



EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 060

October 1991

Source: ETSI TC-SPS

Reference: T/S 22-26

ICS: 33.080

Key words: ISDN, supplementary service.

**Integrated Services Digital Network (ISDN);
Subaddressing (SUB) supplementary service
Functional capabilities and information flows**

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

Copyright Notification: No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1991. All rights reserved.

Contents

Foreword.....	5
1 Scope	7
2 Normative references	7
3 Definitions.....	8
4 Symbols and abbreviations.....	8
5 Description	8
6 Derivation of the functional model	9
6.1 Functional model description	9
6.2 Description of the functional entities.....	9
6.3 Relationship with a basic service	9
7 Information flows.....	10
7.1 Information flow diagrams.....	10
7.2 Definition of individual information flows.....	11
7.2.1 Relationship ra	11
7.2.1.1 INFORM	11
8 SDL diagrams for functional entities.....	12
8.1 Functional entity FE1	12
8.2 Functional entity FE2.....	14
8.3 Functional entity FE3.....	16
8.4 Functional entity FE4.....	20
9 Functional entity actions.....	22
9.1 FEAs of FE1.....	22
9.2 FEAs of FE2.....	22
9.3 FEAs of FE3.....	22
9.4 FEAs of FE4.....	22
10 Allocation of functional entities to physical locations.....	23
History.....	24

Blank page

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 standpoint;
- 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 Subaddressing (SUB) supplementary service. The stage 1 and stage 3 aspects are detailed in ETS 300 059 (1991) and ETS 300 061 (1991), respectively.

Blank page

1 Scope

This standard defines the stage two of the Subaddressing (SUB) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage two identifies the functional capabilities and the information flows needed to support the stage 1 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 specified according to the methodology specified in CCITT Recommendation Q.65 [2].

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

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 does, however, define 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 Subaddressing (SUB) supplementary service allows the called (served) user to expand his addressing capacity beyond the one given by the public or private ISDN number.

The SUB supplementary service is applicable to all telecommunication services.

This standard is applicable to the stage three standards for the ISDN Subaddressing supplementary service. The term "stage three" is also 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.

2 Normative references

This ETS 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 ETS 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 E.164 (1988): "Numbering plan for the ISDN era".
- [4] ETS 300 059 (1991): "Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service; Service Description".

- [5] CCITT Recommendation Q.71 (1988): "ISDN 64 kbit/s circuit mode switched bearer service".
- [6] CCITT Recommendation I.210 (1988): "Principles of telecommunication services supported by an ISDN and the means used to describe them".
- [7] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [8] CCITT Recommendation Z.100 (1988): "Functional Specifications and Description Language (SDL)".

3 Definitions

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

Integrated Services Digital Network (ISDN): see CCITT Recommendation I.112 [7], § 2.3, definition 308.

Service; telecommunications service: see CCITT Recommendation I.112 [7], § 2.2, definition 201.

Supplementary service: see CCITT Recommendation I.210 [6], § 2.4.

Called party subaddress: the called party subaddress is the subaddress of the called party ISDN address. The calling user may add this subaddress to the called party number when initiating an outgoing call.

ISDN number: a number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [3].

Maximum Authorised Length of Subaddress Accepted by the Network (MALSAN): see ETS 300 059 [4], Clause 3.

4 Symbols and abbreviations

SUB:	Subaddressing
FEA:	Functional Entity Action
ISDN:	Integrated Services Digital Network
LE:	Local Exchange
PTNX:	Private Telecommunications Network Exchange
MALSAN:	Maximum Authorised Length of Subaddress Accepted by Network
SDL:	Specification and Description Language

5 Description

The relation of the subaddress to the ISDN number is given in CCITT Recommendation E.164 [3].

6 Derivation of the functional model

6.1 Functional model description

The functional model for the SUB supplementary service is shown in Figure 1.

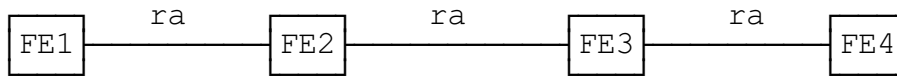


Figure 1

6.2 Description of the functional entities

The functional entities required by the SUB supplementary service in addition to those of the basic call are as follows:

- FE1: Subaddress insertion entity
- FE2: Subaddress length controlling entity
- FE3: Supplementary service controlling entity
- FE4: Subaddress using entity

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 [5], subclause 2.1, with the exception that r1 represents an outgoing call relationship from a CCA and r3 represents an incoming call relationship to a CCA.

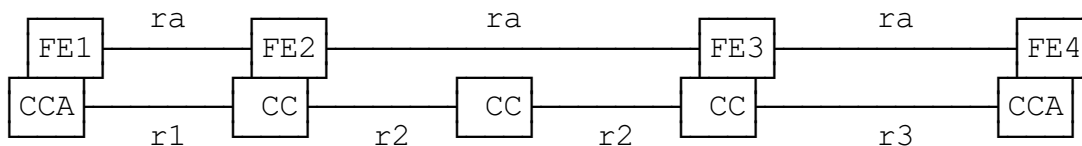


Figure 2

7 Information flows

7.1 Information flow diagrams

The information flow diagrams for the SUB supplementary service are shown in Figure 3 and Figure 4.

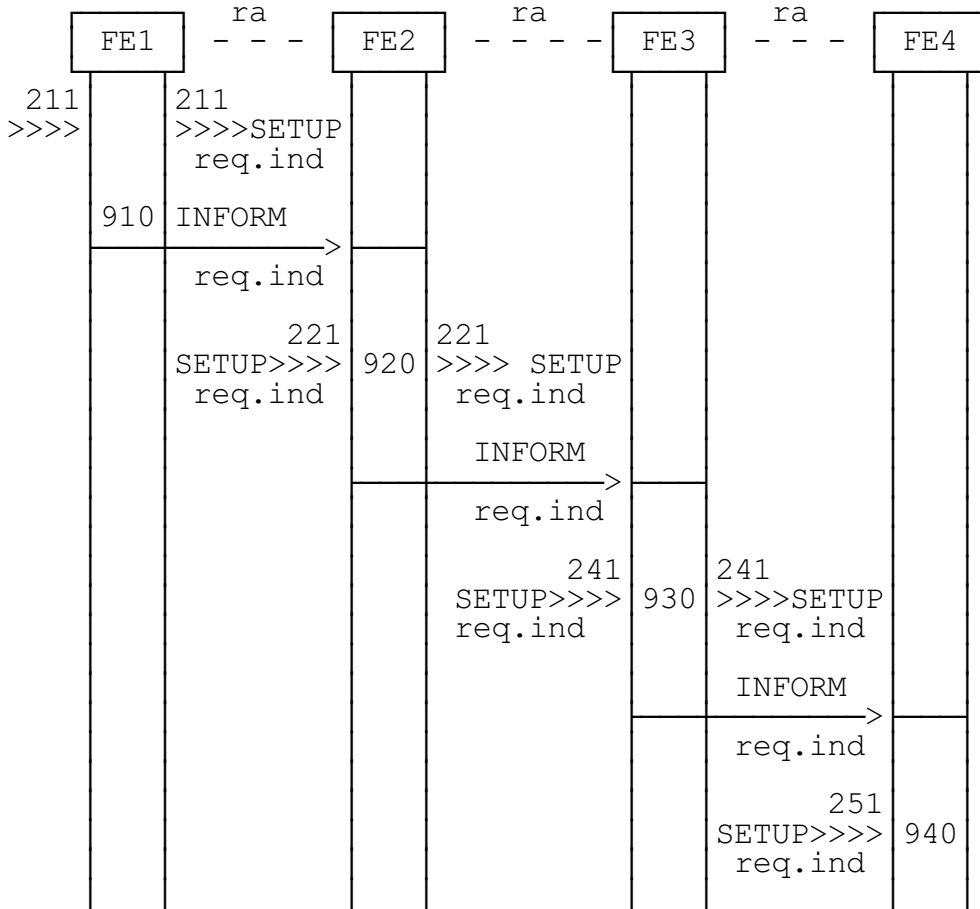


Figure 3: Subaddress accepted

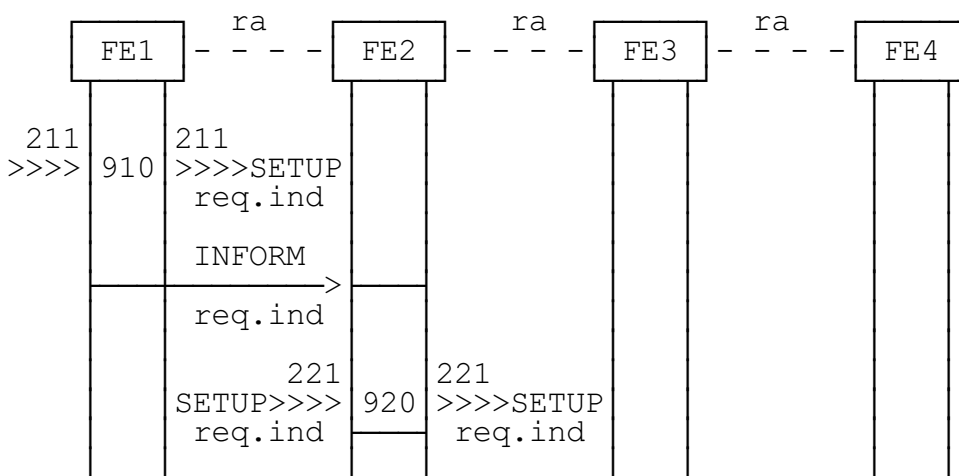


Figure 4: Subaddress discarded

7.2 Definition of individual information flows

7.2.1 Relationship ra

7.2.1.1 INFORM

The contents of the INFORM information flow are shown in table 1.

Table 1

Parameter	req.ind
subaddress	mandatory

8 SDL diagrams for functional entities

The SDLs are provided according to CCITT Recommendation Z.100 (1988) [8].

8.1 Functional entity FE1

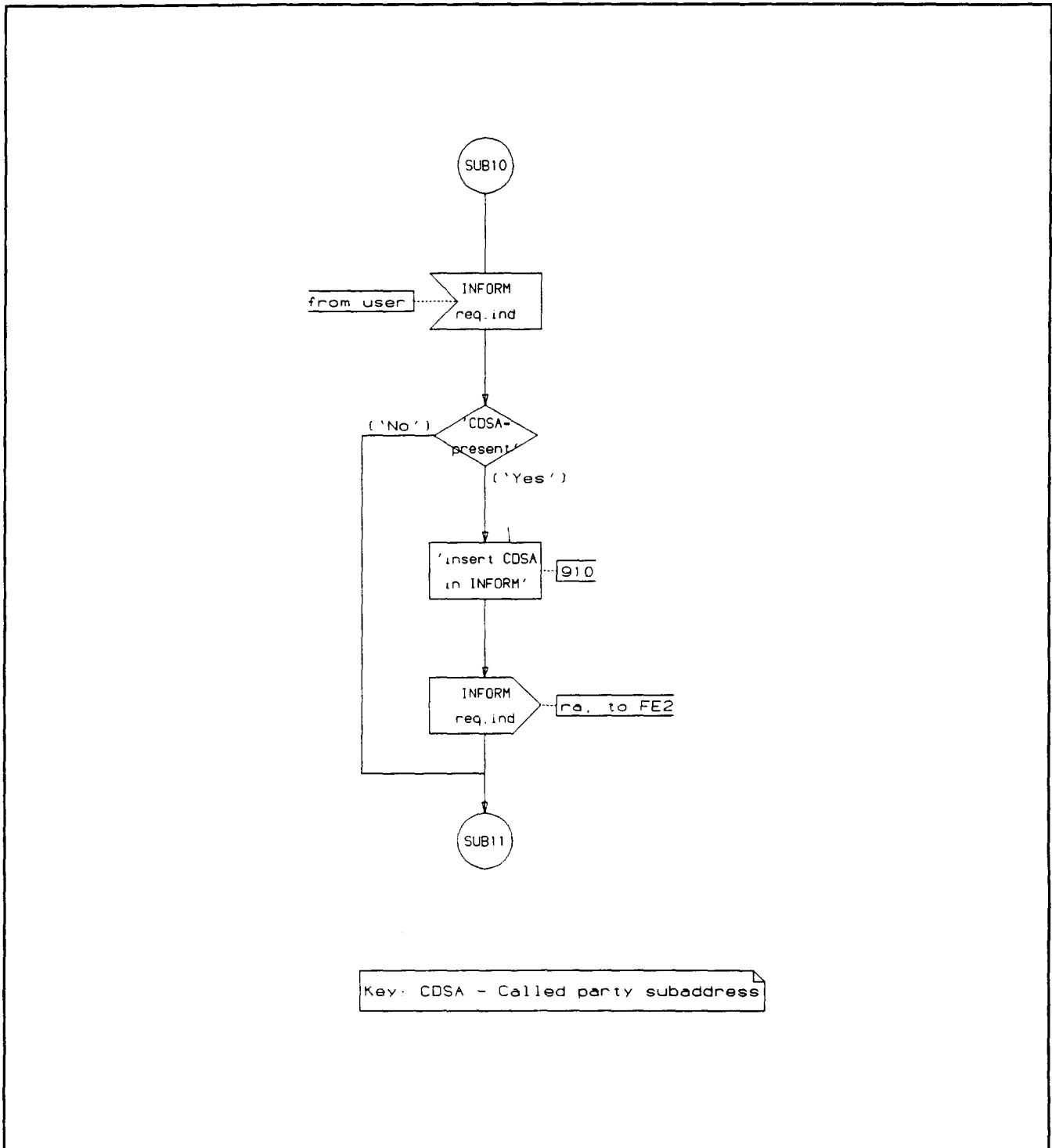


Figure 5

Note to Figure 5.

NOTE: SUB10 and SUB11 break the basic call transition during FEA 211 "Process Service Request" (see figure 2-8/Q.71 (sheet 1 of 11) of CCITT Recommendation Q.71 [5]).

8.2 Functional entity FE2

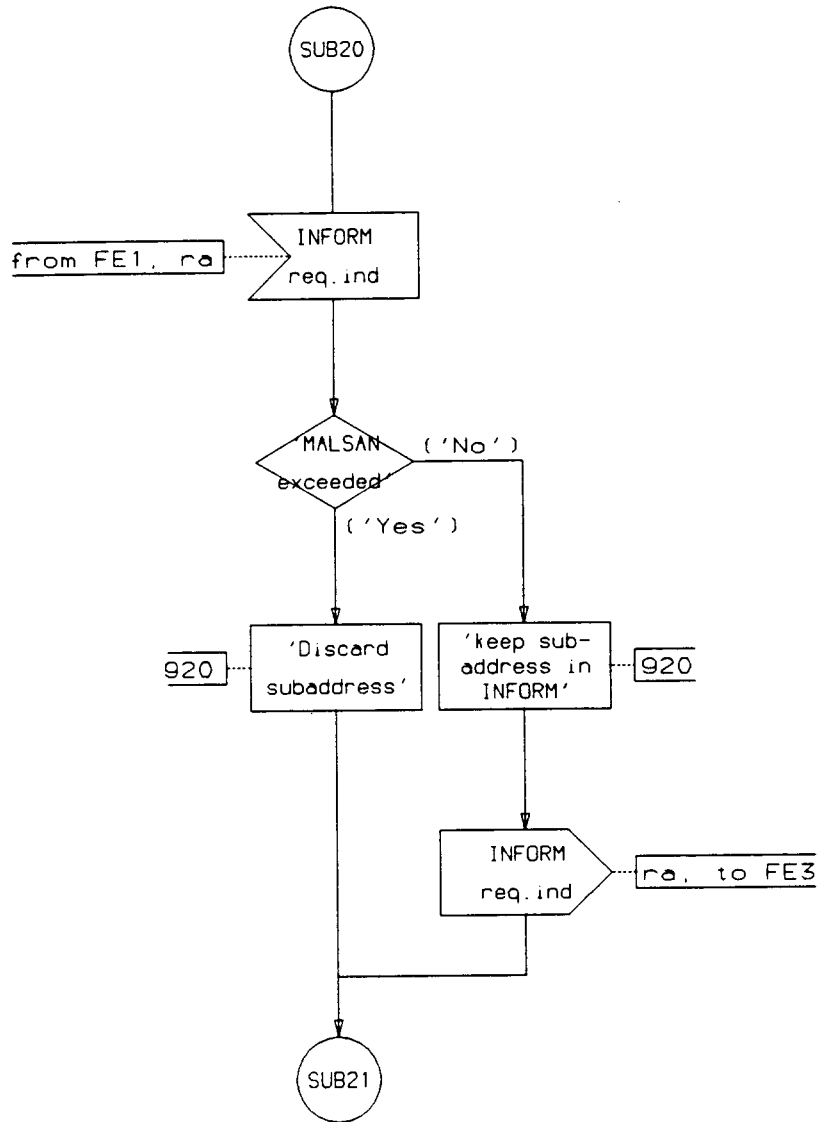


Figure 6

Note to Figure 6.

NOTE: SUB20 and SUB21 break the basic call transition during (r1 - r2) and (r1 - r3) FEA 221 "Process Attempt: analyse information" see figure 2-9/Q.71 (sheet 1 of 19) of CCITT Recommendation Q.71 [5]).

8.3 Functional entity FE3

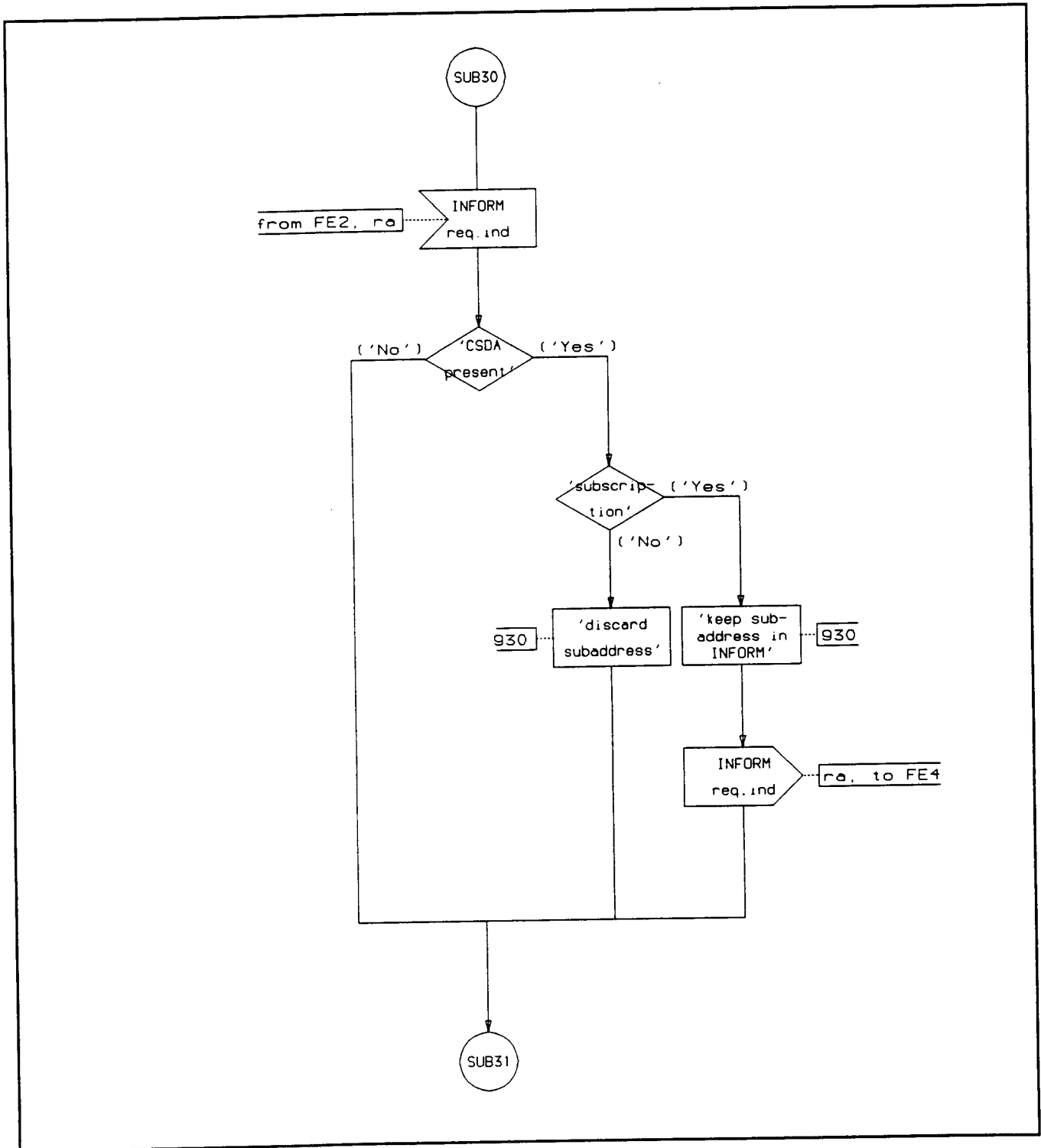


Figure 7

Note to Figure 7.

NOTE : SUB30 and SUB31 break the basic call transition during (r2 - r3) FEA 241 Terminating Screening, Process Attempt (see figure 2-9/Q.71 sheet 7 of 19) of CCITT Recommendation Q.71 [5]) at the "Y" branch of the decision "Supplementary Service Provided". SUB31 is connected to the "N" branch of the decision "Supplementary Service Provided" if no other supplementary services have to be handled.

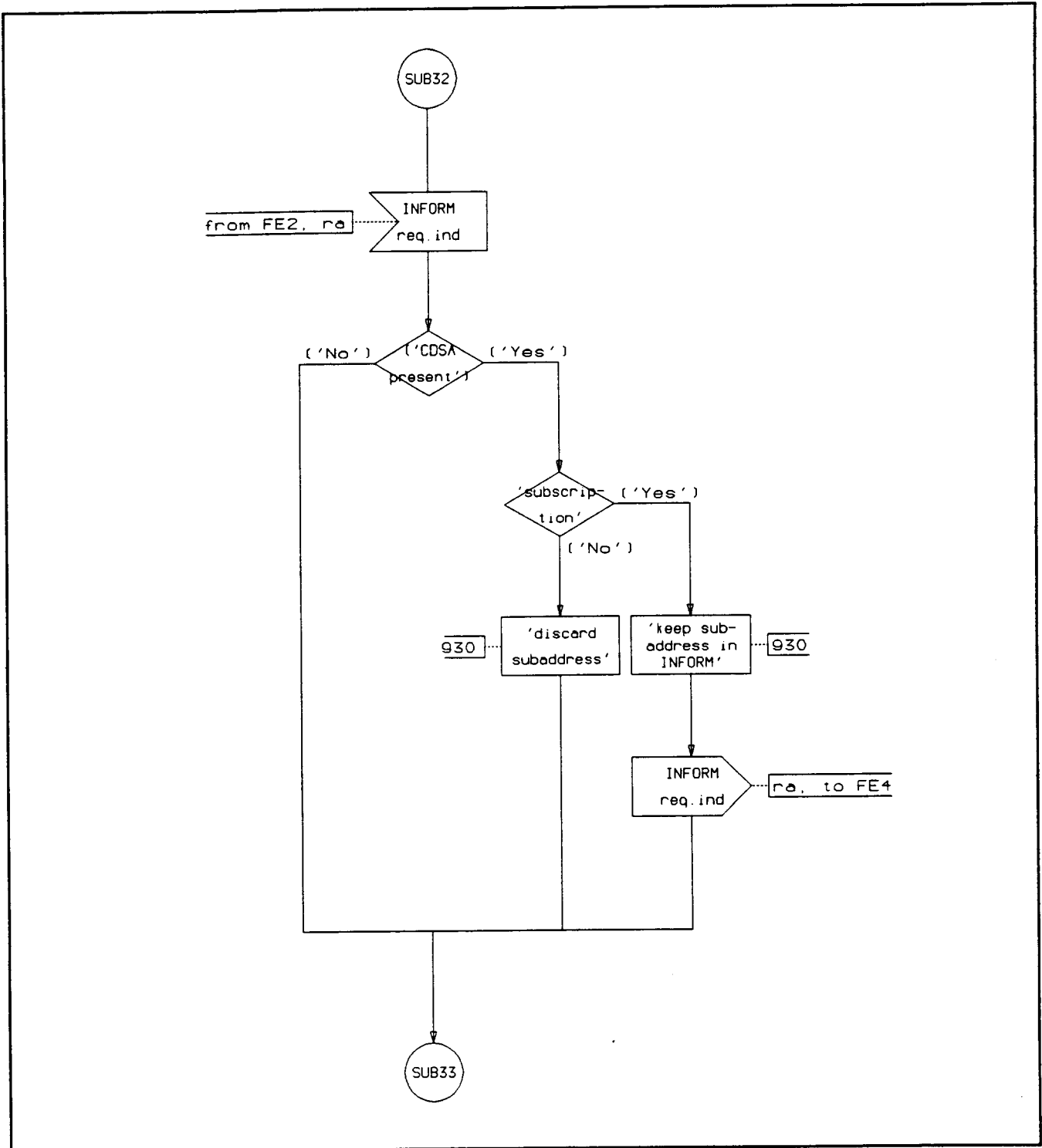


Figure 8

Note to figure 8.

NOTE: SUB32 and SUB33 break the basic call transition during (r1 - r3) FEA 241A Terminating Screening, Process Attempt" (see figure 2-9/Q.71 (sheet 13 of 19) of CCITT Recommendation Q.71 [5]).

8.4 Functional entity FE4

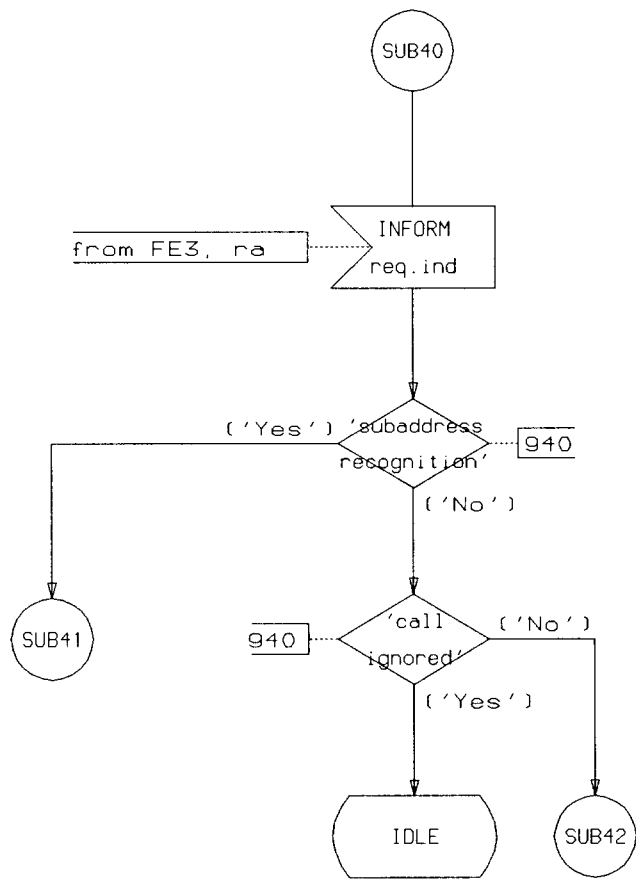


Figure 9

Note to Figure 9.

NOTE: SUB40, SUB41 and SUB42 break the basic call transition during FEA 251 "Process Attempt: identify called user" (see figure 2-8/Q.71 (sheet 7 of 11) of CCITT Recommendation Q.71 [5]) immediately following the "Y" branch of the decision "compatible". SUB41 reconnects at the same point and SUB42 joins the "N" branch of the decision "compatible".

9 Functional entity actions

9.1 FEAs of FE1

910: The functional entity shall accept subaddress from the calling party;
The functional entity shall insert subaddress in the INFORM and forward it to FE2.

9.2 FEAs of FE2

920: The functional entity shall accept called party subaddress;
The functional entity shall compare the length of the called party subaddress and,
The functional entity shall send called party subaddress if MALSAN value is not exceeded otherwise FE2 shall discard called party subaddress.

9.3 FEAs of FE3

930: The functional entity shall accept and forward called party subaddress if subscription is valid, otherwise the functional entity shall discard called party subaddress.

9.4 FEAs of FE4

940: The functional entity shall receive called party subaddress;
The functional entity shall check called party subaddress and :
- if recognised: continue call handling;
- if not recognised: ignore the call.

10 Allocation of functional entities to physical locations

The possible locations of functional entities FE1, FE2, FE3 and FE4 are shown in table 2.

Table 2

Scenarios	FE1	FE2	FE3	FE4
Scenario 1	TE	LE	LE	TE
Scenario 2	TE *	<-----PTN----->		TE *
Scenario 3	TE *	<-----PTN-----> & LE LE		TE
Scenario 4	TE	LE LE & <-----PTN----->		TE *
Scenario 5	TE *	<-----PTN-----> & LE LE & <-----PTN----->		TE *

Key:

PTN: Private Telecommunications Network.

*: This TE is connected to a PTN.

Note 1: All functional entities above "&" are provided with appropriate relationships, followed subsequently by functional entities below the "&".

Note 2: Other combinations of networks are also permitted, within the constraint that each network shall provide an FE2 and an FE3.

History

Document history	
October 1991	First Edition
May 1996	Converted into Adobe Acrobat Portable Document Format (PDF)