2	the AOC-D service on a per call basis?	MC 2	O	9.1.1	[ ]Yes [ ]No
		NOT MC 2	N/A		[ ]N/A
SC 3	the AOC-E service on a per call basis?	MC 3	O	9.1.1	[ ]Yes [ ]No
		NOT MC 3	N/A		[ ]N/A

Comments:

A.7.3 Protocol data units

No items requiring response.

A.7.4 Protocol data unit parameters

Table A.4: Facility information element components received - user

Item	Facility information element components: Does the implementation support the interpretation of...	Conditions for status	Status	Reference	Support
P1	ChargingRequest				
P 1.1	ChargingRequest return result component?	SC 1 OR SC 2 OR SC 3 NOT (SC 1 OR SC 2 OR SC 3)	M N/A	9.1, 9.2.1	[ ]Yes [ ]No [ ]N/A
P 1.2	ChargingRequest return error component?	SC 1 OR SC 2 OR SC 3 NOT (SC 1 OR SC 2 OR SC 3)	M N/A	9.2.1	[ ]Yes [ ]No [ ]N/A
P2	AOCSCurrency invoke component?	MC 1 NOT MC 1	M N/A	9.2.1, 9.2.2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P3	AOCSSpecialArr invoke component?	MC 1 NOT MC 1	M N/A	9.2.1, 9.2.2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P4	AOCDCurrency invoke component?	MC 2 NOT MC 2	M N/A	9.2.2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P5	AOCDChargingUnit invoke component?	MC 2 NOT MC 2	M N/A	9.2..2, 9.2.3	[ ]Yes [ ]No [ ]N/A
P6	AOCECurrency invoke component?	MC 3 NOT MC 3	M N/A	9.2.3, 9.2.4	[ ]Yes [ ]No [ ]N/A
P7	AOCEChargingUnit invoke component?	MC 3 NOT MC 3	M N/A	9.2.3, 9.2.4	[ ]Yes [ ]No [ ]N/A

Comments:

Table A.5: Facility information element components transmitted - user

Item	Facility information element components: Does the implementation support...	Conditions for status	Status	Reference	Support
P8	the inclusion of the ChargingRequest invoke component?	SC 1 OR SC 2 OR SC 3 NOT (SC 1 OR SC 2 OR SC 3)	M N/A	9.2.1, 9.2.2	[ ]Yes [ ]No [ ]N/A

Comments:

A.7.5 Timers

No items requiring response.

A.7.6 Call states

No items requiring response.

A.8 Network

The tables provided in this clause need only to be completed for network implementation where item R 2.2 in table A.1 is supported.

A.8.1 Major capabilities

Table A.6: Major capabilities - network

Item	Major capability: Does the implementation...	Conditions for status	Status	Reference	Support
MC 10	support AOC-S?	O.3	1	[x]Yes [ ]No MC 11	support
AOC-D?	O.3	1	[x]Yes [ ]No MC 12		support
AOC-E?	O.3	1	[x]Yes [ ]No	MC 13	support the
transfer of charging information in		MC 10	M	9.2	[x]Yes [ ]No
	support the call establishment phase (AOC-S)?	NOT MC 10	N/A		[ ]N/A
MC 14	support the transfer of charging information in the Active state of a call (AOC-S and AOC-D)?	MC 10 OR MC 11	M	9.2	[x]Yes [ ]No
		NOT (MC 10 OR MC 11)	N/A		[ ]N/A
MC 15	support the transfer of charging information in the call clearing phase (AOC-E and AOC-D)?	MC 11 OR MC 12	M	9.2	[x]Yes [ ]No
		NOT (MC 11 OR MC 12)	N/A		[ ]N/A
MC 16	support the transfer of charging information in the call clearing phase (AOC-S)?	MC 10	O	9.2	[x]Yes [ ]No
		NOT MC 10	N/A		[ ]N/A
MC 17	support the transfer of charging information without a bearer establishment at the user-network interface (AOC-E)?	MC 12	O	9.2.4	[ ]Yes [x]No
		NOT MC 12	N/A		[ ]N/A
MC 18	**provide charging information based on charging units...**				
MC 18.1	AOC-S?	MC 10	O	9.2	[x]Yes [ ]No
		NOT MC 10	N/A		[ ]N/A
MC 18.1	AOC-D?	MC 11	O.4	9.2	[x]Yes [ ]No
		NOT MC 11	N/A		[ ]N/A
MC 18.1	AOC-E?	MC 12	O.5	9.2	[x]Yes [ ]No
		NOT MC 12	N/A		[ ]N/A
MC 19	**provide charging information based on currency units...**				
MC 19.1	AOC-D?	MC 11	O.4	9.2	[x]Yes [ ]No
		NOT MC 11	N/A		[ ]N/A
MC 19.1	AOC-E?	MC 12	O.5	9.2	[x]Yes [ ]No
		NOT MC 12	N/A		[ ]N/A

O.3 Support of at least one of these options is required.
O.4 Support of at least one of these options is required.
O.5 Support of at least one of these options is required.

Comments:
MC18 : According CUST12073 the implementation is provided in currency units. However charging units are also supported.

A.8.2 Subsidiary capabilities

Table A.7: Subsidiary capabilities - network

Item	Subsidiary capability: Does the implementation...	Conditions for status	Status	Reference	Support
SC 4	retain the charging information for a suspended call as long as it retains the call identity?		O	6.2	[x]Yes [ ]No [ ]N/A

Comments:

A.8.3 Protocol data units

No items requiring response.

A.8.4 Protocol data unit parameters

Table A.8: Facility information element components received - network

Item	Facility information element components: Does the implementation support...	Conditions for status	Status	Reference	Support
P9	the inclusion of the ChargingRequest invoke component?		M	9.2.1, 9.2.2	[x]Yes [ ]No
Comments:					

Table A.9: Facility information element components transmitted - network

Item	Facility information element components: Does the implementation support the interpretation of...	Conditions for status	Status	Reference	Support
~~P 10~~	~~ChargingRequest~~				
P 10.1	ChargingRequest return result component?	~~M~~	9.1, 9.2.1	[x]Yes [ ]No P 10.2	
	ChargingRequest return error component?	~~M~~	9.2.1	[x]Yes [ ]No P 11	
	AOCSCurrency invoke component?	MC 10	M	9.2.1, 9.2.2, 9.2.3	[x]Yes [ ]No
		~~NOT MC 10~~	~~N/A~~		~~[ ]N/A~~
P 12	AOCSSpecialArr invoke component?	MC 10	O	9.2.1, 9.2.2, 9.2.3	[ ]Yes [x]No
		NOT MC 10	N/A		[ ]N/A
P 13	AOCDCurrency invoke component?	MC 11	O.6	9.2.2, 9.2.3	[x]Yes [ ]No
		NOT MC 11	N/A		[ ]N/A
P 14	AOCDChargingUnit invoke component?	MC 11	O.6	9.2..2, 9.2.3	[x]Yes [ ]No
		NOT MC 11	N/A		[ ]N/A
P 15	AOCECurrency invoke component?	MC 12	O.7	9.2.3, 9.2.4	[x]Yes [ ]No
		~~NOT MC 12~~	~~N/A~~		~~[ ]N/A~~
P 16	AOCEChargingUnit invoke component?	MC 12	O.7	9.2.3, 9.2.4	[x]Yes [ ]No
		NOT MC 12	N/A		[ ]N/A
O.6	Support of at least one of these options is required.				
O.7	Support of at least one of these options is required.				
Comments:					

A.8.5 Timers

No items requiring response.

A.8.6 Call states

No items requiring response.