



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



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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.

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Recommendation Q.81

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

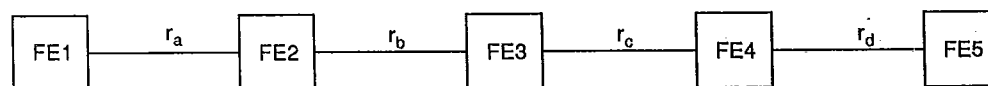
The relationship between the CLIP and CLIR supplementary services is described in § 3.6.6 of Recommendation I.251.3 [3] and in Recommendation I.251.4 [4].

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.



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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.

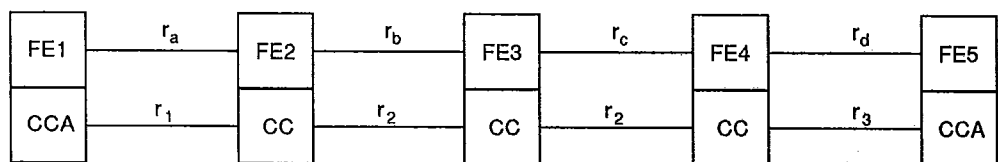
3.7.2 *Definition of individual information flows*

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:

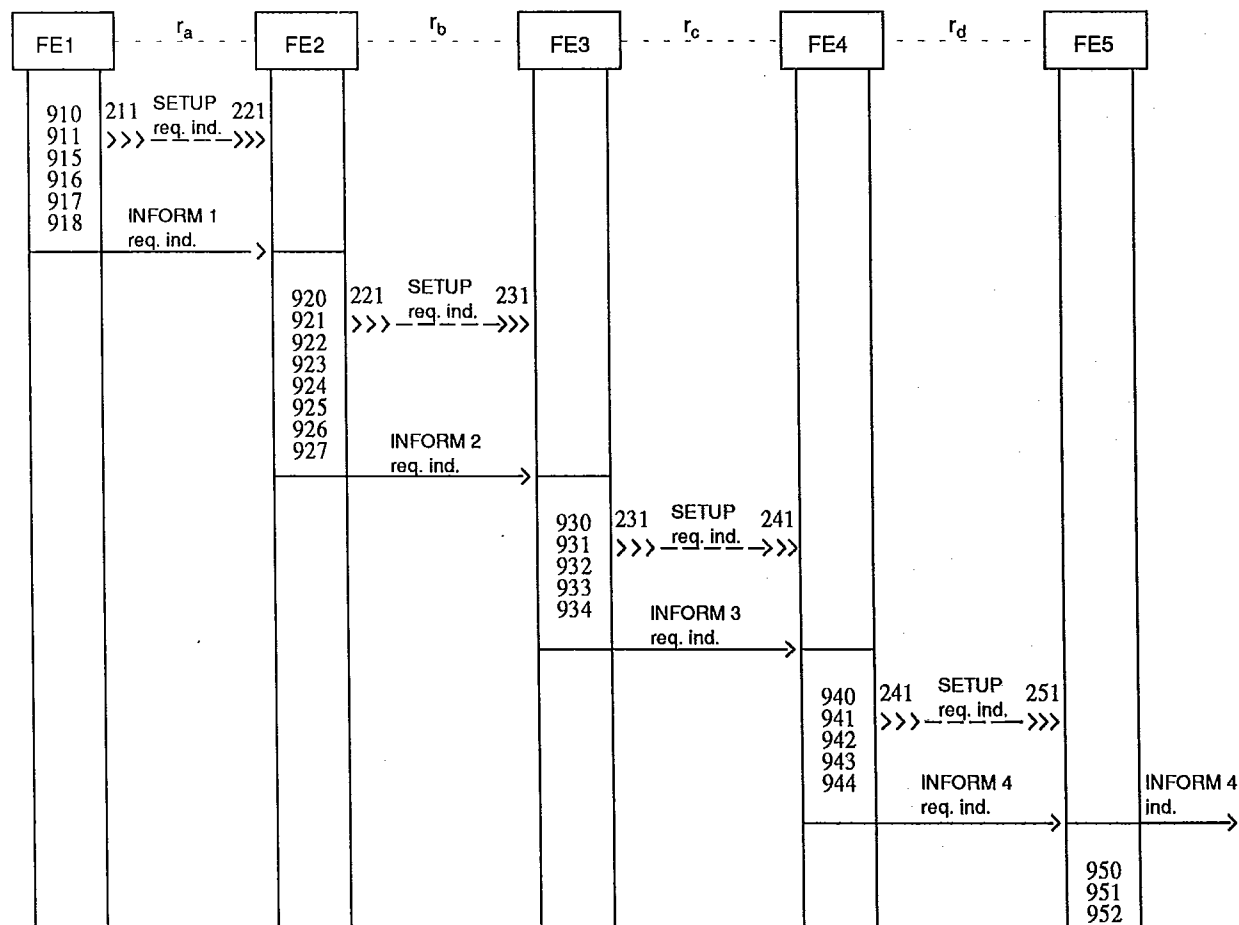
- a) user provided, verified and passed;
- b) network provided; or
- c) user provided, not screened.



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FIGURE 3-2/Q.81

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



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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.

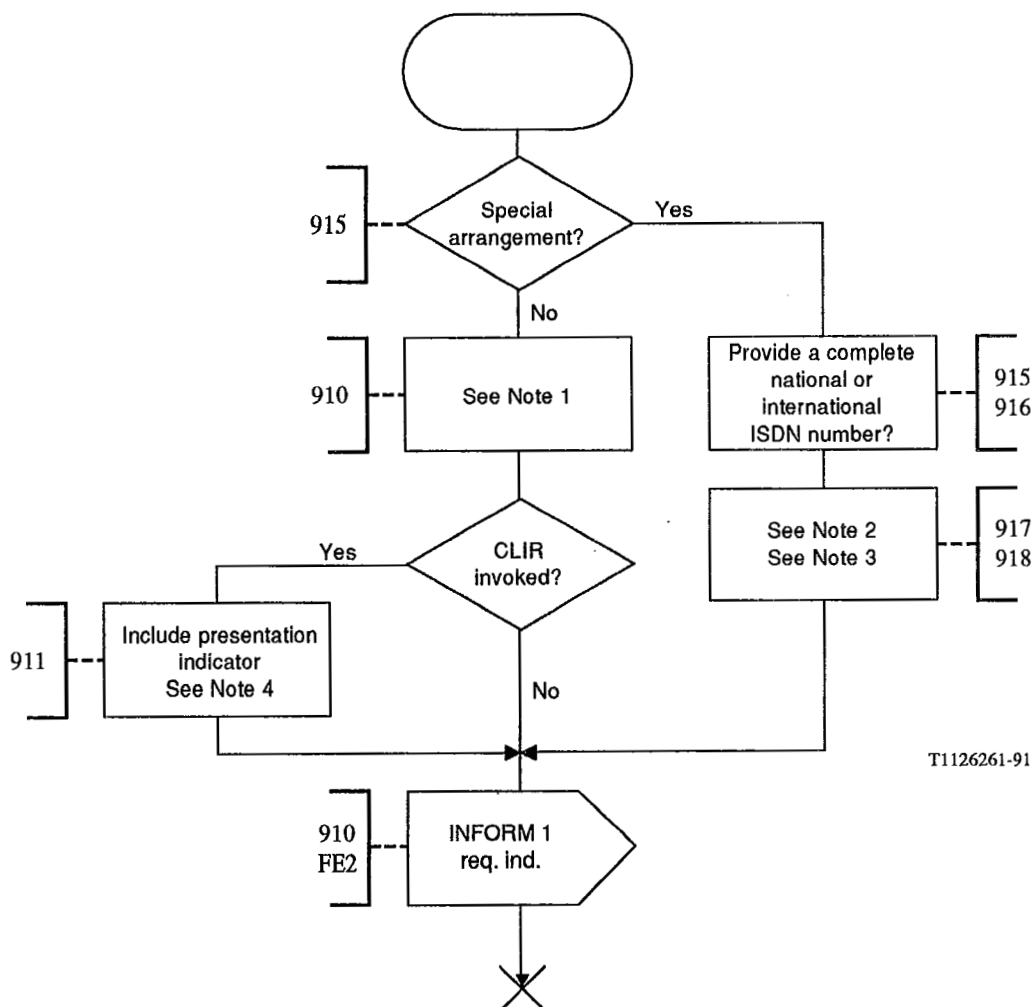
Mand. Mandatory

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.

3.8 *SDL diagrams for functional entities*

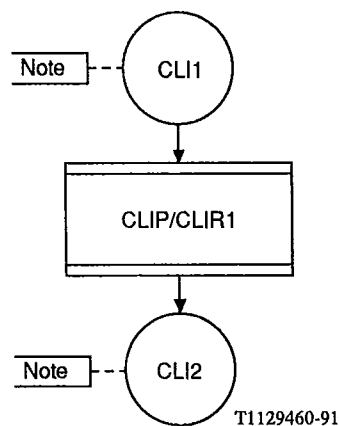
Note 1 – Provide a -partial, or -subscriber, or -national, or -international number according to originating user's request.

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