INTERNATIONAL TELECOMMUNICATION UNION

CCITT Q.81

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN

STAGE 2 DESCRIPTION FOR NUMBER IDENTIFICATION SUPPLEMENTARY SERVICES

SECTION 3 – CALLING LINE IDENTIFICATION PRESENTATION (CLIP) AND CALLING LINE IDENTIFICATION RESTRICTION (CLIR)

SECTION 5 – CONNECTED LINE IDENTIFICATION, PRESENTATION AND RESTRICTION (COLP AND COLR)

Modifications to
Recommendation Q.81

Geneva, 1991

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation Q.81, §§ 3 and 5 was prepared by Study Group XI and was approved under the Resolution No. 2 procedure on the 10th of September 1991.

CCITT NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication Administration and a recognized private operating agency.

© ITU 1991

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

STAGE 2 DESCRIPTION FOR NUMBER IDENTIFICATION SUPPLEMENTARY SERVICES

(revised 1991)

3 Calling Line Identification Presentation (CLIP) and Calling Line Identification Restriction (CLIR)

3.1 *Scope*

This Recommendation defines the stage 2 of the integrated services digital network (ISDN) as provided by the telecommunications operators for the Calling Line Identification Presentation (CLIP) and Calling Line Identification Restriction (CLIR) supplementary services. Stage 2 identifies the functional capabilities and the information flows needed to support the service description. The stage 2 description also identifies user operations not directly associated with a call (see Recommendation I.130 [1]).

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

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

In addition, this Recommendation does not specify the requirements where the service is provided to the user via a private ISDN. This Recommendation 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 Recommendation does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

The CLIP supplementary service provides the called party with the possibility to receive identification of the calling party.

The CLIR supplementary service enables the calling party to prevent presentation of its ISDN number to the called party.

The CLIP and CLIR supplementary services are applicable to all telecommunication services.

This Recommendation is applicable to the stage 3 Recommendations for the ISDN CLIP and CLIR supplementary services, as defined in Recommendation I.130 [1].

3.2 *References*

These references are cited at the appropriate places in the text and the publications are listed hereafter. Dated references, subsequent amendments to, or revisions of any of these publications apply to this Recommendation only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

[1] CCITT Rec. I.130 (1988) – Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN.

[2] CCITT Rec. Q.65 (1988) – Stage 2 of the method for the characterization of services supported by an ISDN.

[3] CCITT Rec. I.251.3 – Calling Line Identification Presentation (CLIP).

[4] CCITT Rec. I.251.4 – Calling Line Identification Restriction (CLIR).

[5] CCITT Rec. Q.71 – ISDN 64 kbit/s circuit mode switched bearer services.

[6] CCITT Rec. I.112 (1988) – Vocabulary of terms for ISDNs.

[7] CCITT Rec. I.210 (1988) – Principles of telecommunication services supported by an ISDN and the means to describe them.

[8] CCITT Rec. E.164 (1991) – Numbering plan for the ISDN era.

[9] CCITT Rec. I.330 (1988) – ISDN numbering and addressing principles.

3.3 *Definitions*

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

integrated services digital network (ISDN)

See definition 308 of § 2.3 of Recommendation I.112 [6].

service: telecommunication service

See definition 201 of § 2.2 of Recommendation I.112 [6].

supplementary service

See § 2.4 of Recommendation I.210 [7].

ISDN number

A number conforming to the numbering plan and structure specified in Recommendation E.164 [8].

PNP number

A number conforming to the numbering plan and structure in a private network.

sub-address

See § 5.4 of Recommendation I.330 [9].

calling line identity

The address (the ISDN number, and if supplied the sub-address) of the calling line, and the screening indicator. If these are not available the reason is indicated, via the presentation indicator.

presentation indicator (PI)

The PI provides instructions on whether or not the provided calling line identity is allowed to be presented, or indicates that the number is not available.

screening indicator (SI)

The SI provides information on the source and the quality of the provided information.

3.4 *Symbols and abbreviations*

CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
PI	Presentation Indicator
SI	Screening indicator
ISDN	Integrated services digital network
TE	Terminal equipment
PNX	Private network exchange
LE	Local exchange
INT TR	International transit exchange
FEA	Functional entity action
SDL	Specification and description language
PNP	Private Numbering Plan

3.5 *Description*

The relationship between the CLIP and CLIR supplementary services is described in § 3.6.6 of Recommendation I.251.3 [3] and in Recommendation I.251.4 [4].

The provisions for overriding the CLIP supplementary service are described in §§ 3.3.4.2 and 3.6.6 of Recommendation I.251.3 [3] and in Recommendation I.251.4 [4].

3.6 *Derivation of a functional model*

3.6.1 *Functional model description*

The model for the CLIP and CLIR supplementary services is shown in Figure 3-1/Q.81.

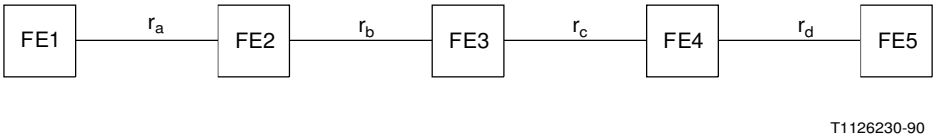


FIGURE 3-1/Q.81

Functional model

3.6.2 *Description of the functional entities*

The functional entities required by the CLIP and CLIR supplementary services above those of the basic call are as follows:

FE1: caller provided information and CLIR requesting entity;

FE2: service information checking entity;

FE3: handling of calling line identity at international gateway;

FE4: service providing entity;

FE5: service requesting entity.

3.6.3 *Relationship with a basic service*

The relationship with a basic service is shown in Figure 3-2/Q.81. The model for basic call handling is defined in Recommendation Q.71.

3.7 *Information flows*

3.7.1 *Information flow diagrams*

Figure 3-3/Q.81 shows the information flow diagrams for the CLIP and the CLIR supplementary services.

3.7.2 *Definition of individual information flows*

Within the definitions below, the PI can take one of the following three rules:

a) presentation allowed;

b) presentation restricted; or

c) number not available.

Within the definitions below, the SI can take one of the following three rules:

a) user provided, verified and passed;

b) network provided; or

c) user provided, not screened.

4 **Recommendation Q.81**

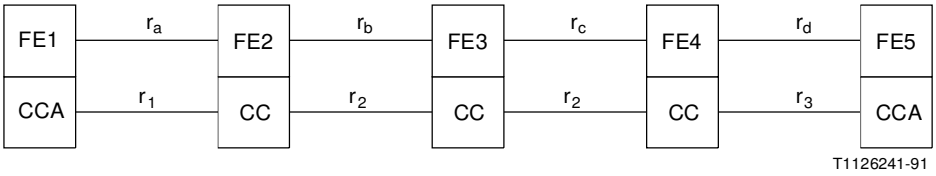


FIGURE 3-2/Q.81

Example of a mapping of the functional model on a model for the basic call

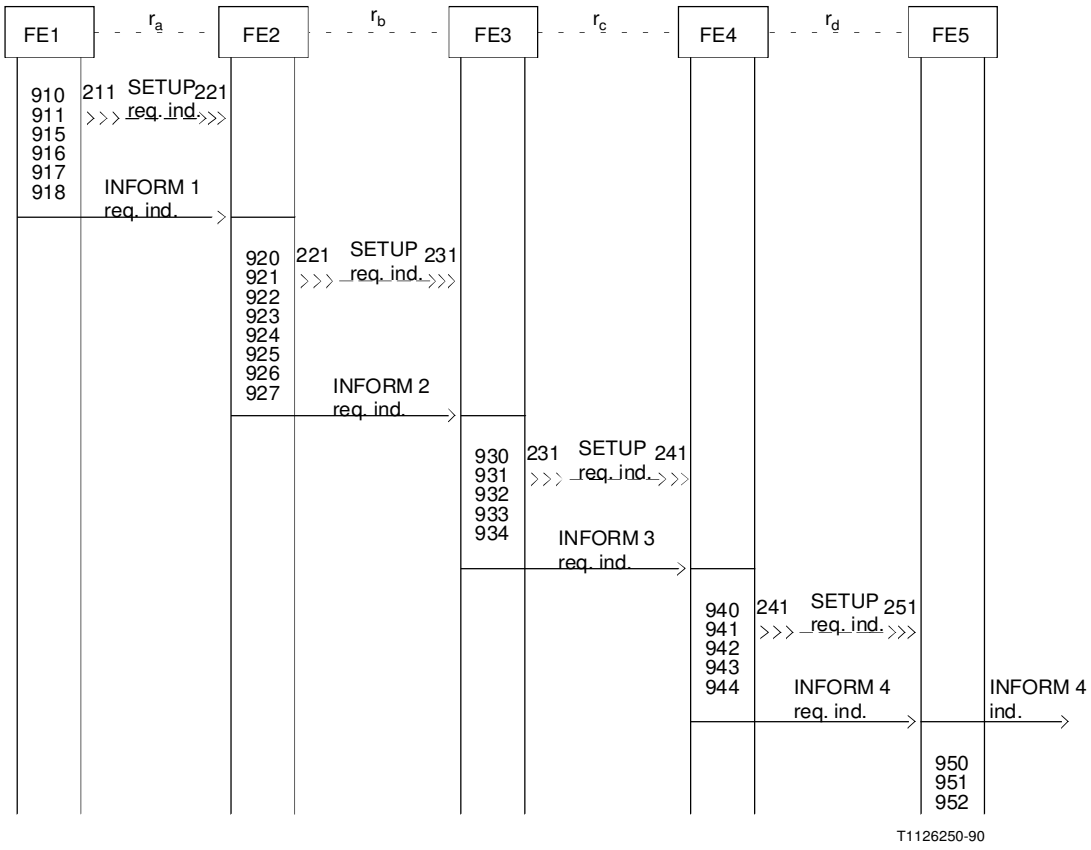


FIGURE 3-3/Q.81

Information flows

3.7.2.1 *Relationship r_a*

3.7.2.1.1 *Contents of INFORM 1*

The contents of the INFORM 1 are shown in Table 3-1/Q.81.

The contents for SETUP are as specified for basic call (see Recommendation Q.71 [5]).

TABLE 3-1/Q.81

INFORM 1 contents

Parameter	Allowed value	Req. ind.
Number information		Opt. (Note 1)
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	Partial number Subscriber number National number International number (Note 2) (Note 5)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 3)
Presentation indicator	Presentation allowed Presentation restricted	Opt. (Note 4)

Mand. Mandatory

Opt. Optional

Note 1 – Included if FE1 provides information.

Note 2 – When a special arrangement exists only national or international number is allowed.

Note 3 – May be omitted even if number information is provided.

Note 4 – This information flow is mandatory only in the case that the CLIR supplementary service temporary mode applies and FE1 wants to override the default PI stored in FE2.

Note 5 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP-Recommendation.

3.7.2.2 *Relationship r_b*

3.7.2.2.1 *Contents of INFORM 2*

The contents of the INFORM 2 are shown in Table 3-2/Q.81. The contents for SETUP are as specified for basic call (see Recommendation Q.71 [5]).

TABLE 3-2/Q.81

INFORM 2 contents

Parameter	Allowed value	Req. ind.
Number information		Mand.
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	National number International number (Note 2)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 1)
Presentation indicator (PI)	Presentation allowed Presentation restricted	Mand.
Screening indicator (SI)	Network provided number User provided number, verified and passed. User provided number, not screened	Mand.

Mand. Mandatory

Opt. Optional

Note 1 – This information flow is included only in the case that FE1 provides the information.

Note 2 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP-Recommendation.

3.7.2.3 *Relationship r_c*

3.7.2.3.1 *Contents of INFORM 3*

The contents of the INFORM 3 are shown in Table 3-3/Q.81. The contents for SETUP are as specified for basic call.

TABLE 3-3/Q.81

INFORM 3 contents

Parameter	Allowed value	Req. ind.
Number information		Mand.
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	National number International number (Note 3)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 1)
Presentation indicator (PI)	Presentation allowed Presentation restricted Number not available	Mand. (Note 2)
Screening indicator (SI)	Network provided number User provided number, verified and passed. User provided number, not screened	Mand.

Mand. Mandatory

Opt. Optional

Note 1 – This information flow is included only in the case that FE1 provides the information.

Note 2 – No number information is provided in the case that the CLIR supplementary service applies and no bilateral agreement exists between the networks for the handling of restricted information.

Note 3 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP-Recommendation.

3.7.2.4 *Relationship r_d*

3.7.2.4.1 *Contents of INFORM 4*

The contents of the INFORM 4 are shown in Table 3-4/Q.81. The contents for SETUP are as specified for basic call.

TABLE 3-4/Q.81

INFORM 4 contents

Parameter	Allowed value	Req. ind.
Number information		Mand.
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	National number International number (Note 3)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 1)
Presentation indicator (PI)	Presentation allowed Presentation restricted Number not available	Mand. (Note 2)
Screening indicator (SI)	Network provided number User provided number, verified and passed. User provided number, not screened	Mand.

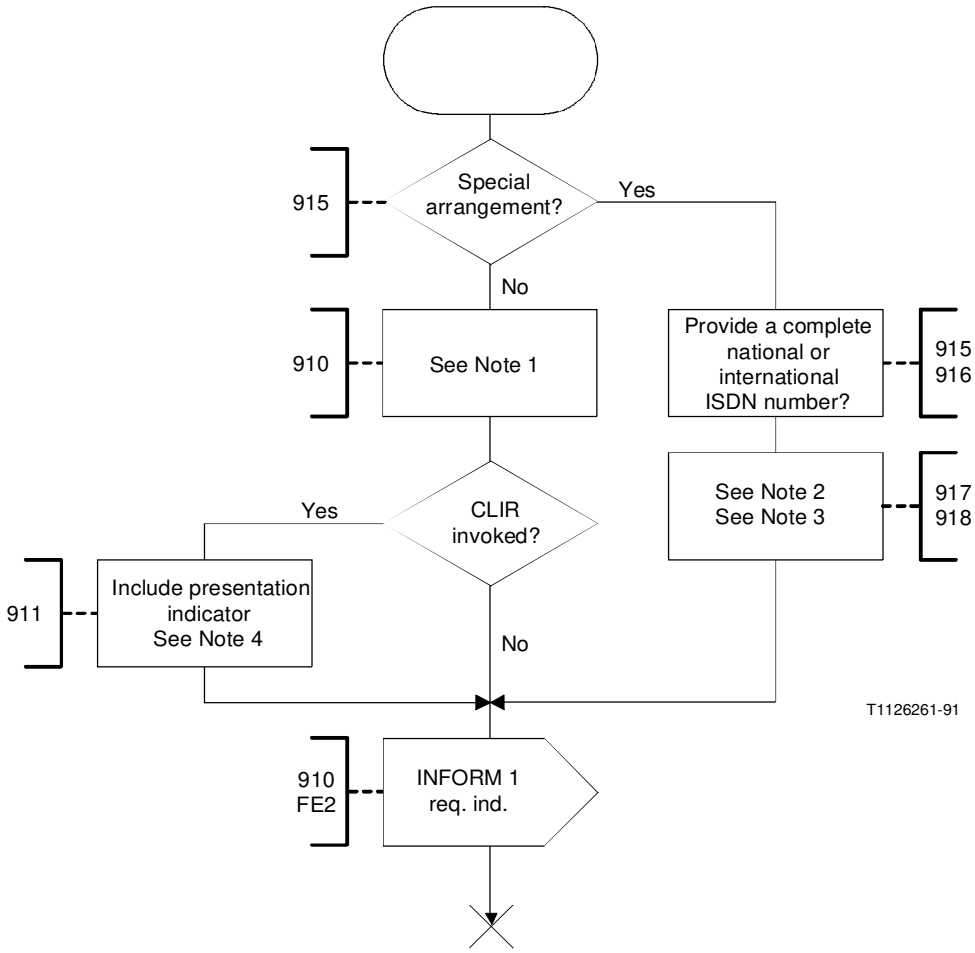
Mand. Mandatory

Opt. Optional

Note 1 – This information flow is included only in the case that FE1 provides the information.

Note 2 – No number information is provided in the case that the CLIR supplementary service applies.

Note 3 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP-Recommendation.



Note 1 – Provide a -partial, or -subscriber, or -national, or -international number according to originating user's request.

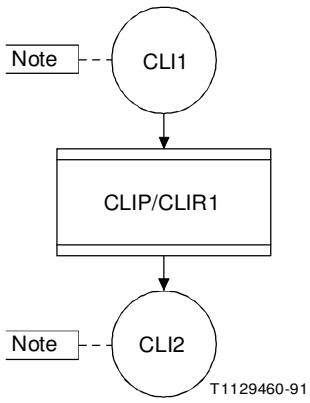
Note 2 – Set type of numbers – national or international number and set numbering plan identification – ISDN number or Private Numbering Plan.

Note 3 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP-Recommendation.

Note 4 – This information is applicable to CLIR temporary mode.

FIGURE 3-4/Q.81

CLIP and CLIR – FE1



Note – CLI1 and CLI2 break the basic call transition:

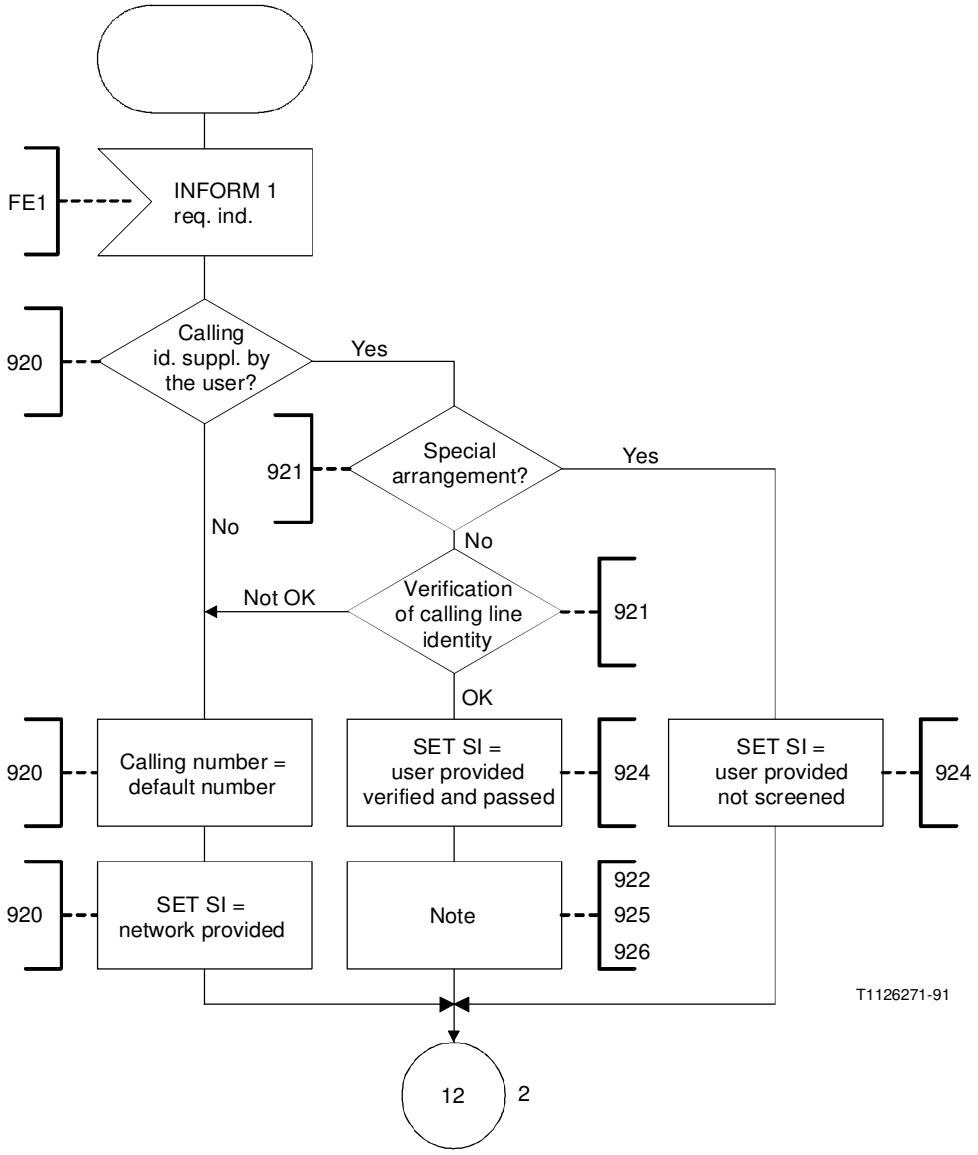
– during FEA211 (see Figure 2-13 (sheet 1 of 5) of Recommendation Q.71 [5]), immediately following the task "Process service request connect". CLI2 reconnects at the same point;

– after sending SETUP req. ind. (see Figure 2-14 (sheet 2 of 7) of Recommendation Q.71 [5]). CLI2 reconnects at the same point; or

– during FEA221 (see Figure 2-14 (sheet 1 of 7) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Successful?". CLI2 reconnects at the same point.

FIGURE 3-5/Q.81

Basic call hooks for FE1



Note – Complete partial number or subscriber number to a national number. Put the number into the format used in the current ISDN. Set type of number and numbering plan identificator.

FIGURE 3-6/Q.81 (sheet 1 of 2)

CLIP and CLIR – FE2

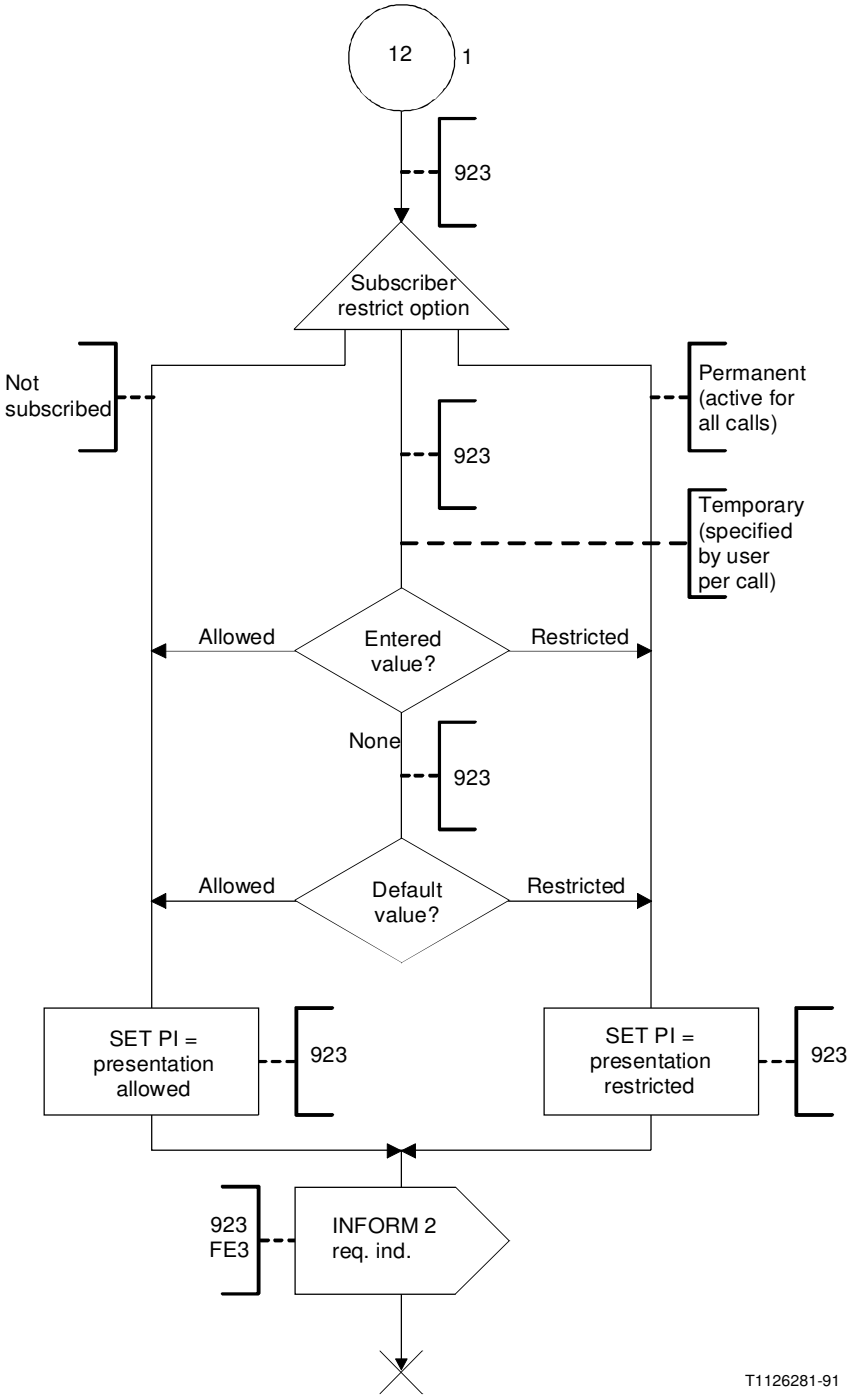
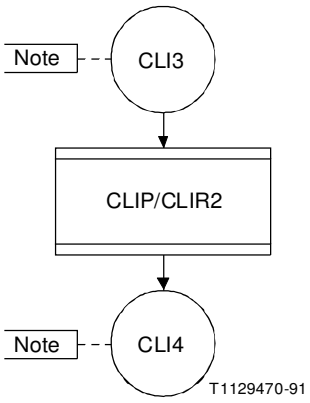


FIGURE 3-6/Q.81 (sheet 2 of 2)

CLIP and CLIR – FE2

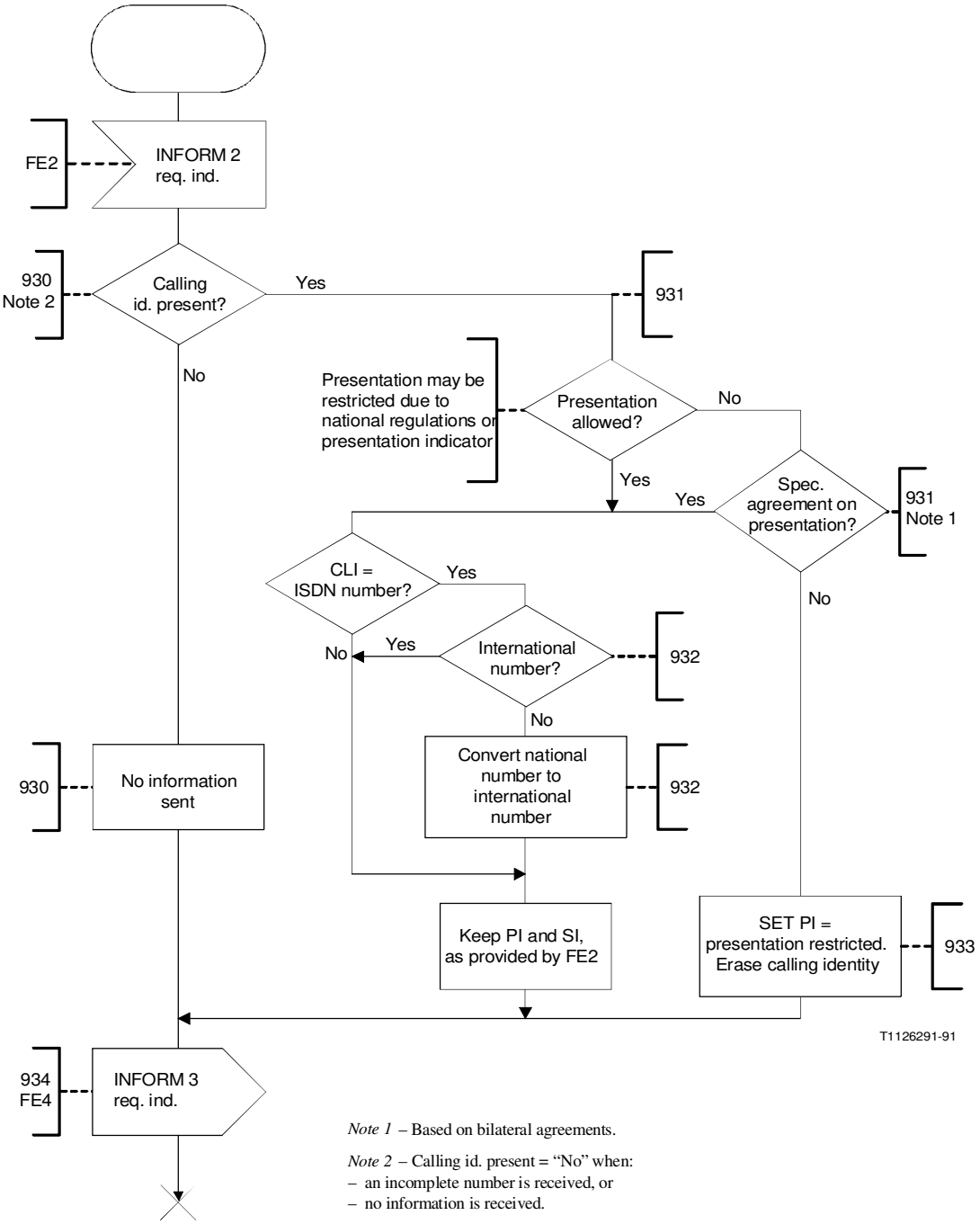


Note – CLI3 and CLI4 break the basic call transition:

– after sending SETUP req. ind. (see Figure 2-14 (sheet 2 of 7) of Recommendation Q.71 [5]). CLI4 reconnects at the same point; or

– during FEA221 (see Figure 2-14 (sheet 1 of 7) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Successful?". CLI4 reconnects at the same point.

FIGURE 3-7/Q.81
Basic call hooks for FE2

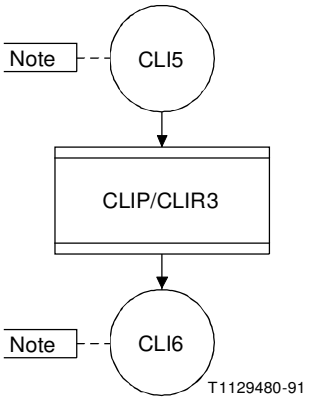


Note 1 – Based on bilateral agreements.

Note 2 – Calling id. present = "No" when:
– an incomplete number is received, or
– no information is received.

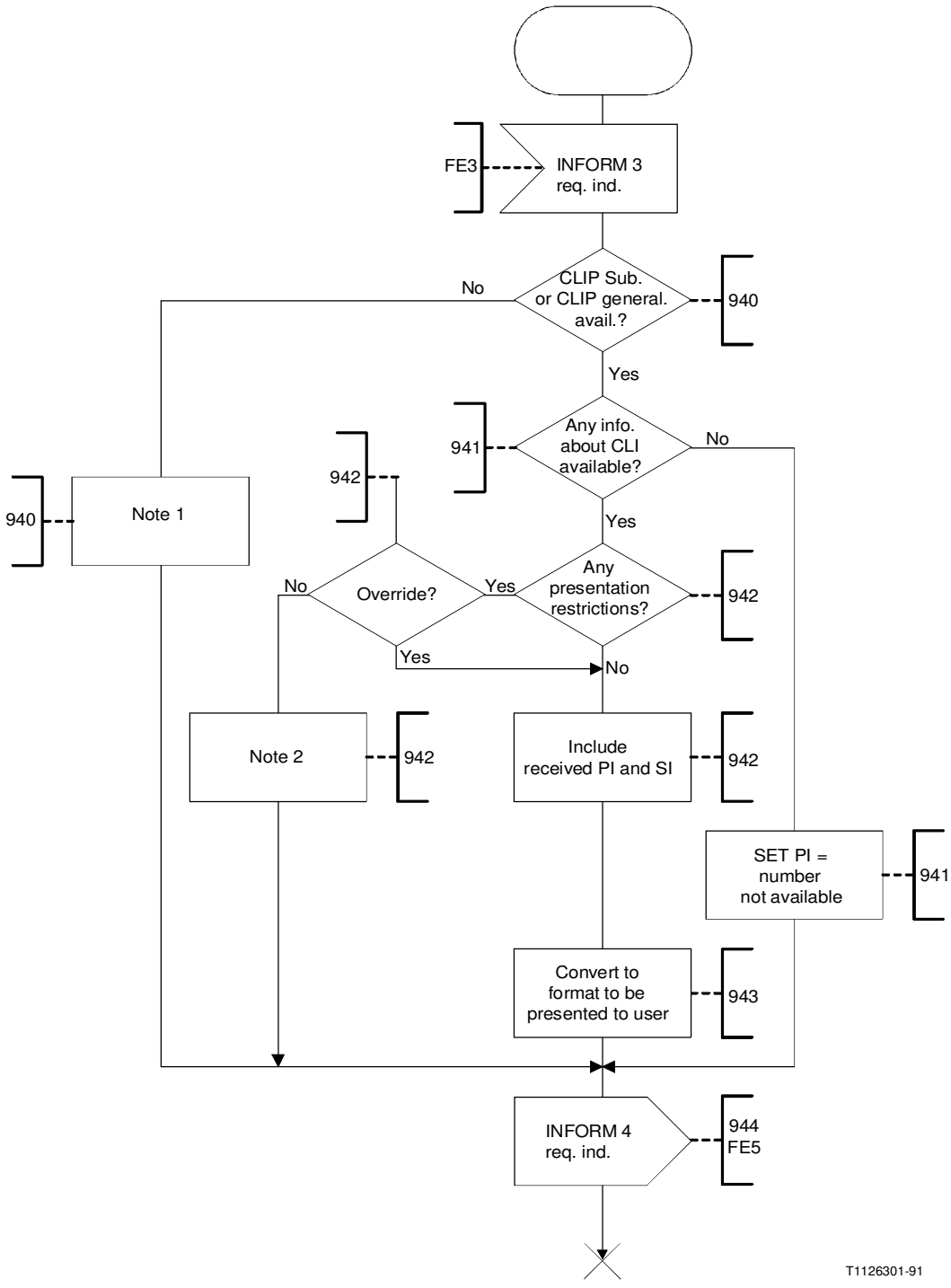
FIGURE 3-8/Q.81

CLIP and CLIR – FE3



Note – CLI5 and CLI6 break the basic call transition during FEA231 (see Figure 2-15 (sheet 1 of 4) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Successful?".
CLI6 reconnects at the same point.

FIGURE 3-9/Q.81
Basic call hooks for FE3

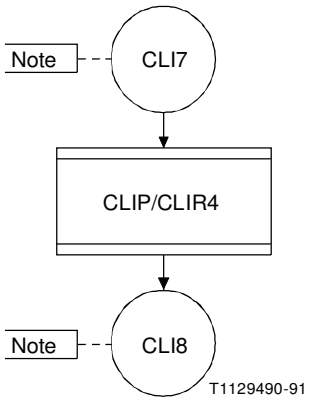


Note 1 – No information about the calling line identity is sent to the called party.

Note 2 – SET PI = presentation restricted. Numbering information will not be presented to the called party.

FIGURE 3-10/Q.81

CLIP et CLIR – FE4



Note – CLI7 and CLI8 break the basic call transition:

– during FEA241 (see Figure 2-16 (sheet 1 of 5) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Successful?". CLI8 reconnects at the same point; or

– during FEA241 (see Figure 2-16 (sheet 1 of 5) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Supplementary services provided". CLI8 reconnects on the "No" branch of the same decision.

FIGURE 3-11/Q.81

Basic call hooks for FE4

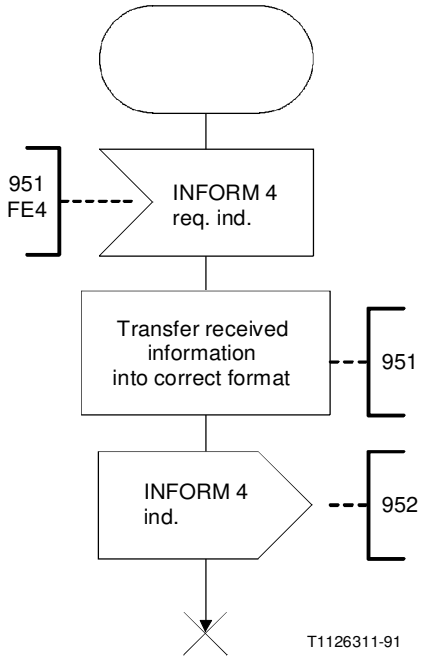
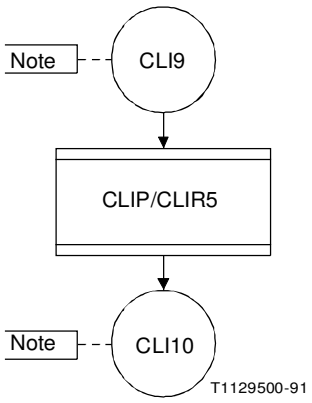


FIGURE 3-12/Q.81

CLIP and CLIR – FE5



Note – CLI9 and CLI10 break the basic call transition:

– during FEA251 (see Figure 2-17 (sheet 1 of 4) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Successful?". CLI8 reconnects at the same point;

– during FEA251 (see Figure 2-17 (sheet 1 of 4) of Recommendation Q.71 [5]), immediately following the "Yes" branch of the decision "Supplementary services provided". CLI8 reconnects on the "No" branch of the same decision.

FIGURE 3-13/Q.81

Basic call hooks for FE5

3.9 *Functional entity actions (FEAs)*

3.9.1 *FEAs for FE1*

910: FE1 shall receive and shall forward originating users service requests to FE2;

911: FE1 shall request the CLIR supplementary service temporary mode (override of network stored value of presentation indicator);

915: in the case of a special arrangement, FE1 shall screen the number to be provided;

916: in the case of a special arrangement, FE1 shall complete the number to national or international format (for ISDN-numbers);

917: FE1 shall set the type of number;

918: FE1 shall set the numbering plan identification.

3.9.2 *FEAs of FE2*

920: FE2 shall check if calling line identity is provided by FE1 and if not, shall include the default calling line identity with presentation indicator set to "network provided";

921: FE2 shall verify calling line identity (unless a special arrangement for not screening the number exists);

922: FE2 shall complete a partial number or a subscriber number to a national number. FE2 shall put the number into the format used in the current ISDN;

923: FE2 shall set the presentation indicator;

924: FE2 shall set the screening indicator;

925: FE2 shall set the type of number (when a special arrangement exists, FE1 shall also set the type of number);

926: FE2 shall set the numbering plan identification (when a special arrangement exists, FE1 shall also set the numbering plan identification);

927: FE2 shall forward the information to FE3.

3.9.3 *FEAs of FE3*

In the case of a national call, FE3 has null functionality.

930: FE3 shall check if a partial number, or no information, is received. In this case no information is sent to FE4;

931: FE3 shall check if the calling line identity may be passed between the networks;

932: FE3 shall convert national ISDN-number to an international significant ISDN number if not already in this form. Number belonging to other numbering plans shall be passed transparently;

933: if a number cannot be passed to FE4, FE3 shall erase the number and sub-address information and shall set the presentation indicator to "number not available";

934: FE3 shall forward the information to FE4.

3.9.4 *FEAs for FE4*

940: FE4 shall check if the CLIP supplementary service is subscribed;

941: FE4 shall check if calling line identity is provided. If the number is not available, then FE4 shall set the presentation indicator to "number not available";

942: FE4 shall check if presentation restrictions exist. If presentation restrictions exist, the number and sub-address information shall be erased, no number information shall be sent to the calling party and the received presentation indicator (PI) showing "presentation restricted" shall be sent to FE5 unless FE5 has the override category. If FE5 has such a category, then all the received information shall be sent to FE5;

943: FE4 shall transfer the received information into a format that makes it usable by FE5 (e.g. adding prefixes);

944: FE4 shall forward the information to FE5.

3.9.5 *FEAs for FE5*

950: FE5 shall receive the service information from FE4;

951: FE5 shall transfer the received information into a format that makes it usable for returning a call;

952: FE5 shall present the received information to the served user.

3.10 *Allocation of functional entities to physical locations*

The possible locations of functional entities FE1, FE2, FE3, FE4 and FE5 are shown in Table 3-5/Q.81.

TABLE 3-5/Q.81

Locations of functional entities

Scenarios	FE1	FE2	FE3	FE4	FE5
1	TE	LE	–	LE	TE
2	TE	LE	INT TR	LE	TE
3	PNX	LE	–	LE	TE
4	PNX	LE	INT TR	LE	PNX
5	PNX	LE	–	LE	TE
6	PNX	LE	INT TR	LE	TE
7	TE	LE	–	LE	PNX
8	TE	LE	INT TR	LE	PNX

ANNEX A

(to § 3 of Recommendation Q.81)

Two calling-line-identities delivery option

A.1 *Scope*

This annex specifies the additional procedures of the CLIP supplementary service that may be supported as a national network option.

These national procedures shall have no impact and shall place no requirements whatsoever on the provision and operation of the CLIP supplementary service defined in this Recommendation by public ISDNs that do not support these additional procedures, nor on the interchangeability of terminals.

A.2 *Additional procedures of FE4*

If the procedures for delivery of the calling line identity as described in § 3.8 (SDL diagram for FE4) apply and the screening indicator is set to "user provided not screened", then the FE4 shall send the second calling line identity immediately following the first calling line identity. The second calling line identity shall be the default calling line identity of the access of the calling party. The second calling line identity shall be provided according to procedures described in this Recommendation.

In all other cases, only the first calling line identity shall be sent.

5 Connected Line Identification, presentation and restriction (COLP and COLR)

5.1 *Scope*

This Recommendation defines the stage 2 of the integrated services digital network (ISDN) as provided by public telecommunications operators for the Connected Line Identification Presentation (COLP) and Connected Line Identification Restriction (COLR) supplementary services. Stage 2 identifies the functional capabilities and the information flows needed to support the service description. The stage 2 description also identifies user operations not directly associated with a call (see Recommendation I.130 [1]).

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

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

In addition, this Recommendation does not specify the requirements where the service is provided to the user via a private ISDN. This Recommendation 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 Recommendation does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

The COLP supplementary service provides the calling party with the possibility to receive identification of the connected party.

The COLR supplementary service enables the connected party to prevent presentation of its ISDN number to the calling party.

The COLP and COLR supplementary services are applicable to all telecommunication services.

This Recommendation is applicable to the stage 3 standards for the ISDN COLP and COLR supplementary services. The term "stage 3" is defined in Recommendation I.130 [1].

5.2 *References*

These 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 Recommendation only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] CCITT Rec. I.130 [1988] – Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN.

[2] CCITT Rec. Q.65 – Stage 2 of the method for the characterization of services supported by an ISDN.

[3] CCITT Rec. I.251.5 – Connected Line Identification Presentation (COLP).

[4] CCITT Rec. I.251.6 – Connected Line Identification Restriction (COLR).

[5] CCITT Rec. Q.71 – ISDN 64 kbit/s circuit mode switched beared services.

[6] CCITT Rec. I.112 – Vocabulary of terms for ISDNs.

[7] CCITT Rec. I.210 – Principles of telecommunication services supported by an ISDN and the means to describe them.

[8] CCITT Rec. E.164 – Numbering plan for the ISDN era.

[9] CCITT Rec. I.330 – ISDN numbering and addressing principles.

[10] CCITT Rec. Q.86, Section 4 – Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service; Functional capabilities and information flows.

5.3 *Definitions*

For the purpose of this Recommendation, the following definitions apply:

integrated services digital network (ISDN)

See definition 308 of § 2.3 of Recommendation I.112 [6].

service, telecommunications service

See definition 201 of § 2.2 of Recommendation I.112 [6].

supplementary service

See § 2.4 of Recommendation I.210 [7].

ISDN number

A number conforming to the numbering plan and structure specified in Recommendation E.164 [8].

PNP number

A number conforming to the numbering plan and structure in a private network.

sub-address

See § 5.4 of Recommendation I.330 [9].

connected line identity

The address (the ISDN number, and if supplied the sub-address) of the connected line, and the screening indicator. If these are not available the reason is indicated, via the presentation indicator.

presentation indicator (PI)

The PI presentation indicator provides instructions on whether or not the provided connected line identity is allowed to be presented or not, or indicates that the number is not available.

screening indicator (SI)

The SI provides information on the source and the quality of the provided information.

5.4 *Symbols and abbreviations*

COLP Connected Line Identification Presentation

COLR Connected Line Identification Restriction

PI Presentation indicator

SI Screening indicator

ISDN Integrated services digital network

TE Terminal equipment

PNX Private network exchange

LE Local exchange

INT TR International transit exchange

FEA Functional entity action

SDL Specification and description language

PNP Private Numbering Plan

5.5 *Description*

The relationship between the COLP and the COLR supplementary services is described in § 5.3.4.2 of Recommendation I.251.5 [3], and in Recommendation I.251.6 [4].

The provisions for overriding the COLR supplementary service are described in § 5.3.4.2 of Recommendations I.251.5 [3], and in Recommendation I.251.6 [4].

5.6 *Derivation of a functional model*

5.6.1 *Functional model description*

The model for the COLP and COLR supplementary services is shown in Figure 5-1/Q.81.

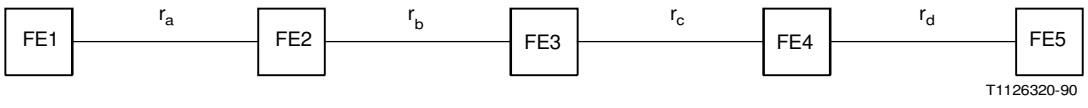


FIGURE 5-1/Q.81

Functional model

5.6.2 *Description of the functional entities*

The functional entities required by the COLP and COLR supplementary services above those of the basic call are as follows:

FE1: service requesting entity

FE2: service providing entity

FE3: handling of connected line identity at international gateway

FE4: service information checking entity

FE5: connected party provided information and COLR requesting entity.

5.6.3 *Relationship with a basic service*

The relationship with a basic service is shown in Figure 5-2/Q.81. The model for basic call handling is defined in Recommendation Q.71.

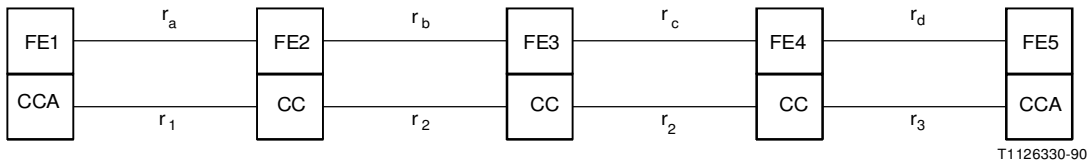


FIGURE 5-2/Q.81

Example of a mapping of the functional model on a model for the basic call

5.7 *Information flows*

5.7.1 *Information flow diagrams*

Figure 5-3/Q.81 shows the information flow diagrams for the COLP and COLR supplementary services.

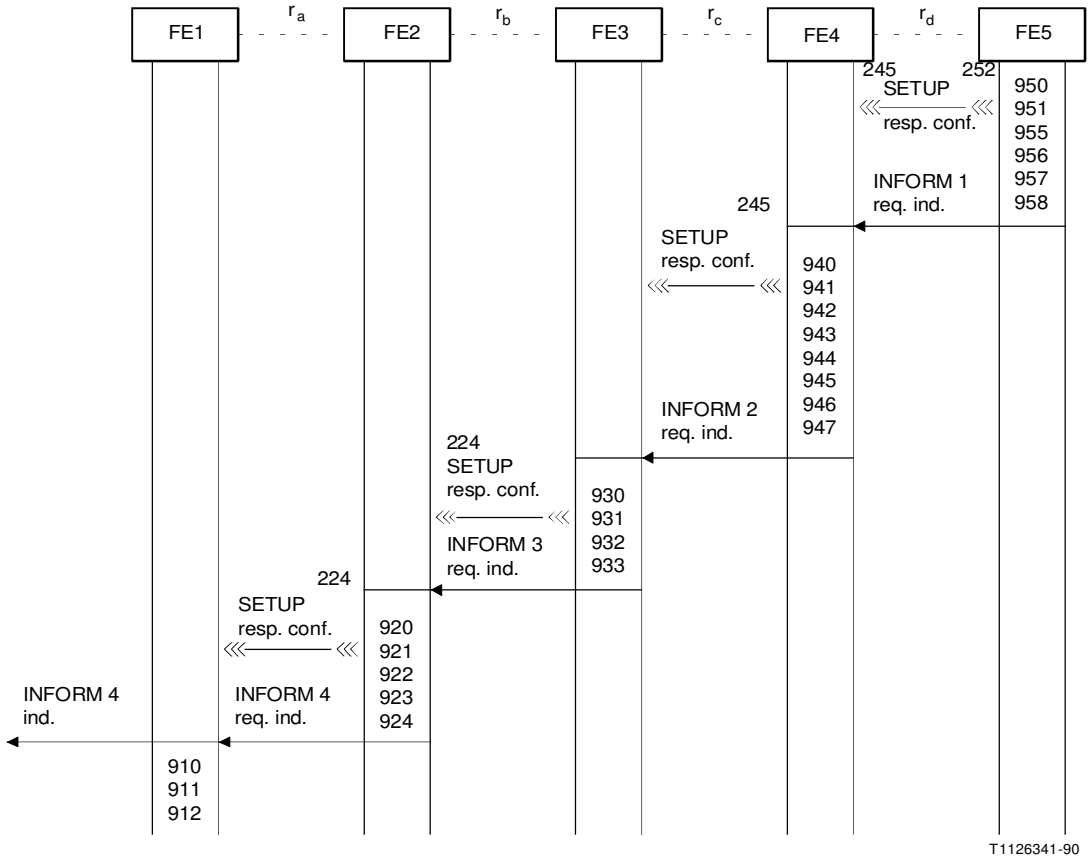


FIGURE 5-3/Q.81

Information flow diagrams for COLP and COLR

5.7.2 *Definition of individual information flows*

Within the definitions below, PI can take one of the following three rules:

a) presentation allowed;

b) presentation restricted; or

c) number not available.

Within the definitions below, SI can take one of the following three rules:

a) user provided, verified and passed;

b) network provided; or

c) user provided, not-screened.

5.7.2.1 *Relationship r_a*

5.7.2.1.1 *Contents of INFORM 4*

The contents of the INFORM 4 are shown in Table 5-1/Q.81. The contents for SETUP are as specified for basic call (see Recommendation Q.71 [5]).

TABLE 5-1/Q.81

INFORM 4 contents

Parameter	Allowed value	Req. ind.
Number information		Mand.
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	National number International number (Note 3)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 1)
Presentation indicator (PI)	Presentation allowed Presentation restricted Number not available	Mand. (Note 2)
Screening indicator (SI)	Network provided number User provided number, verified and passed. User provided number, not screened	Mand.

Mand. Mandatory

Opt. Optional

Note 1 – This information flow is included only in the case that FE5 provides the information.

Note 2 – No number information is provided in the case that the COLR supplementary service applies.

Note 3 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP Recommendation.

5.7.2.2 *Relationship r_b*

5.7.2.2.1 *Contents of INFORM 3*

The contents of the INFORM 3 are shown in Table 5-2/Q.81. The contents for SETUP are as specified for basic call (see Recommendation Q.71 [5]).

TABLE 5-2/Q.81

INFORM 3 contents

Parameter	Allowed value	Req. ind.
Number information		Mand.
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	National number International number (Note 3)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 1)
Presentation indicator (PI)	Presentation allowed Presentation restricted Number not available	Mand. (Note 2)
Screening indicator (SI)	Network provided number User provided number, verified and passed. User provided number, not screened	Mand.

Mand. Mandatory

Opt. Optional

Note 1 – This information flow is included only in the case that FE5 provides the information.

Note 2 – No number information is provided in the case that the COLR supplementary service applies and no bilateral agreement exists between the networks for the handling of restricted information.

Note 3 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP Recommendation.

5.7.2.3 *Relationship r_c*

5.7.2.3.1 *Contents of INFORM 2*

The contents of the INFORM 2 are shown in Table 5-3/Q.81. The contents for SETUP are as specified for basic call (see Recommendation Q.71 [5]).

TABLE 5-3/Q.81

INFORM 2 contents

Parameter	Allowed value	Req. ind.
Number information		Mand.
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	National number International number (Note 2)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 1)
Presentation indicator (PI)	Presentation allowed Presentation restricted	Mand.
Screening indicator (SI)	Network provided number User provided number, verified and passed. User provided number, not screened	Mand.

Mand. Mandatory

Opt. Optional

Note 1 – This information flow is included only in the case that FE5 provides the information.

Note 2 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP Recommendation.

5.7.2.4 *Relationship r_d*

5.7.2.4.1 *Contents of INFORM 1*

The contents of the INFORM 1 are shown in Table 5-4/Q.81. The contents for SETUP are as specified for basic call (see Recommendation Q.71 [5]).

TABLE 5-4/Q.81

INFORM 1 contents

Parameter	Allowed value	Req. ind.
Number information		Opt. (Note 1)
– Numbering plan identification	ISDN number Private Numbering Plan	Mand.
– Type of number	Partial number Subscriber number National number International number (Note 2) (Note 5)	Mand.
– Number digits		Mand.
– Sub-address		Opt. (Note 3)
Presentation indicator (PI)	Presentation allowed Presentation restricted	Opt. (Note 4)

Mand. Mandatory

Opt. Optional

Note 1 – Included if FE5 provides information.

Note 2 – When a special arrangement exists, only the national or international number is allowed.

Note 3 – May be omitted even if number information is provided.

Note 4 – This information flow is included only in the case that the CLOR supplementary service temporary mode applies and FE5 wants to override the default PI stored in FE4.

Note 5 – In the case of the supplementary service Private Numbering Plan (PNP), other types of number may be required and will be specified in the PNP Recommendation.

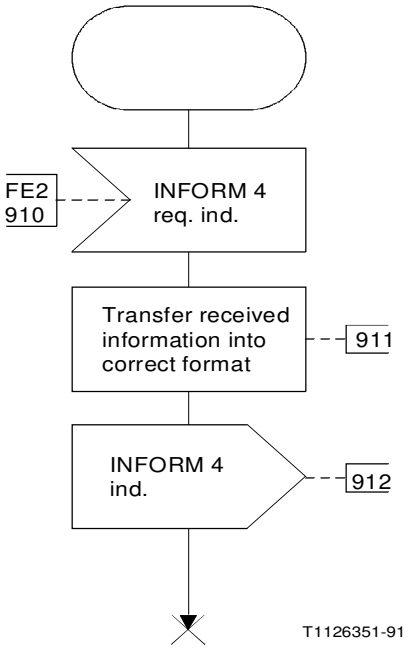
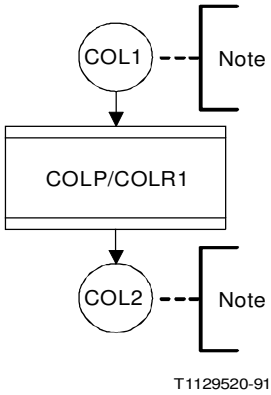


FIGURE 5-4/Q.81

COLP and COLR – FE1



Note – COL1 and COL2 break the basic call transition:

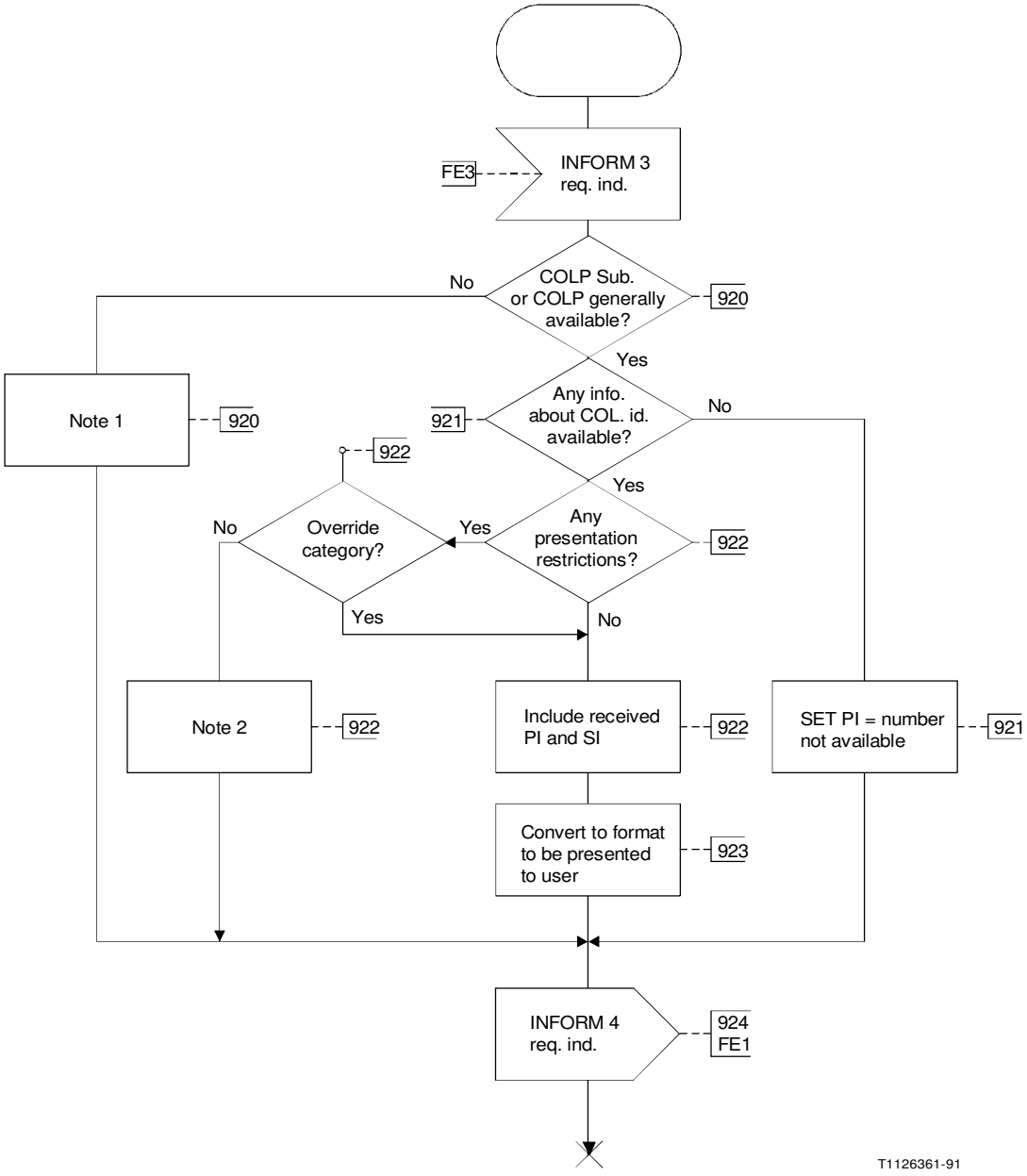
– following the receipt of the SETUP resp. conf. (see Figure 2-13 (sheet 1 of 5) of Recommendation Q.71 [5]), following state "1 CALL SENT" and " 2 CONNECTION PROCEEDING". COL2 reconnects at the same point;

– following the receipt of the SETUP resp. conf. (see Figure 2-14 (sheet 2 of 7) of Recommendation Q.71 [5]), following state "1 r_1-r_2 CALL SENT" and following the receipt of the SETUP resp. conf. (see Figure 2-14 (sheet 3 of 7) of Recommendation Q.71 [5]), following state "26 r_1-r_2 CALL SENT (alerting)". COL2 reconnects at the same point; or

– following the receipt of the SETUP resp. conf. (see Figure 2-9 (sheet 11 of 19) of Recommendation Q.71 [5]), following state "18 r_2-r_2 CALL SENT". COL2 reconnects at the same point.

FIGURE 5-5/Q.81

Hooks to basic call for FE1

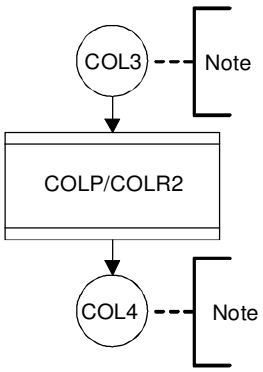


Note 1 – No information about the COL identity is sent to the calling party.

Note 2 – SET PI – presentation restricted. Erase number information. No number information shall be presented to the calling party.

FIGURE 5-6/Q.81

COLP and COLR – FE2



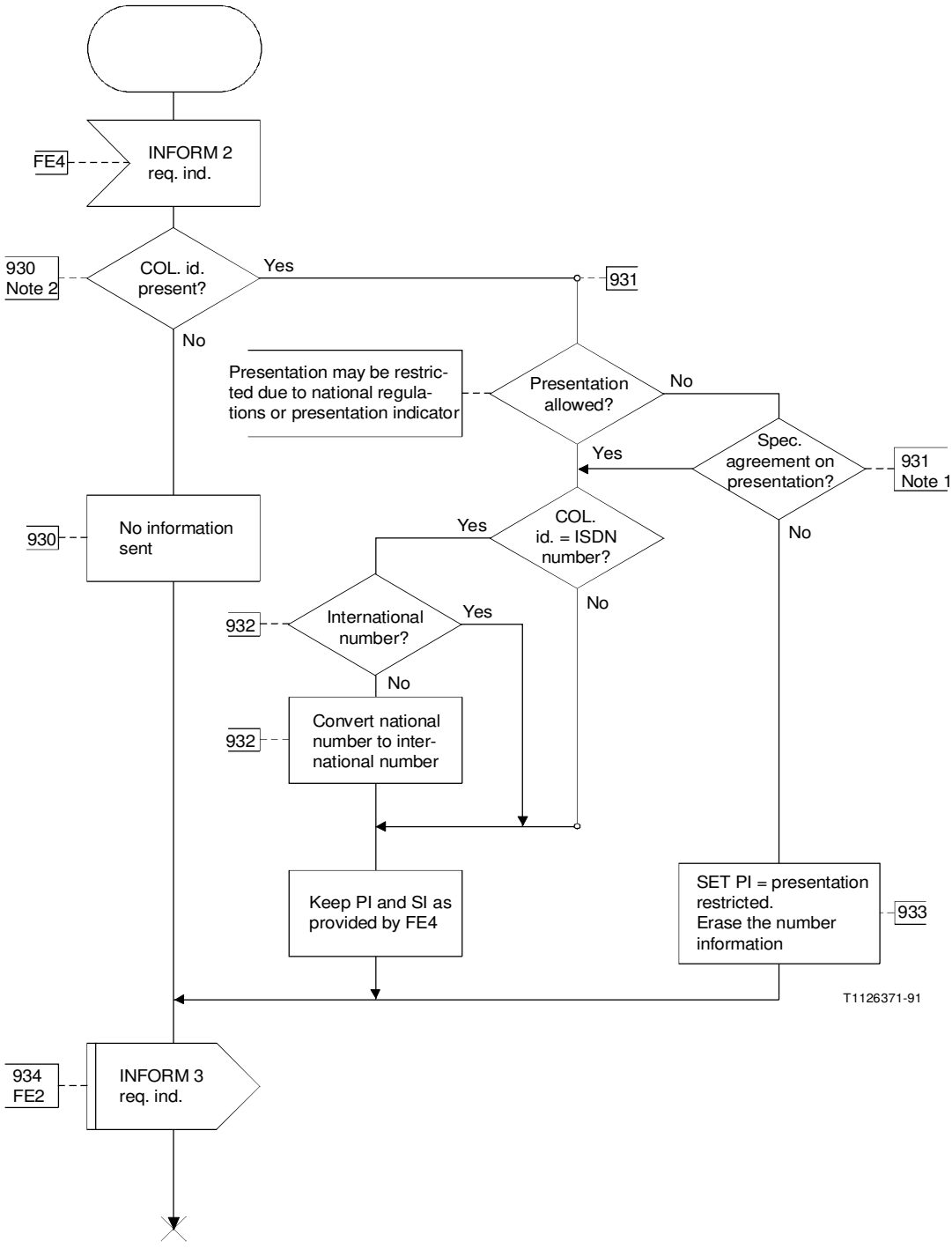
Note – COL3 and COL4 break the basic call transition:

– following the receipt of the SETUP resp. conf. (see Figure 2-14 (sheet 2 of 7) of Recommendation Q.71 [5]), following state "1 r_1-r_2 CALL SENT" and following the receipt of the SETUP resp. conf. (see Figure 2-14 (sheet 3 of 7) of Recommendation Q.71 [5]), following state "26 r_1-r_2 CALL SENT (alerting)". COL4 reconnects at the same point; or

– following the receipt of the SETUP resp. conf. (see Figure 2-15 (sheet 2 of 4) of Recommendation Q.71 [5]), following state "18 r_2-r_2 CALL SENT". COL4 reconnects at the same point.

FIGURE 5-7/Q.81

Hooks to basic call for FE2

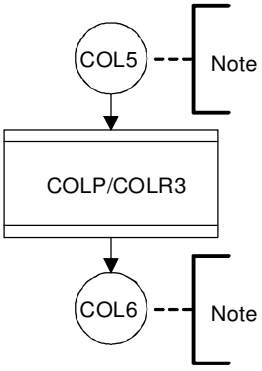


Note 1 – Based on bilateral agreements.

Note 2 – COL. id. present = "No" when:
– an incomplete number is received, or
– no information is received.

FIGURE 5-8/Q.81

COLP and COLR – FE3

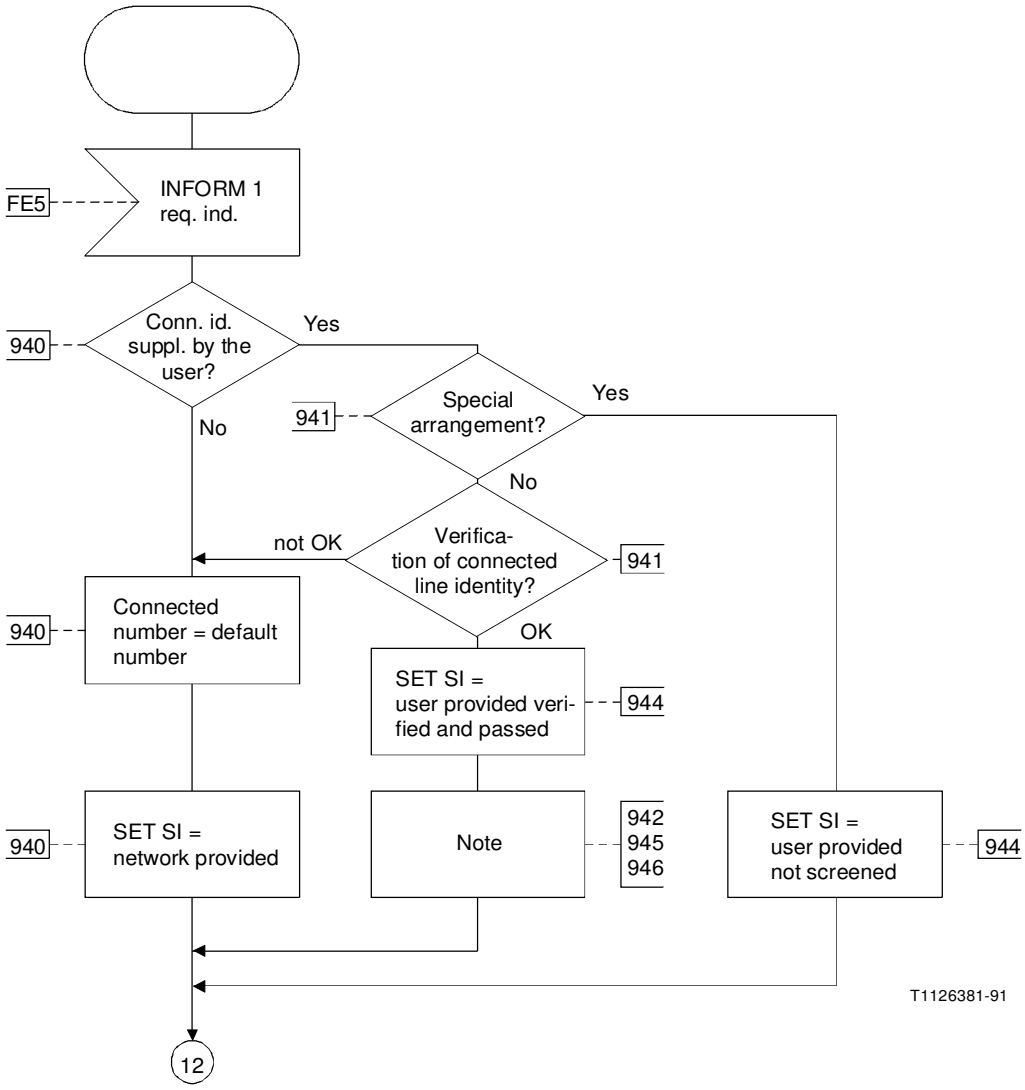


Note – COL5 and COL6 break the basic call transition:

– following the receipt of the SETUP resp. conf. (see Figure 2-15 (sheet 2 of 4) of Recommendation Q.71 [5]), following state "18 r_2-r_2 CALL SENT", COL6 reconnects at the same point.

FIGURE 5-9/Q.81

Hooks to basic call for FE3



Note – Complete partial number or subscriber number to a national number. Put the number into the format used in the current ISDN. Set type of number and numbering plan identification.

FIGURE 5-10/Q.81

COLP and COLR – FE4

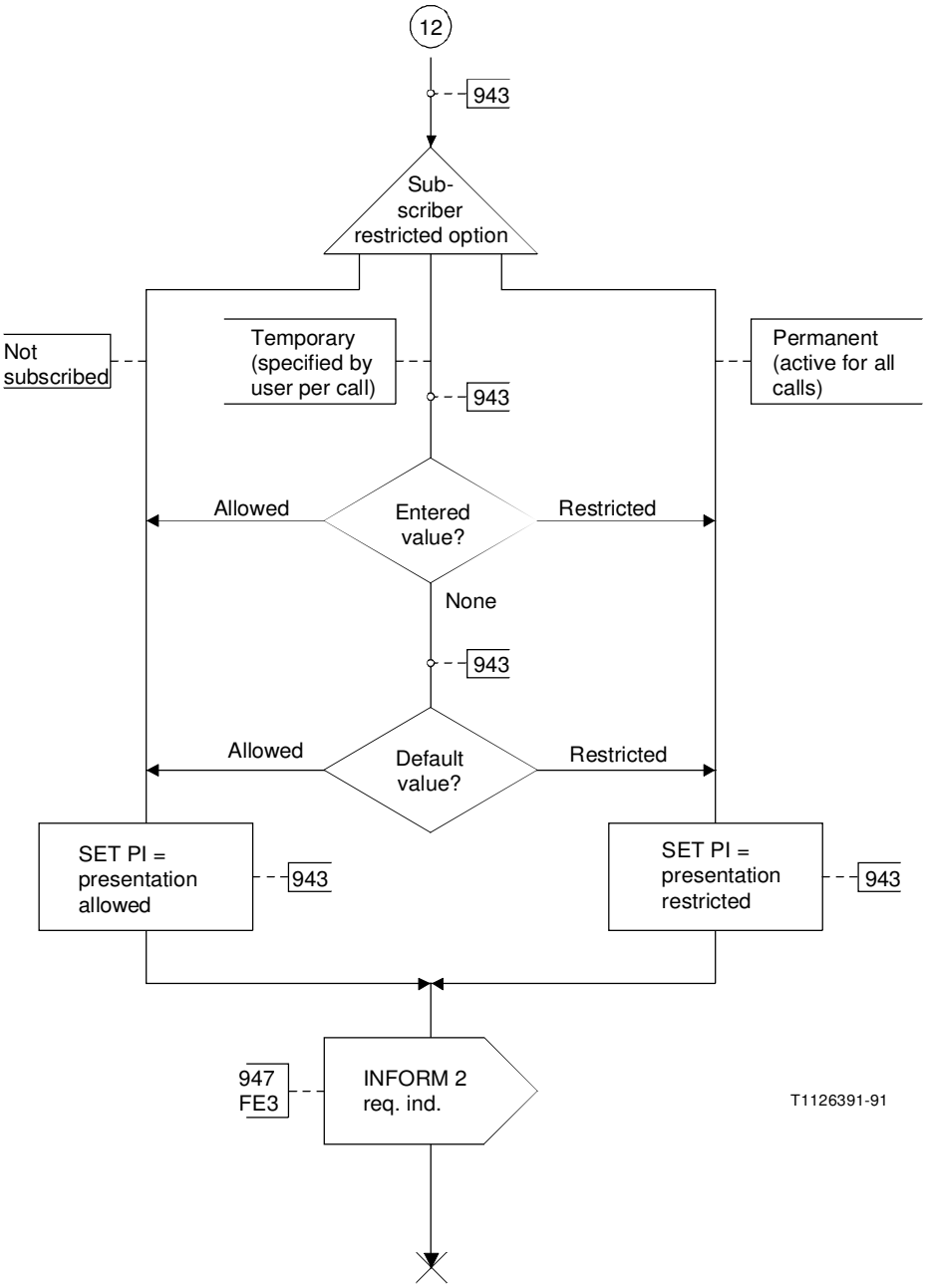
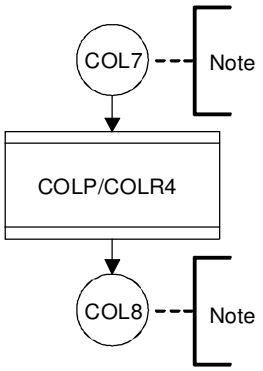


FIGURE 5-11/Q.81

COLP and COLR – FE4



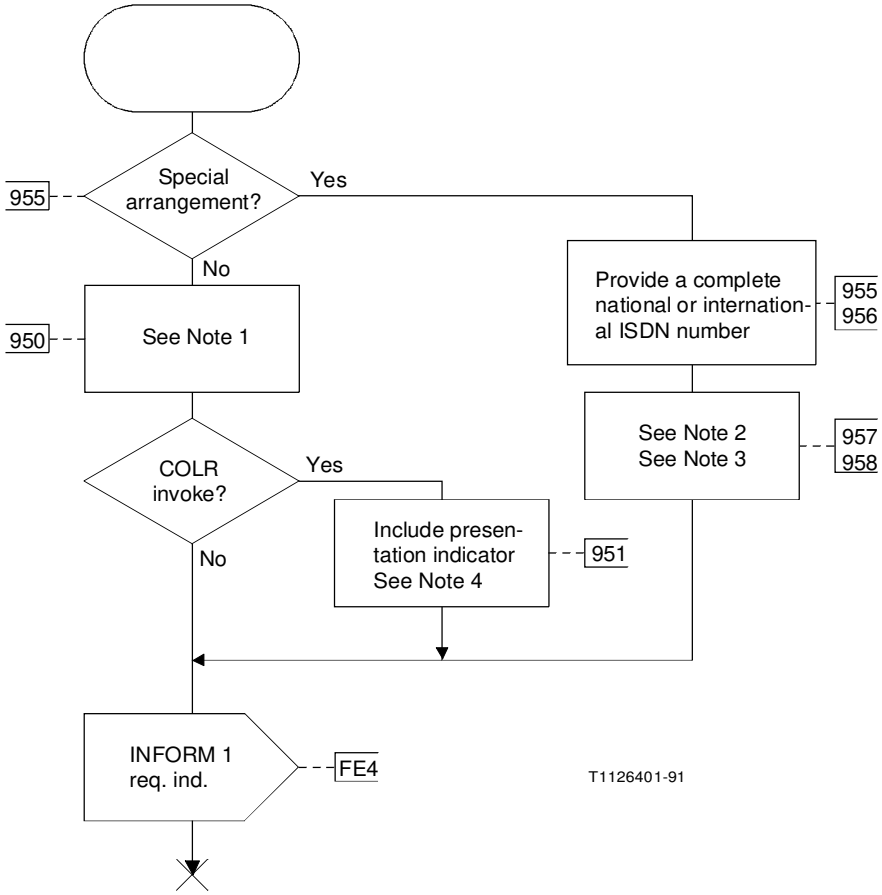
Note – COL7 and COL8 break the basic call transition:

– following the receipt of the SETUP resp. conf. (see Figure 2-15 (sheet 2 of 4) of Recommendation Q.71 [5]), following state "18 r = r CALL SENT". COL8 reconnects at the same point; or

– following the receipt of the SETUP resp. conf. (see Figure 2-16 (sheet 2 of 5) of Recommendation Q.71 [5]), following state "17 r = r CALL SENT". COL8 reconnects at the same point.

FIGURE 5-12/Q.81

Hooks to basic call for FE4



Note 1 – Provide a partial, subscriber, national or international number according to destination user's request.

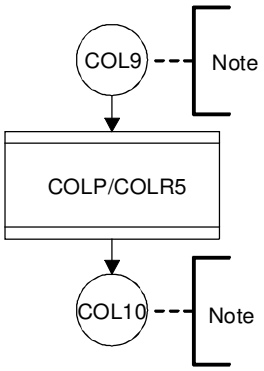
Note 2 – Set type of number – national or international number and set numbering plan identification – ISDN number.

Note 3 – In the case of the supplementary service Private Numbering Plan (PNP) other types of numbers may be required. Those will be specified in Recommendation Q.85, § 2.

Note 4 – This information is applicable to COLR temporary mode.

FIGURE 5-13/Q.81

COLP and COLR – FE5



Note – COL9 and COL10 break the basic call transition:

– following the receipt of the SETUP resp. conf. (see Figure 2-15 (sheet 2 of 4) of Recommendation Q.71 [5]), following state "r_2-r_2 CALL SENT". COL10 reconnects at the same point; or

– following the receipt of the SETUP resp. conf. (see Figure 2-16 (sheet 2 of 5) of Recommendation Q.71 [5]), following state "r_2-r_1 CALL SENT". COL10 reconnects at the same point; or

– following the receipt of the SETUP resp. (see Figure 2-17 (sheet 2 of 6) of Recommendation Q.71 [5]), following state "INCOMING SETUP". COL10 reconnects at the same point.

FIGURE 5-14/Q.81

Hooks to basic call for FE5

5.9 *Functional entity actions (FEAs)*

5.9.1 *FEAs of FE1*

910: FE1 shall receive the service information from FE2;

911: FE1 shall transfer the received information into a format that makes it usable for establishing a call;

912: FE1 shall present the received information to the served user.

5.9.2 *FEAs of FE2*

920: FE2 shall check if the COLP supplementary service is subscribed to;

921: FE2 shall check if the connected line identity is provided. If the number is not available, then FE2 shall set the presentation indicator to "number not available";

922: FE2 shall check if presentation restrictions exist. If presentation restrictions exist, the number and sub-address information shall be erased, no number information shall be sent to the calling party and the received presentation indicator (PI) showing "presentation restricted" shall be sent to FE1 unless FE5 has the override category. If FE1 has such a category, then all the received information shall be sent to FE1;

923: FE2 shall transfer the received information into a format that makes it usable by FE1 (e.g. adding prefixes);

924: FE2 shall forward the information to FE1.

5.9.3 *FEAs of FE3*

In the case of a national call, FE3 has null functionality.

930: FE3 shall check if a partial number or no information is received. In this case no information is sent to FE2;

931: FE3 shall check if the connected line identity may be passed between the networks;

932: FE3 shall convert a national number to an international ISDN number if not already in this form. Number belonging to other numbering plans shall be passed transparently;

933: if a number cannot be passed to FE2, FE3 shall erase the number and sub-address information and shall set the presentation indicator to "number not available".

934: FE3 shall forward the information to FE2.

5.9.4 *FEAs of FE4*

940: FE4 shall check if the connected line identity is provided by FE5 and if not, shall include the default connected line identity with the presentation indicator set to "network provided";

941: FE4 shall verify connected line identity (unless a special arrangement for not screening the number exists);

942: FE4 shall complete a partial number or a subscriber number to a national number. FE4 shall put the number into the format used in the current ISDN;

943: FE4 shall set the presentation indicator;

944: FE4 shall set the screening indicator;

945: FE4 shall set the type of number (when a special arrangement exists, FE5 shall also set the type of number);

946: FE4 shall set the numbering plan identification (when a special arrangement exists, FE5 shall also set the numbering plan identification);

947: FE4 shall forward the information to FE3.

5.9.5 *FEAs of FE5*

950: FE5 shall receive and shall forward destination users service requests to FE4;

951: FE5 shall request the COLR supplementary service temporary mode (override of network stored value of presentation indicator);

955: in the case of a special arrangement, FE5 shall screen the number to be provided;

956: in the case of a special arrangement, FE5 shall complete the number to national or international format (for ISDN numbers);

957: FE5 shall set the type of number;

958: FE5 shall set the numbering plan identification.

5.10 *Allocation of functional entities to physical locations*

The possible locations of functional entities FE1, FE2, FE3, FE4 and FE5 are shown in Table 5-5/Q.81.

TABLE 5-5/Q.81

Scenarios	FE1	FE2	FE3	FE4	FE5
1	TE	LE	–	LE	TE
2	TE	LE	INT TR	LE	TE
3	PNX	LE	–	LE	PNX
4	PNX	LE	INT TR	LE	PNX
5	PNX	LE	–	LE	TE
6	PNX	LE	INT TR	LE	TE
7	TE	LE	–	LE	PNX
8	TE	LE	INT TR	LE	PNX

5.11 *Interactions with other supplementary services*

The COLP supplementary service interacts with the freephone supplementary service in such a way that when the freephone supplementary service is used, the served user shall receive the freephone number as the connected line identification. The description of this is included in the stage 2 description of the freephone supplementary service (see Recommendation Q.86, Section 4 [10]).