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Digitalno omrežje z integriranimi storitvami (ISDN) - Dopolnilna storitev: obvestilo o ceni (AOC) - Funkcijske zmožnosti in informacijski tokovi

Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service; Functional capabilities and information flows

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33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols & Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

In accordance with CCITT Recommendation I.130 [1], the following three level structure is used to describe the supplementary telecommunications services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- Stage 1: is an overall service description, from the user's stand-point;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

This ETS details the stage 2 aspects (functional capabilities and information flows) needed to support the Advice Of Charge (AOC) supplementary service. The stage 1 and stage 3 aspects are detailed in ETSs 300 178-180 (1992) and ETS 300 182 (1993), respectively.

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1 Scope

This standard defines the stage two of the Advice of Charge (AOC) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by the European public telecommunications operators. Stage two identifies the functional capabilities and the information flows needed to support the service description. The stage two description also identifies user operations not directly associated with a call (see CCITT Recommendation I.130 [1]).

This standard is defined according to the methodology specified in CCITT Recommendation Q.65 [2].

In addition this standard does not specify the requirements where the service is provided to the user via a private ISDN. This standard does not specify the requirements for the allocation of defined functional entities within a private ISDN, it defines which functional entities may be allocated to a private ISDN.

This standard does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

The AOC supplementary service provides the served user with usage based charging information.

The AOC supplementary service is applicable to all circuit switched telecommunication services.

This standard is applicable to the stage three standards for the ISDN AOC supplementary services. The term "stage three" is defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement, i.e. as a strict command or prohibition, as authorisation leaving freedom, as a capability or possibility, this shall be reflected in the text of the relevant stage three standards.

Furthermore, conformance to this standard is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore, no method of testing is provided for this standard.

This standard does not formally describe the relation between this supplementary service and the basic call, but where possible, this information is included for guidance.

2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter, for dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] CCITT Recommendation Q.65 (1988): "Stage 2 of the method for the characterisation of services supported by an ISDN".
- [3] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [4] CCITT Recommendation I.210 (1988): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [5] CCITT Recommendation E.164 (1988): "Numbering plan for the ISDN era".
- [6] CCITT Recommendation Z.100 (1988): "Functional Specification and Description Language (SDL)".
- [7] CCITT Recommendation Q.71 (1988): "ISDN 64 kbit/s circuit mode switched bearer service".

3 Definitions

For the purposes of this standard, the following definitions apply:

Advice of Charge (AOC): information about usage based charging.

Charged number: the number which shall be charged for the call.

Dialled number: the destination for the charged call.

Integrated Services Digital Network (ISDN): see CCITT Recommendation I.112 [3], § 2.3, definition 308.

ISDN number: a number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [5].

Service; telecommunications service: see CCITT Recommendation I.112 [3], § 2.2, definition 201.

Supplementary service: see CCITT Recommendation I.210 [4], § 2.4.

4 Symbols and abbreviations

AOC	Advice of Charge
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CT	Call Transfer
FEA	Functional Entity Action
ISDN	Integrated Services Digital Network
LE	Local Exchange
PTNX	Private Telecommunications Network eXchange
SDL	Specification and Description Language
TE	Terminal Equipment
TP	Terminal Portability

5 Description

Advice of Charge (AOC) is a group of supplementary services allowing the served user to be informed of usage-based charging information.

These supplementary services are not meant to replace the charge metering inside the network which is considered to be the correct one in all cases.

The AOC group of supplementary services may include 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.

6 Derivation of a functional model

6.1 Functional model description

The functional model for the AOC supplementary service is shown in figure 1.

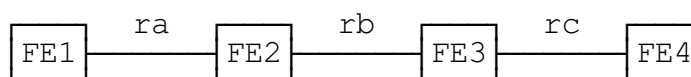


Figure 1

6.2 Description of the functional entities

FE1: AOC served entity

FE2: AOC information options check

FE3: AOC controlling entity

FE4: AOC information formatting

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6.3 Relationship with a basic service

The relationship with a basic service is shown in figure 2.

NOTE: The basic call model is defined in CCITT Recommendation Q.71 [7], § 2.1, with the exception that r1 represents an outgoing relationship from a CCA and r3 represents an incoming relationship to a CCA.

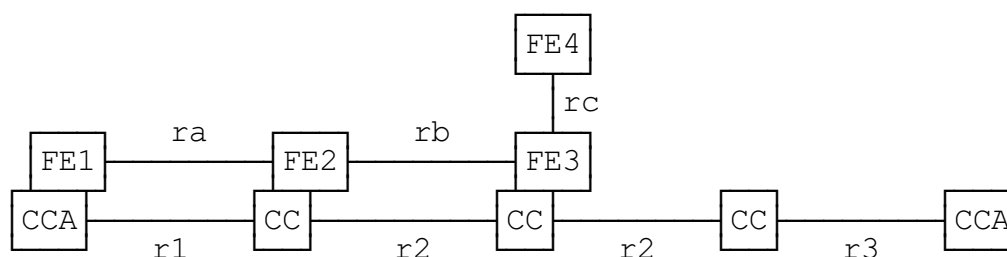


Figure 2

7 Information flows

7.1 Information flow diagrams

It is assumed that the coding of the AOC-Information is done in such a way that whenever this information is received by a FE1 the content shall be complete in itself.

The flows are intended to show the information flowing for the AOC supplementary service. These flows can in many cases be combined with the flows for the basic call, depending upon call state. Whether or not this can take place is considered to be a stage 3 matter.

7.1.1 Information flows for charging information at call set-up time (AOC-S)

7.1.1.1 Receipt of charging information on charging rates (AOC-S)

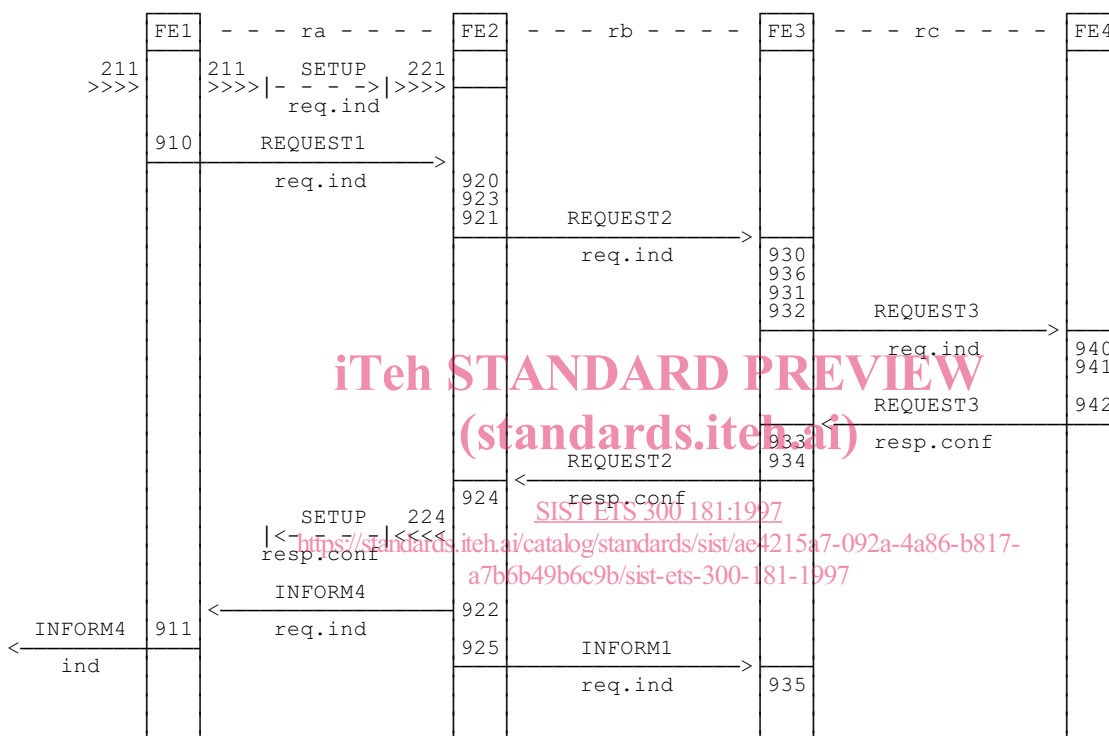


Figure 3

7.1.1.2 Change of charging rate during the active state of a call (AOC-S)

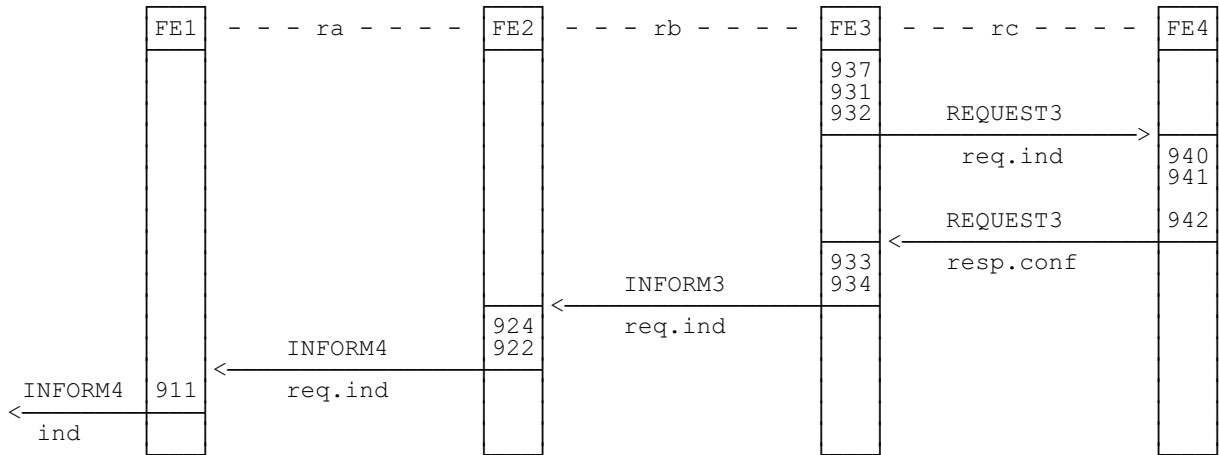


Figure 4

7.1.1.3 Receipt of charging rate after TP RETRIEVE (AOC-S)

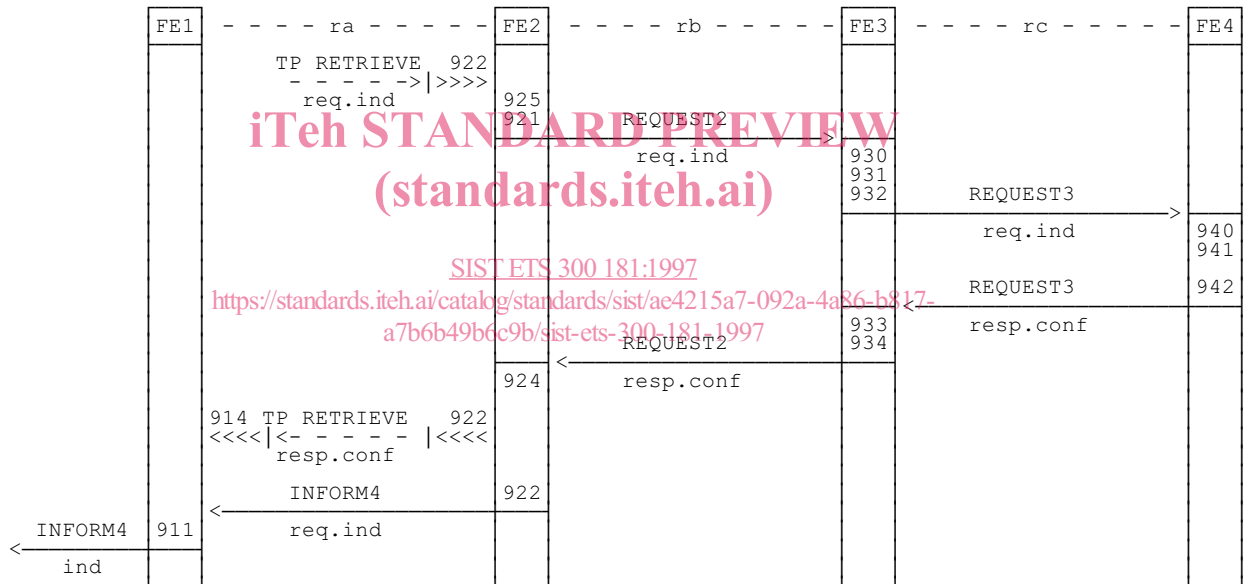


Figure 5

NOTE: The TP RETRIEVE function is a part of the Terminal Portability (TP) supplementary service, and the corresponding FEA numbers refer to this service.