ECMA

EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

STANDARD ECMA-148

PRIVATE TELECOMMUNICATION NETWORKS

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SPECIFICATION, FUNCTIONAL MODEL AND INFORMATION FLOWS

-

IDENTIFICATION SUPPLEMENTARY SERVICES

(PTN ISSD)

2nd Edition - June 1993

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Brief History

This Standard is one of a series of ECMA standards defining services and signalling protocols applicable to Private Telecommunication Networks (PTNs). The series uses the ISDN concepts as developed by the ITU-TS and is also within the framework of standards for open systems interconnection as defined by ISO. It has been produced under ITSTC work item M-IT-05 2.2.1 for Bon de commande 76B/D.1.

This particular Standard specifies the Calling Line Identification Presentation, Connected Line Identification Presentation and Calling/Connected Line Identification Restriction supplementary services.

The services specified are compatible with the equivalent services specified for public ISDNs. ITU-TS specifications of these services are to be found in Rec. I.251 (parts C, D, E and F) (stage 1) and Rec. Q.81 (stage 2). ETSI specifications of these services are to be found in ETSs 300 089, 300 090, 300 091, 300 094, 300 095 and 300 096. Annex A describes the relationship between this Standard and the corresponding ETSs for public ISDNs.

This Standard is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO/IEC JTC1, ITU-TS, ETSI and other international and national standardization bodies. It represents a pragmatic and widely based consensus.

Compared to the 1st Edition of Standard ECMA-148 (published by ECMA in December 1990), various changes have been made in order to achieve alignment with ETS 300 173 (which is based on the 1st Edition of ECMA-148 but modified during Public Enquiry and published by ETSI in December 1992).

Accepted as 2nd Edition of Standard ECMA-148 by the General Assembly of June 1993.

Table of contents

1   Scope

This Standard specifies the following Identification Supplementary Services: Calling Line Identification Presentation (SS-CLIP), Connected Line Identification Presentation (SS-COLP) and Calling/Connected Line Identification Restriction (SS-CLIR), which are applicable to various basic services supported by Private Telecommunication Network (PTN). Basic services are specified in ETS 300 171.

Service specifications are produced in three stages, according to the method described in ENV 41005. This Standard contains the stage 1 and stage 2 specifications of the Identification Supplementary Services. The stage 1 specifications (clauses 5 to 13) specify the supplementary services as seen by users of PTNs. The stage 2 specifications (clauses 14 to 28) identify the functional entities involved in the supplementary services and the information flows between them.

2   Conformance

Definition of signalling protocol at stage 3 is guided and constrained by the stage 1 and stage 2 specifications. A stage 3 standard shall be in conformance with this Standard if the signalling protocols and equipment behaviour specified in the stage 3 standard are capable of being used in a PTN which supports the supplementary services specified in this Standard.

A stage 3 standard for SS-CLIP shall be in conformance with this Standard if it is adequate for the support of those aspects of the normative clauses for stage 1 and stage 2 of SS-CLIP which are relevant to the interface or equipment to which the stage 3 standard applies. The normative clauses for stage 1 and stage 2 of SS-CLIP are 5, 6, 14, 15, 16, 18.1 and 18.3. Clauses 7, 17, 18.2 and 19 are informative.

A stage 3 standard for SS-COLP shall be in conformance with this Standard if it is adequate for the support of those aspects of the normative clauses for stage 1 and stage 2 of SS-COLP which are relevant to the interface or equipment to which the stage 3 standard applies. The normative clauses for stage 1 and stage 2 of SS-COLP are 8, 9, 20, 21, 22, 24.1 and 24.3. Clauses 10, 23, 24.2 and 25 are informative.

A stage 3 standard for SS-CLIR shall be in conformance with this Standard if it is adequate for the support of those aspects of the normative clauses for stage 1 and stage 2 of SS-CLIR which are relevant to the interface or equipment to which the stage 3 standard applies. The normative clauses for stage 1 and stage 2 of SS-CLIR are 11, 12, 26, 27, 28, 30.1 and 30.3. Clauses 13, 29, 30.2 and 31 are informative.

3   References

ETS 300 171	Private Telecommunication Network (PTN); Specification, functional models and information flows; Control aspects of circuit mode basic services (1992)
ETS 300 189	Private Telecommunication Network (PTN); Addressing (1992)
ENV 41005	Method for the specification of basic and supplementary services of private telecommunication networks (1989)
ENV 41007-1	Definition of terms in private telecommunication networks, Part 1: Definition of general terms (1991)
CCITT Rec. I.112	Vocabulary of terms for ISDNs (1988)

4   Definitions

For the purpose of this Standard, the following definitions shall apply:

4.1   External definitions

This Standard uses the following terms defined in other documents:

Basic Service	(CCITT Rec. 1.210)
Connection	(ENV 41007-1)
Private	(ENV 41007-1)

Private Telecommunication Network Exchange	(ENV 41007-1)
Public	(ENV 41007-1)
Public ISDN	(ENV 41007-1)
PTN Number	(ETS 300 189)
Service	(CCITT Rec. I.112)
Supplementary Service	(CCITT Rec. I.210)
Signalling Telecommunications Network	(ENV 41007-1)
Terminal, Terminal Equipment	(ENV 41007-1)
User	(ETS 300 171)

4.2 List of acronyms

CC	Call Control (functional entity)
CCA	Call Control Agent (functional entity)
CGLI	Calling Line Identification (functional entity)
CN	Connected Number
COLI	Connected Line Identification (functional entity)
CS	Connected Subaddress
FE	Functional Entity
ISDN	Integrated Services Digital Network
ON	Originating Number
OS	Originating Subaddress
PTN	Private Telecommunication Network
PTNX	Private Telecommunication Network Exchange
RI	Restriction Indicator
SS-CLIP	Supplementary Service Calling Line Identification Presentation
SS-CLIR	Supplementary Service Calling/Connected Line Identification Restriction
SS-COLP	Supplementary Service Connected Line Identification Presentation
TE	Terminal Equipment

5 SS-CLIP stage 1 - Service within a PTN

A stage 3 standard for SS-CLIP shall be capable of supporting the service specified in this clause, including the various interactions with other supplementary services.

5.1 Definition

Calling Line Identification Presentation (SS-CLIP) is a supplementary service which is offered to the called party and which provides the calling party's PTN number, and possibly a subaddress, to the called party.

5.2 Description

5.2.1 General description

The PTN provides the called party with the number of the calling party whenever an incoming call is presented. The number provided should be sufficient to enable the called party to return the call.

The calling party number may be accompanied by a subaddress.

5.2.2 Qualifications on applicability to telecommunication services

This supplementary service is applicable to all basic telecommunication services.

5.3 Procedures

5.3.1 Provision/withdrawal

SS-CLIP shall be generally available. There is no need for service profile control.

Some PTN users may have a service profile which permits the override of calling line identification restriction.

5.3.2 Normal procedures

5.3.2.1 Activation/deactivation/registration/interrogation

SS-CLIP shall be permanently activated. No information needs to be registered with the PTN for this supplementary service, and therefore interrogation is not applicable.

5.3.2.2 Invocation and operation

The PTN provides the called party with the calling party number at the same time as indicating an incoming call.

The number presented is accompanied by indications of the numbering plan and type of number, and should be sufficient to unambiguously identify the calling party.

Where the number presented has been wholly or partially provided by the calling party, it is marked "user provided, verified and passed". Otherwise it is marked "network-provided".

If the calling party has also provided a calling party subaddress, it is delivered to the called party along with the calling party number.

5.3.3 Exceptional procedures

5.3.3.1 Activation/deactivation/registration/interrogation

Not applicable.

5.3.3.2 Invocation and operation

There are two exceptions when the calling party number is not presented to the called party:

- when calling line identification restriction has been invoked (see definition of Calling/Connected Line Identification Restriction), and

- when the calling party number is not available, e.g. due to interworking with the analogue telephone network (PSTN).

In such cases the called party receives an indication of the situation.

5.3.4 Alternative procedures

5.3.4.1 Activation/deactivation/registration/interrogation

Not applicable.

5.3.4.2 Invocation and operation

In some cases where calling line identification restriction has been invoked, there may be certain categories of called party that have the service profile to override this restriction and have the calling party number presented, e.g. emergency stations, PTN operators. In these circumstances, presentation includes an indication that restriction has been invoked.

5.4 Interaction with other supplementary services

Interactions with other supplementary services for which PTN standards were available at the time of publication of the 1st Edition of this Standard are described below. Interactions with supplementary services for which PTN standards have subsequently become available are specified in those standards.

5.4.1 Connected Line Identification Presentation

No interactions.

5.4.2 Calling/Connected Line Identification Restriction

The calling party number is not presented if calling line identification restriction has been invoked at the calling party, unless the called party has the service profile to override this restriction.

6 SS-CLIP stage 1 - Interworking considerations

A stage 3 standard for SS-CLIP shall be adequate for supporting the interworking considerations specified in this clause.

6.1 Incoming calls

On calls incoming from another network, the calling party number, and subaddress if available, are obtained from the other network. In some circumstances the number may be marked "user provided, notscreened".

Where no number is provided by the other network, the called PTN user is given an indication "number unavailable due to interworking" or "presentation restricted", as appropriate.

6.2 Outgoing calls

This PTN supplementary service does not apply to outgoing calls.

NOTE 1

The possible provision of the calling party number and/or subaddress to another network is part of the basic call, see ETS 300 171.

7 SS-CLIP stage 1 - Overall SDL

Figure 1 contains the dynamic description in SDL format. The SDL process represents the behaviour of the network in providing SS-CLIP. The relationship of this process to the basic call process is indicated in the annotations.

Output signals to the right represent primitives to the called PTN user. Input signals from the left represent internal stimuli.
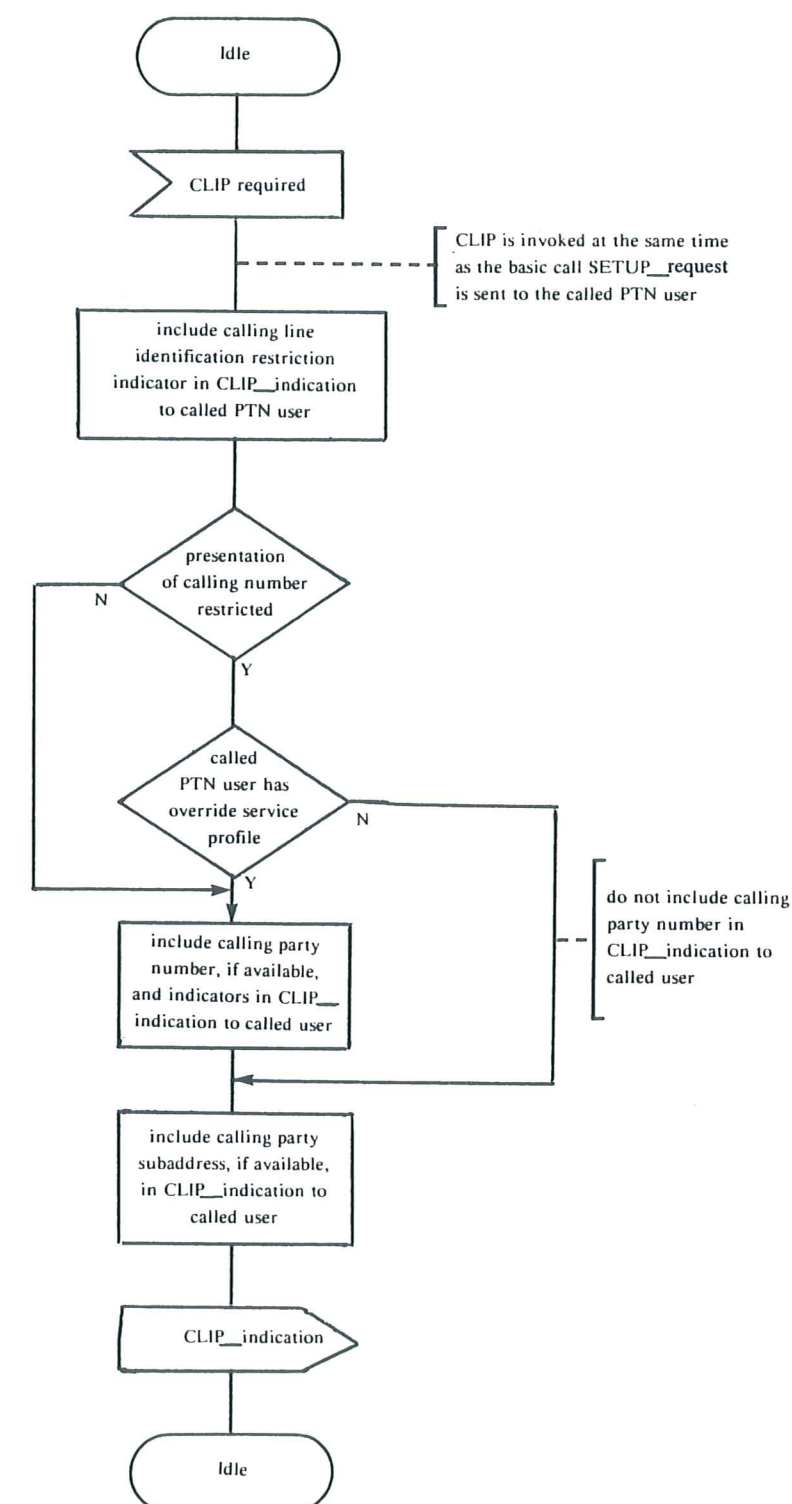
Figure 1 - SS-CLIP Overall SDL

8 SS-COLP stage 1 - Service within a PTN

A stage 3 standard for SS-COLP shall be capable of supporting the service specified in this clause, including the various interactions with other supplementary services.

8.1 Definition

Connected Line Identification Presentation (SS-COLP) is a supplementary service which is offered to the calling party and which provides the called (connected) party's PTN number, and possibly a subaddress, to the calling party.

8.2 Description

8.2.1 General description

The PTN provides the calling party with the number of the called party when the called party connects to the incoming call (connected party identification). The number provided should be sufficient to enable the calling party to repeat the call.

NOTE 2

The number provided is the number of the connected party. Interactions with certain supplementary services may cause the connected party number to differ from the called party number requested by the calling party.

The connected party number may be accompanied by a subaddress.

8.2.2 Qualifications on applicability to telecommunication services

This supplementary service is applicable to all basic telecommunication services.

8.3 Procedures

8.3.1 Provision/withdrawal

SS-COLP shall be generally available. There is no need for service profile control.

Some PTN users may have a service profile which permits the override of connected line identification restriction.

8.3.2 Normal procedures

8.3.2.1 Activation/deactivation/registration/interrogation

SS-COLP shall be permanently activated. No information needs to be registered with the PTN for this supplementary service, and therefore interrogation is not applicable.

8.3.2.2 Invocation and operation

The calling party, when notified that call establishment is complete, is presented with the connected party number.

The number presented is accompanied by indications of the numbering plan and type of number, and should be sufficient to unambiguously identify the connected party.

Where the number presented has been wholly or partially provided by the connected party, it is marked "user provided, verified and passed". Otherwise it is marked "network-provided".

If the connected party has provided a connected party subaddress, it is delivered to the calling party along with the connected party number.

8.3.3 Exceptional procedures

8.3.3.1 Activation/deactivation/registration/interrogation

Not applicable.

8.3.3.2 Invocation and operation

There are two exceptions when the connected party number is not presented to the calling party:

– when connected line identification restriction has been invoked (see definition of Calling/Connected Line Identification Restriction), and

– when the connected party number is not available, e.g. due to interworking with the analogue telephone network (PSTN).

In such cases the calling party receives an indication of the situation.

8.3.4 Alternative procedures

8.3.4.1 Activation/deactivation/registration/interrogation

Not applicable.

8.3.4.2 Invocation and operation

In some cases where connected line identification restriction has been invoked, there may be certain categories of calling party that have the service profile to override this restriction and have the connected party number presented, e.g. emergency stations, PTN operators. In these circumstances, presentation includes an indication that restriction has been invoked.

8.4 Interaction with other supplementary services

Interactions with other supplementary services for which PTN standards were available at the time of publication of the 1st Edition of this Standard are described below. Interactions with supplementary services for which PTN standards have subsequently become available are specified in those standards.

8.4.1 Calling Line Identification Presentation

No interactions.

8.4.2 Calling/Connected Line Identification Restriction

The connected party number is not presented if connected line identification restriction has been invoked at the connected party unless the calling party has the service profile to override this restriction.

9 SS-COLP stage 1 - Interworking considerations

A stage 3 standard for SS-COLP shall be adequate for supporting the interworking considerations specified in this clause.

9.1 Outgoing calls

On calls outgoing to another network, the connected party number, and subaddress if available, are obtained from the other network. In some circumstances the number may be marked "user-provided, unscreened".

Where no number is provided by the other network, the calling PTN user is given an indication "number unavailable due to interworking" or "presentation restricted", as appropriate.

9.2 Incoming calls

This PTN supplementary service does not apply to incoming calls.

NOTE 3

The possible provision of the connected party number and/or subaddress to another network is part of the basic call, see ETS 300 171.

10 SS-COLP stage 1 - Overall SDL

Figure 2 contains the dynamic description in SDL format. The SDL process represents the behaviour of the network in providing SS-COLP. The relationship of this process to the basic call process is indicated in the annotations.

Output signals to the left represent primitives to the calling PTN user. Input signals from the right represent internal stimuli.
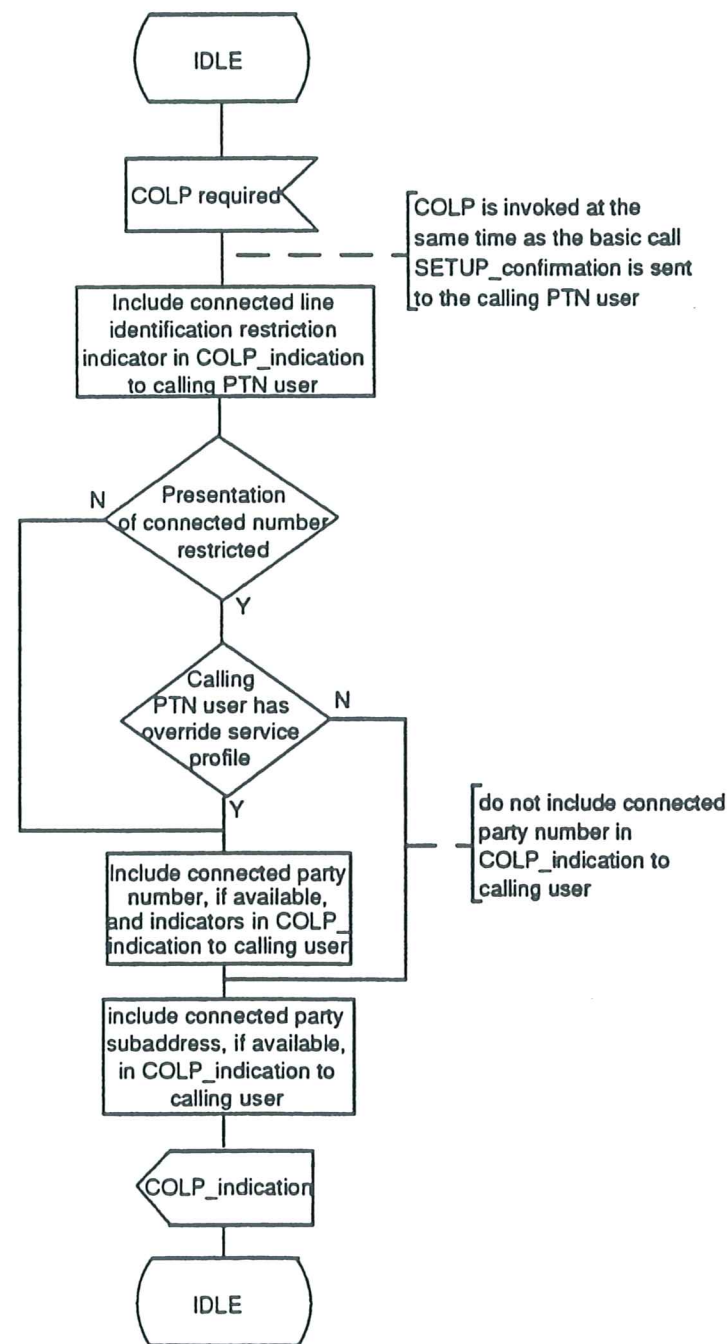
Figure 2 - SS-COLP Overall SDL

11 SS-CLIR stage 1 - Service within a PTN

A stage 3 standard for SS-CLIR shall be capable of supporting the service specified in this clause, including the various interactions with other supplementary services.

11.1 Definition

Calling/connected Line Identification Restriction (SS-CLIR) is a supplementary service offered to a party to restrict presentation of that party's PTN number to another party.

11.2 Description

11.2.1 General description

When SS-CLIR applies to a party, the party's number is not normally presented to any other party.

11.2.2 Qualifications on applicability to telecommunication services

This supplementary service is applicable to all basic services.

11.3 Procedures

11.3.1 Provision/withdrawal

SS-CLIR is provided on a service profile basis. A PTN may provide one or more of several service profile options. The options apply separately to each PTN number. Service profile options are summarised in table 1.

Table 1 - Service Profile Options

Service Profile Option	– Values
SS-CLIR mode	– permanent (invoked for all calls) – temporary (specified by user per call)
Default (only for temporary mode)	– presentation restricted – presentation not restricted

11.3.2 Normal procedures

11.3.2.1 Activation/deactivation/registration/interrogation

The service is activated on provision and deactivated on withdrawal. This supplementary service requires no registration, and admits no interrogation.

11.3.2.2 Invocation and operation

If permanent mode is provided, restriction is invoked automatically for all calls originating or terminating at the PTN user concerned. If temporary mode with default "presentation restricted" is provided, restriction is invoked automatically for all calls originating or terminating at the PTN user concerned, unless requested otherwise by the PTN user at call establishment time. If temporary mode with default "presentation not restricted" is provided, restriction is not invoked for any call originating or terminating at the PTN user concerned, unless requested otherwise by the PTN user at call establishment time.

To override the default for an outgoing call when temporary mode is provided, the calling party makes a request for restriction or no restriction at the same time as requesting call establishment. To override the default for an incoming call when temporary mode is provided, the called party makes a request for restriction or no restriction at the same time as responding to the incoming call indication.

If restriction is invoked for an outgoing call, the calling party number is marked by the network as "presentation restricted". This prevents presentation to the called party (unless the called party has an override service profile).

If restriction is invoked for an incoming call, the connected party number is marked by the network as "presentation restricted". This prevents presentation to the calling party (unless the calling party has an override service profile).

11.3.3 Exceptional procedures

11.3.3.1 Activation/deactivation/registration/interrogation

Not applicable.

11.3.3.2 Invocation and operation

A request from the PTN user for the override of a default is ignored if the PTN user is not provided with temporary mode.

11.3.4 Alternative procedures

11.3.4.1 Activation/deactivation/registration/interrogation

No alternative procedures.

11.3.4.2 Invocation and operation

No alternative procedures.

11.4 Interaction with other supplementary services

Interactions with other supplementary services for which PTN standards were available at the time of publication of the 1st Edition of this Standard are described below. Interactions with supplementary services for which PTN standards have subsequently become available are specified in those standards.

11.4.1 Calling Line Identification Presentation

The invocation of restriction by or on behalf of the calling party will prevent the calling party number being presented to the called party.

The only occasion when restriction can be overridden is when the called PTN user has an override service profile. Provision of this service profile is a PTN option.

11.4.2 Connected Line Identification Presentation

The invocation of restriction by or on behalf of the called party will prevent the connected party number being presented to the calling party.

The only occasion when restriction can be overridden is when the calling PTN user has an override service profile. Provision of this service profile is a PTN option.

12 SS-CLIR stage 1 - Interworking considerations

A stage 3 standard for SS-CLIR shall be adequate for supporting the interworking considerations specified in this clause.

12.1 Incoming calls

This PTN supplementary service does not apply to the calling party of an incoming call. The other network may provide the equivalent service, in which case the PTN may receive an indication that presentation of the calling party number is restricted. In such a situation the other network may or may not supply the calling party number to the PTN. If not provided, even a called PTN user with an override service profile will be given only an indication that presentation is restricted.

If the called (connected) party has invoked restriction, the connected party number is marked as "presentation restricted". This indication is passed on to the other network.

12.2 Outgoing calls

This PTN supplementary service does not apply to the connected party of an outgoing call. The public ISDN may provide the equivalent service, in which case the PTN may receive an indication that presentation of the connected party number is restricted. In such a situation the other network may or may not supply the connected party number to the PTN. If not provided, even a calling PTN user with an override service profile will be given only an indication that presentation is restricted.

If the calling party has invoked restriction, the calling party number is marked as "presentation restricted". This indication is passed on to the other network.

13 SS-CLIR stage 1 - Overall SDL

Figure 3 contains the dynamic description in SDL format. The SDL process represents the behaviour of the network in providing SS-CLIR.

Input signals from the left represent primitives from the served PTN user, input signals from the right represent internal stimuli.
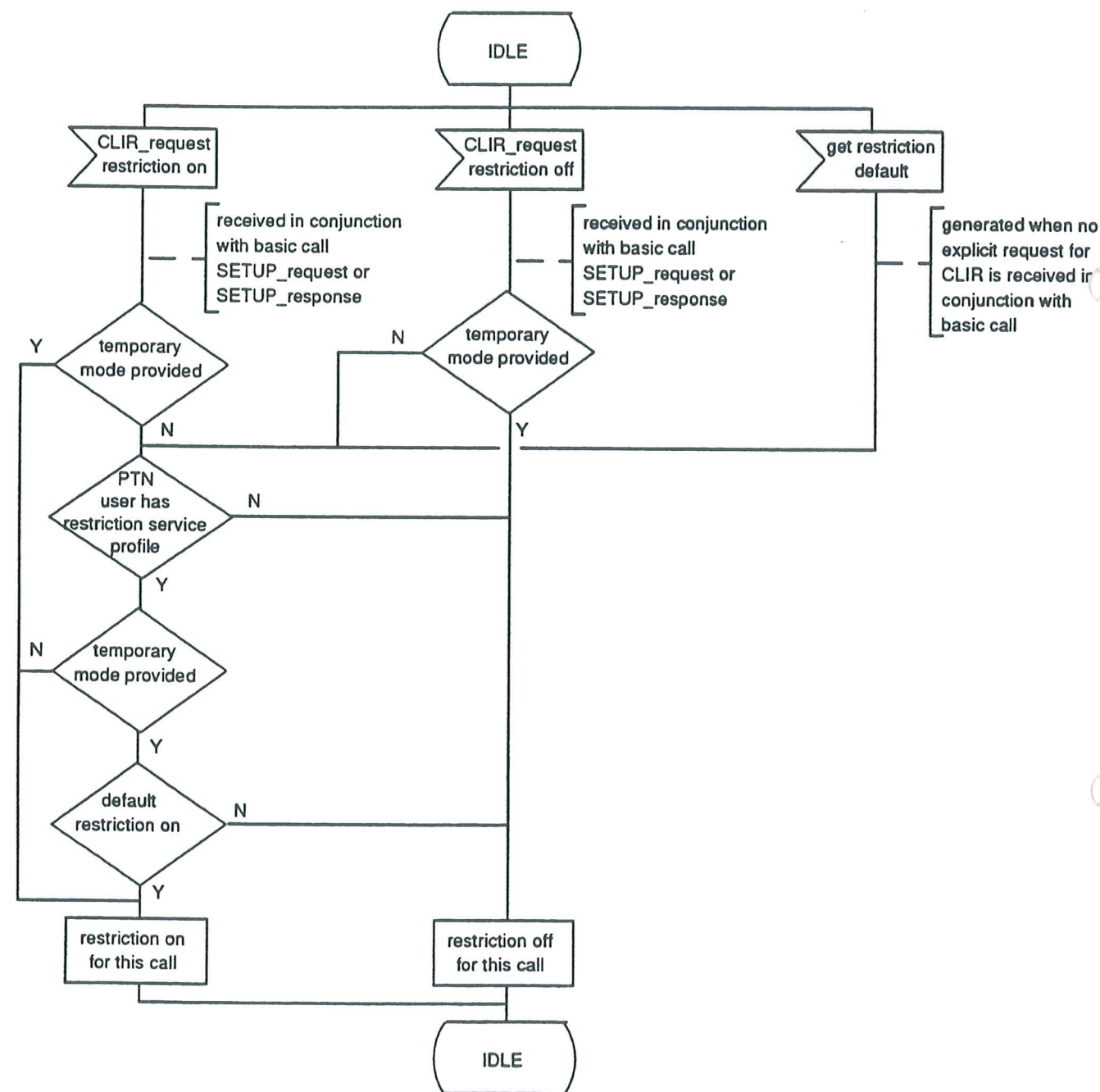
Figure 3 - SS-CLIR Overall SDL

14 SS-CLIP stage 2 - Functional model

14.1 Functional model description

The functional model comprises the FEs "CGLI Presentation" (FE1) and "CGLI Reception" (FE2). A relationship, rx, exists between FE1 and FE2. See figure 4.
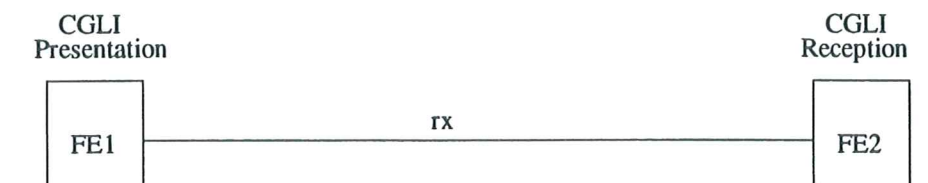

Figure 4 - Functional model for SS-CLIP

14.2 Description of Functional Entities

14.2.1 CGLI Presentation Functional Entity, FE1

This functional entity is responsible for reporting the calling party identity and associated indicators to the CGLI Reception FE.

14.2.2 CGLI Reception Functional Entity, FE2

This functional entity receives the calling party identity and associated indicators and delivers this information to the PTN user.

14.3 Relationship of functional model to Basic Call functional model

A stage 3 standard for SS-CLIP shall be capable of supporting the following relationships between FEs for SS-CLIP and FEs for the basic call:

- FE1 collocated with the destination CC;

- FE2 collocated with the destination CCA.

NOTE 4

Where the destination terminal is stimulus with respect to SS-CLIP but functional with respect to the basic call, FE2 is collocated with the destination CC.

Figure 5 shows an example of the relationship between the model for SS-CLIP and the model for the basic call.
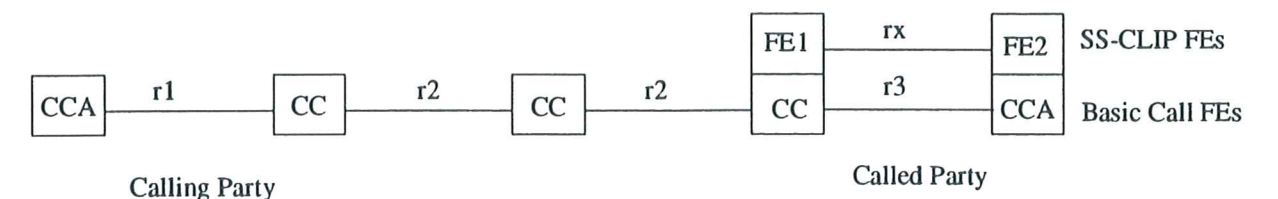
Figure 5 - Relationship between models for SS-CLIP and Basic Call

15 SS-CLIP stage 2 - Information flows

A stage 3 standard for SS-CLIP shall be capable of supporting the information flows specified in this clause.

15.1 Information flows across Relationship rx

The following information flows are required across relationship rx.

15.1.1 CGLI (Calling Line Identification)

15.1.1.1 Meaning of CGLI

CGLI is an unacknowledged information flow which conveys calling line identification information from FE1 (CGLI Presentation) to FE2 (CGLI Reception).

15.1.1.2 Information content of CGLI

Table 2 lists the service elements within the CGLI information flow. The column headed "Request" indicates which of these service elements are mandatory (M) and which are optional (O) in a CGLI request/indication information flow. Because the information flow is unconfirmed, there is no response/confirmation information flow.

Table 2 - Content of CGLI

Service Element	Request
Originating Number (ON)	M
Originating Subaddress (OS)	O

Service element ON is always included in the CGLI request/indication information flow at rx. As a minimum it contains one of the following presentation indicators:

- presentation of number not restricted;

- presentation of number restricted;

- originating number not available owing to interworking.

In addition ON contains the calling party number if it is available and if presentation is not restricted (or if presentation is restricted and the called party has an override service profile). The calling party number, if present, is accompanied by the numbering plan identifier, the type of number, and one of the following screening indicators:

- network provided;

- user provided, verified and passed;

- user provided, not screened (only occurs in certain interworking situations).

Service element OS is included in the CGLI request/indication information flow at rx only if the origination subaddress is available.

15.2 Relationship of information flows to Basic Call information flows

The CGLI request/indication information flow is sent across rx at the same time as the basic call information flow SETUP request/indication is sent across basic call relationship r1 (destination CC to destination CCA).

NOTE 5

The information content of CGLI is gained from information received in the basic call information flow SETUP request/indication received from basic call relationship r2, i.e. from the CC prior to the destination CC. This information ultimately comes from the originating CC and/or the originating CCA.

15.3 Example of information flow sequences

Below is an example of a typical sequence of information flows. This sequence shall be taken into account at stage 3. However, this example is not necessarily exhaustive, and in particular may not cover all error situations, interactions with other supplementary services, etc..

15.3.1 Normal operation of SS-CLIP

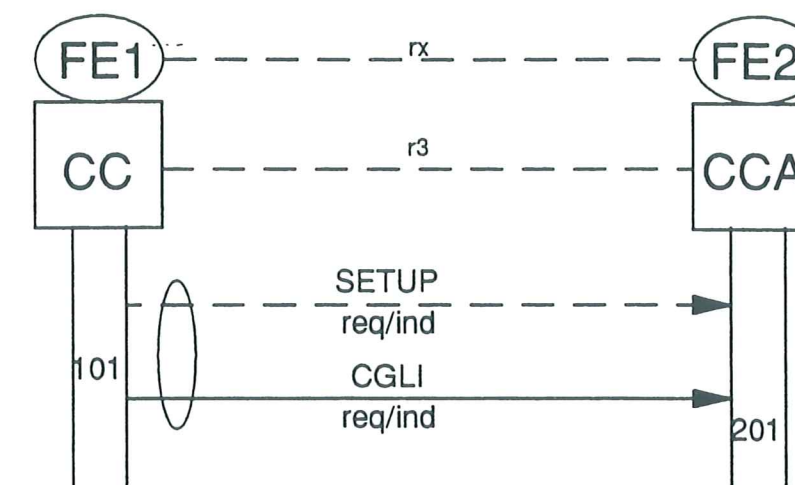Figure 6 shows the information flow sequence for normal operation of SS-CLIP.

Figure 6 - Information flow sequence - Normal operation of SS-CLIP

16 SS-CLIP stage 2 - Functional Entity actions

16.1 Functional Entity actions of FE1

101   Obtain calling party number and/or subaddress for transmission to FE2, taking into account any restriction on presentation of the number and the called user's authority to override such restriction. If the Calling party number is not available, indicate this to FE2.

16.2 Functional Entity actions of FE2

201   Pass any calling party number and/or subaddress received from FE1 to the connected user.

17 SS-CLIP stage 2 - Functional Entity behaviour

The FE behaviours shown in this clause are intended to illustrate typical FE behaviour in terms of information flows sent and received.

Figure 7 shows the normal behaviour of FE1 in the form of an SDL diagram. Output signals to the right represent information flows to FE2. Input signals from the left represent internal stimuli.

Figure 8 shows the normal behaviour of FE2 in the form of an SDL diagram. Output signals to the right represent primitives to the called PTN user. Input signals from the left represent information flows from FE1.

IDLE

CLIP required

CLIP is invoked at the
same time as the basic call
SETUP_request is sent
to the destination CCA

Include calling line
identification restriction
indicator in CGLI_request

Presentation
of calling number
restricted
N

Y

Called
PTN user has
override service
profile
N

Y

do not include calling
party number in
CGLI_request

Include calling party
number, if available,
and indicators in
CGLI_request

include calling party
subaddress, if available,
in CGLI_request

CGLI_request

IDLE
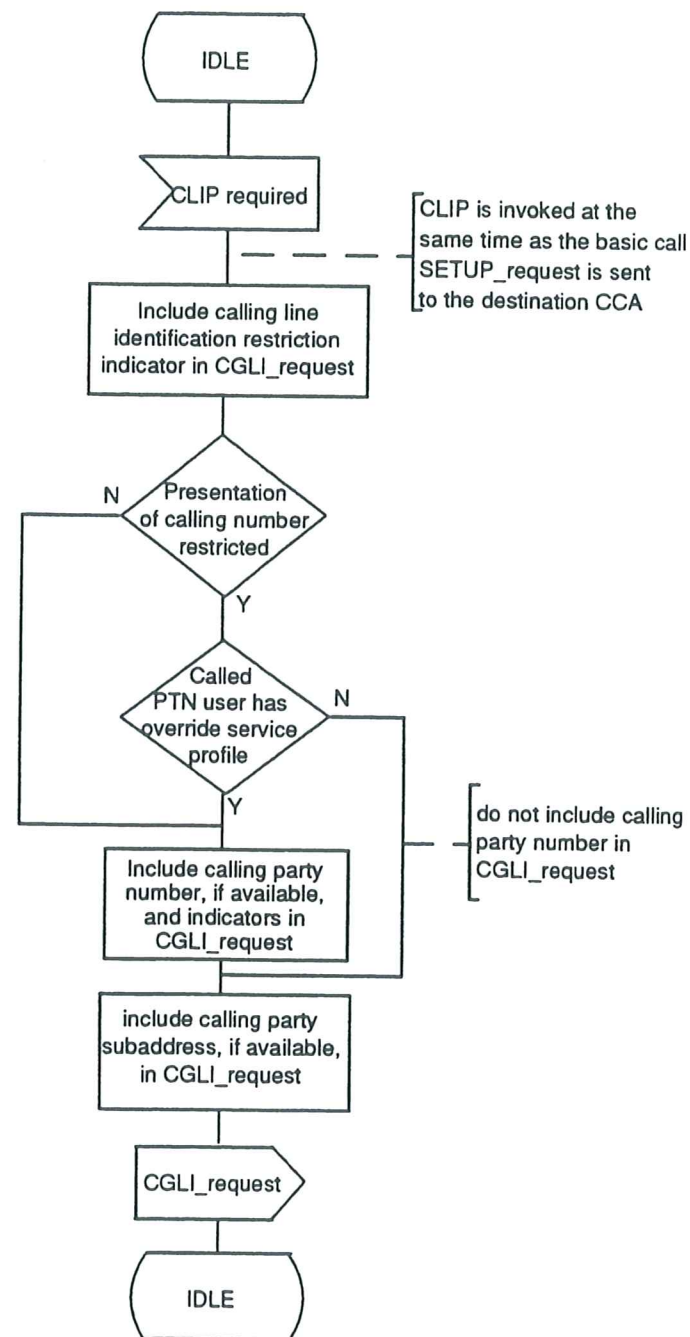
Figure 7 - SS-CLIP, SDL for Functional Entity FE1

IDLE

CGLI_indication
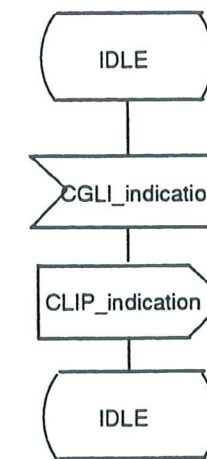
CLIP_indication

IDLE

Figure 8 - SS-CLIP, SDL for Functional Entity FE2

18 SS-CLIP stage 2 - Allocation of Functional Entities to physical locations

A stage 3 standard for SS-CLIP shall be capable of supporting the following allocations of FEs to physical equipment:

- FE1 located in the destination PTNX;

- FE2 located in the destination TE.

NOTE 6

If the destination TE is stimulus with respect to SS-CLIP, FE2 is located in the destination PTNX.

19 SS-CLIP stage 2 - Interworking considerations

All FEs for SS-CLIP are always located within PTNXs and PTNX terminals.

When SS-CLIP is invoked on behalf of a basic call which has originated in another network, the basic call delivers to the served user's PTNX calling line identification information obtained from the other network. In the case of a public ISDN, the CC in the gateway PTNX uses the public ISDN's SS-CLIP to obtain this information.

Where the other network is unable to provide this information, the CC at the gateway PTNX provides instead an indication that the originating number is unavailable owing to interworking.

20 SS-COLP stage 2 - Functional model

20.1 Functional model description

The functional model comprises the FEs "COLI Presentation" (FE1) and "COLI Reception" (FE2). A relationship, rx, exists between FE1 and FE2. See figure 9.
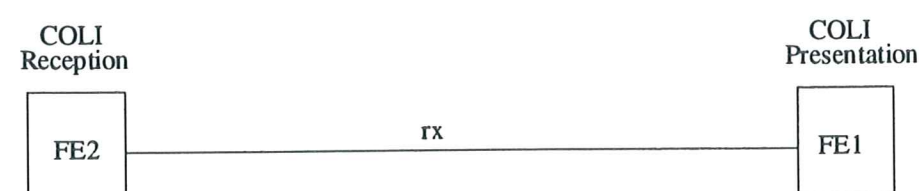

Figure 9 - Functional model for SS-COLP

20.2 Description of Functional Entities

20.2.1 COLI Presentation Functional Entity, FE1

This functional entity is responsible for reporting the connected party identity and associated indicators to the COLI Reception FE.

20.2.2 COLI Reception Functional Entity, FE2

This functional entity receives the connected party identity and associated indicators and delivers this information to the PTN user.

20.3 Relationship of functional model to Basic Call functional model

A stage 3 standard for SS-COLP shall be capable of supporting the following relationships between FEs for SS-COLP and FEs for the basic call:

- FE1 collocated with the originating CC;

- FE2 collocated with the originating CCA.

NOTE 7

Where the calling terminal is stimulus with respect to SS-COLP but functional with respect to the basic call, FE2 is collocated with the originating CC.

Figure 10 shows an example of the relationship between the model for SS-COLP and the model for the basic call.
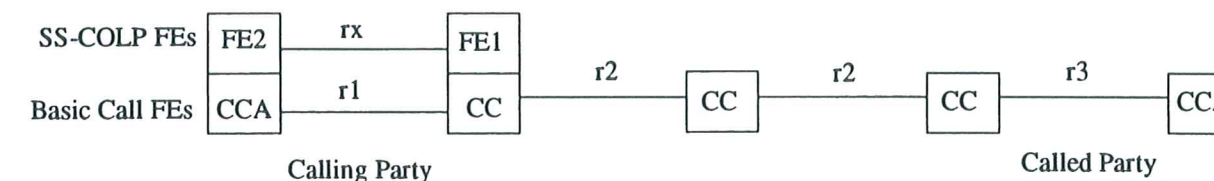
Figure 10 - Relationship between models for SS-COLP and Basic Call

21 SS-COLP stage 2 - Information flows

A stage 3 standard for SS-COLP shall be capable of supporting the information flows specified in this clause.

21.1 Information flows across Relationship rx

The following information flows are required across relationship rx.

21.1.1 COLI (Connected Line Identification)

21.1.1.1 Meaning of COLI

COLI is an unacknowledged information flow which conveys connected line identification information from FE1 (COLI Presentation) to FE2 (COLI Reception).

21.1.1.2 Information content of COLI

Table 3 lists the service elements within the COLI information flow. The column headed "Request" indicates which of these service elements are mandatory (M) and which are optional (O) in a COLI request/indication information flow. Because the information flow is unconfirmed, there is no response/confirmation information flow.

Table 3 - Content of COLI

Service Element	Request
Connected Number (CN)	M
Connected Subaddress (CS)	O

Service element CN is always included in the COLI request/indication information flow at rx. As a minimum it contains one of the following presentation indicators:

- presentation of number not restricted;

- presentation of number restricted;

- connected number not available owing to interworking.

In addition CN contains the connected party number if it is available and if presentation is not restricted (or if presentation is restricted and the calling party has an override service profile). The connected party number, if present, is accompanied by the numbering plan identifier, the type of number, and one of the following screening indicators:

- network provided;

- user provided, verified and passed;

- user provided, not screened (only occurs in certain interworking situations).

Service element CS is included in the COLI request/indication information flow at rx only if the connected subaddress is available.

21.2 Relationship of information flows to Basic Call information flows

The COLI request/indication information flow is sent across rx at the same time as the basic call information flow SETUP response/confirmation is sent across basic call relationship r1 (originating CC to originating CCA).

NOTE 8

The information content of COLI is gained from information received in the basic call information flow SETUP response/confirmation received from basic call relationship r2, i.e, from the CC next to the originating CC. This information ultimately comes from the destination CC and/or the destination CCA.

21.3 Example of information flow sequences

Below is an example of a typical sequence of information flows. This sequence shall be taken into account at stage 3. However, this example is not necessarily exhaustive, and in particular may not cover all error situations, interactions with other supplementary services, etc..

21.3.1 Normal operation of SS-COLP

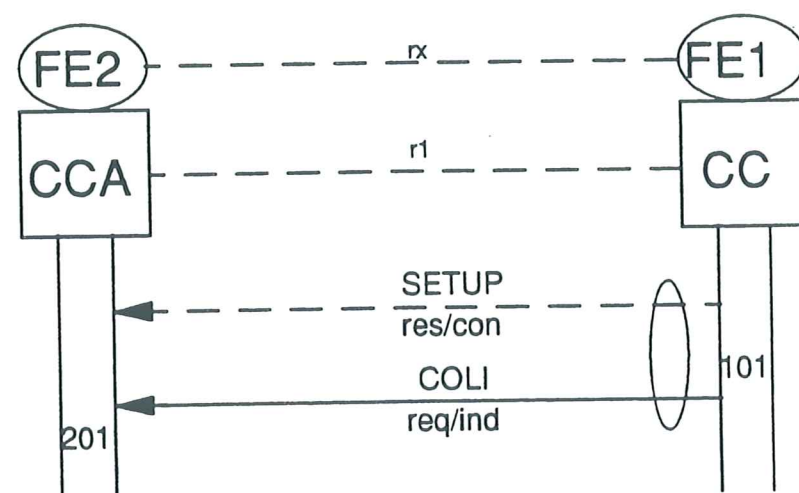Figure 11 shows the information flow sequence for normal operation of SS-COLP.

Figure 11 - Information flow sequence - Normal operation of SS-COLP

22 SS-COLP stage 2 - Functional Entity actions

22.1 Functional Entity actions of FE1

101   Obtain connected party number and/or subaddress for transmission to FE2, taking into account any restriction on presentation of the number and the calling user's authority to override such restriction. If the connected party number is not available, indicate this to FE2.

22.2 Functional Entity actions of FE2

201   Pass any connected party number and/or subaddress received from FE1 to the calling user.

23 SS-COLP stage 2 - Functional Entity behaviour

The FE behaviours shown in this clause are intended to illustrate typical FE behaviour in terms of information flows sent and received.

Figure 12 shows the normal behaviour of FE1 in the form of an SDL diagram. Output signals to the left represent information flows to FE2. Input signals from the right represent internal stimuli.

Figure 13 shows the normal behaviour of FE2 in the form of an SDL diagram. Output signals to the left represent primitives to the calling PTN user. Input signals from the right represent information flows from FE1.
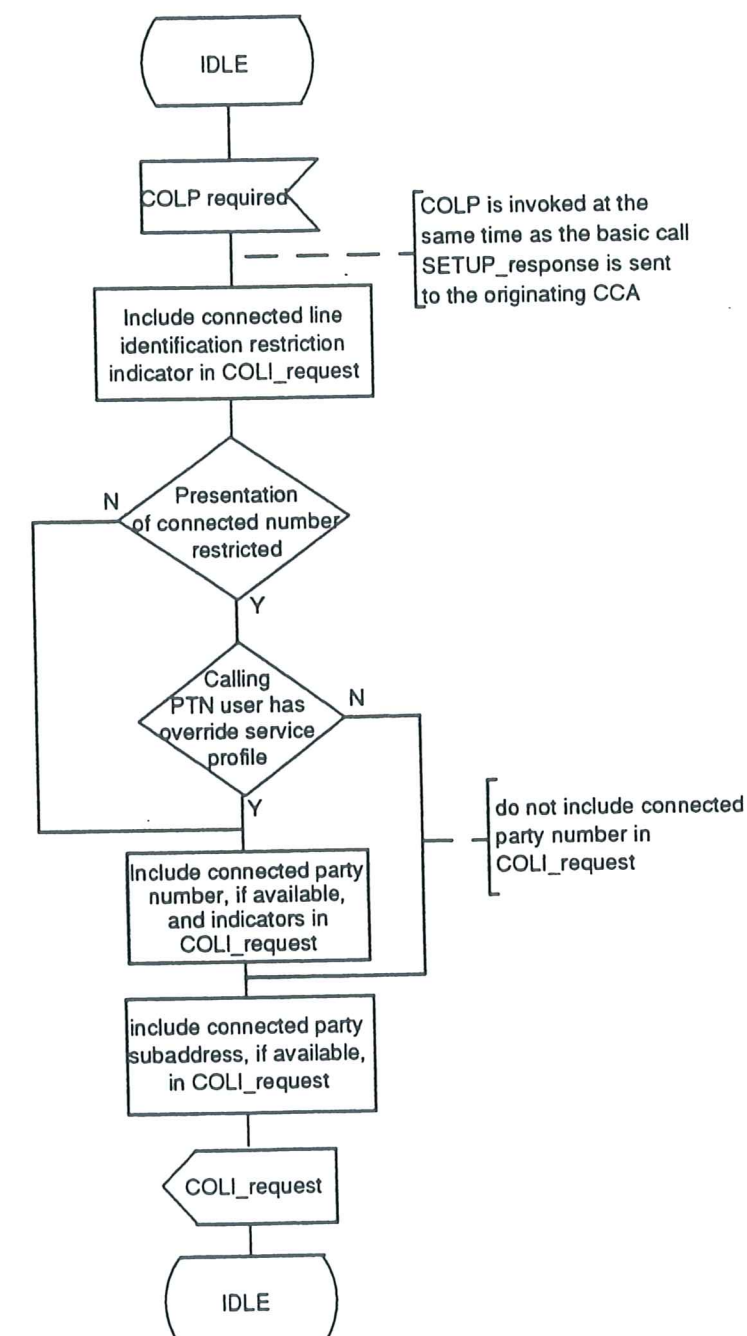
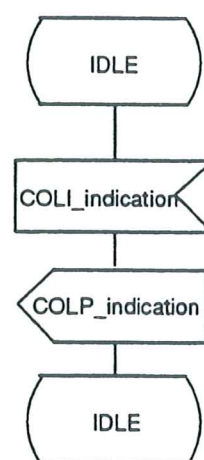**Figure 12 - SS-COLP, SDL for Functional Entity FE1**

IDLE

COLI_indication

COLP_indication

IDLE

Figure 13 - SS-COLP, SDL for Functional Entity FE2

24   SS-COLP stage 2 - Allocation of Functional Entities to physical locations

A stage 3 standard for SS-COLP shall be capable of supporting the following allocations of FEs to physical equipment:

–   FE1 located in the originating PTNX;

–   FE2 located in the originating TE.

NOTE 9

If the originating TE is stimulus with respect to SS-COLP, FE2 is located in the originating PTNX.

25   SS-COLP stage 2 - Interworking considerations

All FEs for SS-COLP are always located within PTNXs and PTNX terminals.

When SS-COLP is invoked on behalf of a basic call which has its destination in another network, the basic call delivers to the served user's PTNX connected line identification information obtained from the other network. In the case of a public ISDN, the CC in the gateway PTNX uses the public ISDN's SS-COLP to obtain this information.

Where the other network is unable to provide this information, the CC at the gateway PTNX provides instead an indication that the connected number is unavailable owing to interworking.

26   SS-CLIR stage 2 - Functional model

26.1   Functional model description

The functional model comprises the FEs "Restriction Request" (FE1) and "Restriction Control" (FE2). A relationship, rx, exists between FE1 and FE2. See figure 14.
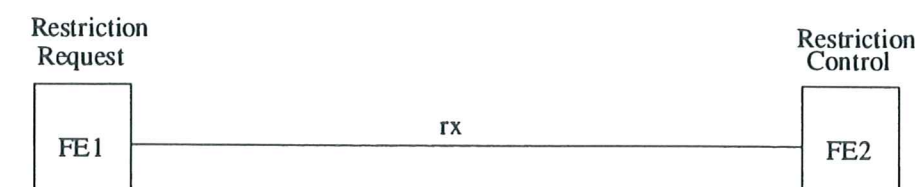
Restriction
Request

Restriction
Control

FE1   rx   FE2

Figure 14 - Functional model for SS-CLIR

26.2   Description of Functional Entities

26.2.1   Restriction Request Functional Entity, FE1

This functional entity is responsible for receiving PTN user requests for override of the temporary mode default and passing them on to the Restriction Control FE.

26.2.2   Restriction Control Functional Entity, FE2

This functional entity is responsible for determining whether to invoke restriction on behalf of a party in a call, based on the party's service profile and any requests from FE1 for the override of the temporary mode default.

26.3   Relationship of functional model to Basic Call functional model

A stage 3 standard for SS-CLIR shall be capable of supporting the following relationships between FEs for SS-CLIR and FEs for the basic call:

–   FE2 collocated with the CC local to the served PTN user, i.e. the originating CC or the destination CC;

–   FE1 collocated with the served PTN user's CCA.

NOTE 10

Where the terminal is stimulus with respect to SS-CLIR but functional with respect to the basic call, FE1 is collocated with FE2.

Figure 15 shows an example of the relationship between the model for SS-CLIR and the model for the basic call. SS-CLIR is available to both the calling party (for calling line identification restriction) and the called party (for connected line identification restriction). Hence there are two instances each of FE1 and FE2.
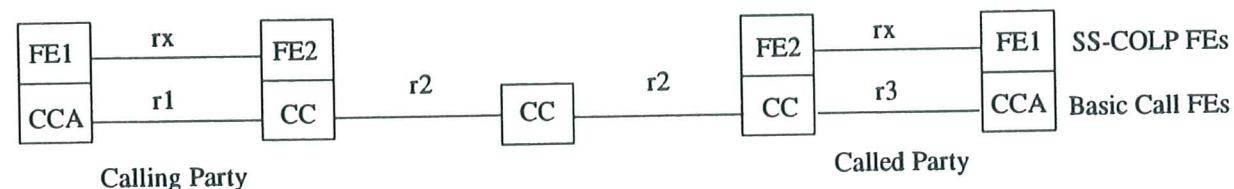

Figure 15 - Relationship between models for SS-CLIR and Basic Call

27 SS-CLIR stage 2 - Information flows

A stage 3 standard for SS-CLIR shall be capable of supporting the information flows specified in this clause.

27.1 Information flows across Relationship rx

The following information flows are required across relationship rx.

27.1.1 RESTRICT

27.1.1.1 Meaning of RESTRICT

RESTRICT is an unacknowledged information flow which conveys a PTN user request to override the SS-CLIR temporary mode default from FE1 to FE2.

27.1.1.2 Information content of RESTRICT

Table 4 lists the service elements within the RESTRICT information flow. The column headed "Request" indicates which of these service elements are mandatory (M) and which are optional (O) in a RESTRICT request/indication information flow. Because the information flow is unconfirmed, there is no response/confirmation information flow.

Table 4 - Content of RESTRICT

Service Element	Request
Restriction Indicator (RI)	M

Service element RI is included in the RESTRICT request/indication information flow at rx. It contains one of the following indicators:

− presentation not restricted;

− presentation restricted.

27.2 Relationship of information flows to Basic Call information flows

When the calling PTN user wishes to override the SS-CLIR temporary mode default, the RESTRICT request/indication information flow is sent across rx at the same time as the basic call information flow SETUP request/indication is sent across basic call relationship r1 (originating CCA to originating CC).

When the called PTN user wishes to override the SS-CLIR temporary mode default, the RESTRICT request/indication information flow is sent across rx at the same time as the basic call information flow SETUP response/confirmation is sent across basic call relationship r1 (destination CCA to destination CC).

NOTE 11

If FE2 invokes SS-CLIR on behalf of the calling or called party (automatically or on request from the PTN user), an indication that restriction applies is included in the basic call SETUP request/indication or the SETUP response/confirmation information flow respectively across r2. It is then the responsibility of FEs of SS-CLIP or SS-COLP respectively to ensure that identification information is not presented to the other user.

27.3 Example of information flow sequences

Below is an example of a typical sequence of information flows. This sequence shall be taken into account at stage 3. However, this example is not necessarily exhaustive, and in particular may not cover all error situations, interactions with other supplementary services, etc..

27.3.1 Normal operation of SS-CLIR

Figure 16 shows the information flow sequence for normal operation of SS-CLIR when invoked by both the calling user and the connected user. The RESTRICT information flow is sent only when the served user wishes to override the SS-CLIR temporary mode default.
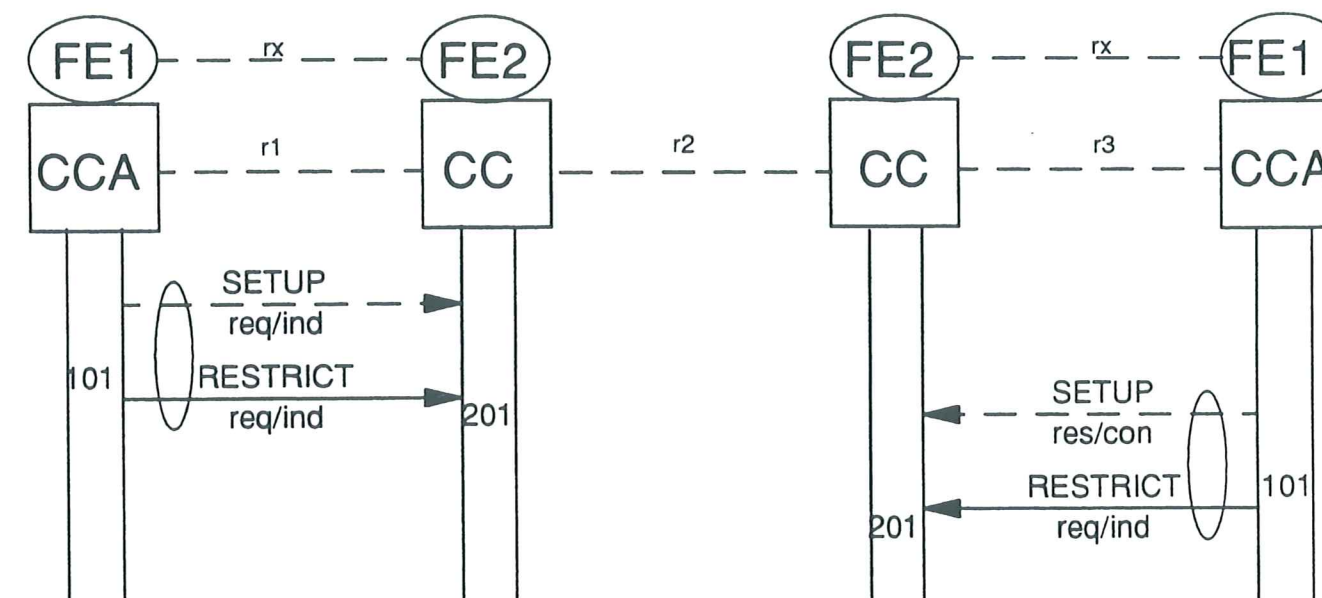

Figure 16 - Information flow sequence - Normal operation of SS-CLIR

28 SS-CLIR stage 2 - Functional Entity actions

28.1 Functional Entity actions of FE1

101 If served user wishes to override the CLIR temporary mode restriction default, generate a request and send to FE2.

28.2 Functional Entity actions of FE2

201 Assign the appropriate presentation restriction indicator to the served user's number, based on whether CLIR permanent mode or temporary mode applies and, in the case of temporary mode, whether a request to override the default has been received from FE1.

29 SS-CLIR stage 2 - Functional Entity behaviour

The FE behaviours shown in this clause are intended to illustrate typical FE behaviour in terms of information flows sent and received.

Figure 17 shows the normal behaviour of FE1 in the form of an SDL diagram. Output signals to the right represent information flows to FE2. Input signals from the left represent primitives from the served (calling or connected) PTN user.

Figure 18 shows the normal behaviour of FE2 in the form of an SDL diagram. Input signals from the left represent information flows from FE1. Input signals from the right represent internal stimuli.
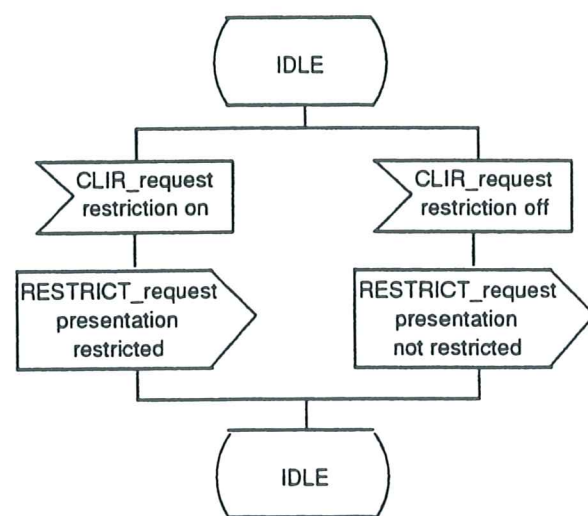
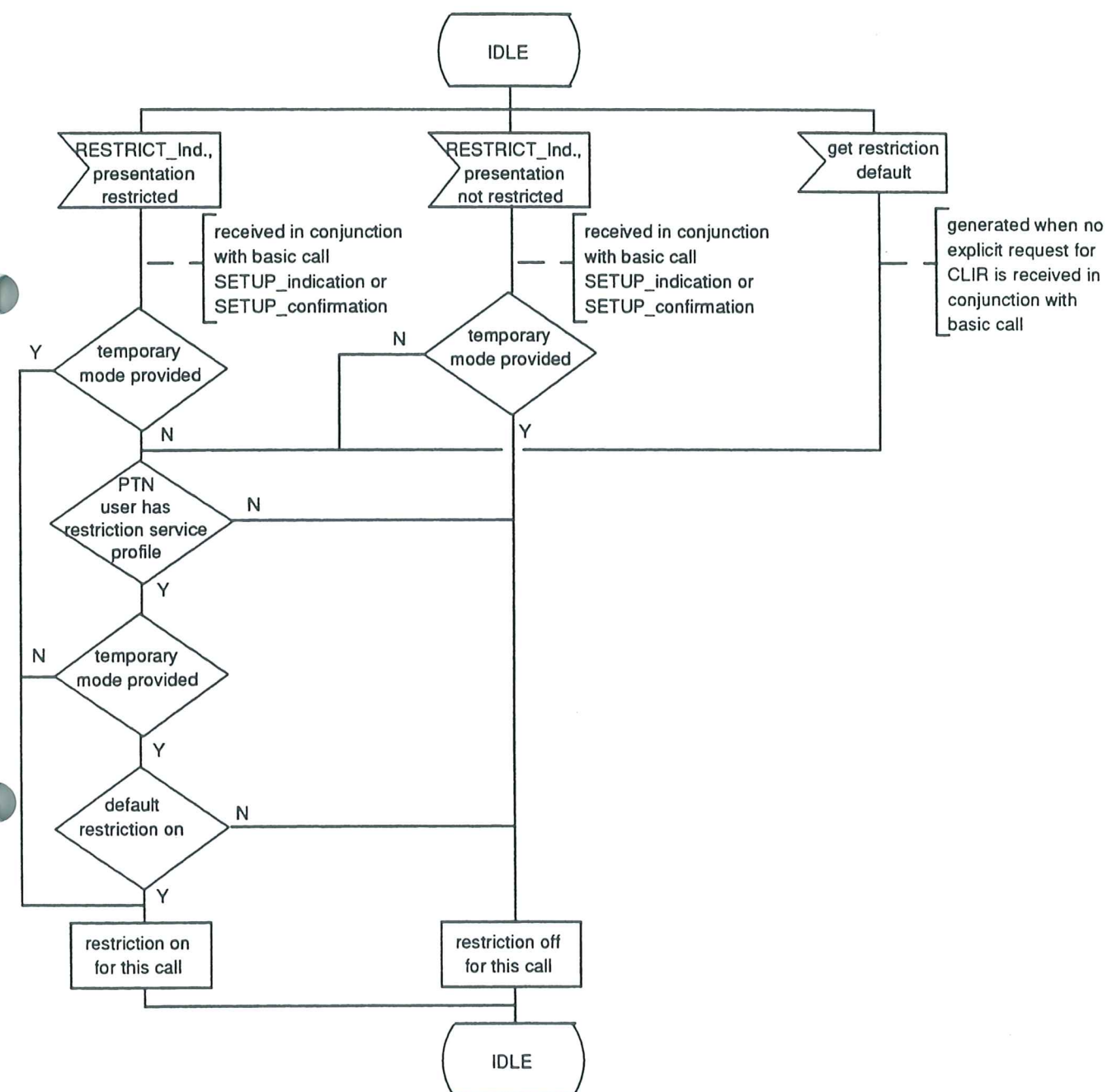**Figure 17 - SS-CLIR, SDL for Functional Entity FE1**

Figure 18 - SS-CLIR, SDL for Functional Entity FE2

30   SS-CLIR stage 2 - Allocation of Functional Entities to physical locations

A stage 3 standard for SS-CLIR shall be capable of supporting the following allocations of FEs to physical equipment:

−   FE2 located in the served user's PTNX, i.e. the originating or destination PTNX;

−   FE1 located in the served user's TE.

NOTE 12

If the served user's TE is stimulus with respect to SS-CLIR, FE1 is located in the served user's PTNX.

31   SS-CLIR stage 2 - Interworking considerations

All FEs for SS-CLIR are always located within PTNXs and PTNX terminals.

When SS-CLIR is invoked for a basic call which has originated or which has its destination in another network, the basic call delivers to the other network an indication that presentation is restricted. In the case of a public ISDN, the CC in the gateway PTNX uses the public ISDN's Calling Line Identification Restriction or Connected Line Identification Restriction supplementary service to indicate this.

NOTE 13

Delivery of a restricted number to another network is outside the scope of this Standard.

Annex A

(Informative)

Relationship to corresponding standards for the public ISDN

The Identification Supplementary Services for PTNs specified in this Standard complement, and are compatible with, the corresponding services for public ISDNs as specified in the various ETSs listed in the Brief history. There are no differences which will prevent terminal interchangeability between PTNs and public ISDNs. However, there are significant differences in the style and layout of this Standard in comparison with the corresponding ETSs for public ISDNs. The main differences can be summarised as follows.

i)   PTN terminology is used, where appropriate, instead of public ISDN terminology.

ii)   Whereas this Standard specifies a single supplementary service for restriction (SS-CLIR - Calling/Connected Line Identification Restriction), two separate supplementary services (SS-CLIR - Calling Line Identification Restriction; SS-COLR - Connected Line Identification Restriction) have been defined for the public ISDN.

iii)   All Identification Supplementary Services are specified in this Standard. A separate stage 1 standard for each service, a stage 2 standard for SS-CLIP and SS-CLIR, and a stage 2 standard for SS-COLP and SS-COLR have been produced for the public ISDN.

iv)   The scope of SS-CLIP and SS-COLP in this Standard is limited to the presentation of information to the served user. The derivation of the information by the network, including the possible supply of information by the party to be identified and the passing of that information across the network and to, and from, other networks, is considered to be part of the basic call and is specified in ETS 300 171. Although when interworking with a public ISDN identification information is obtained from the public ISDN by means of the public ISDN's SS-CLIP and SS-COLP, this is not considered to be part of the SS-CLIP and SS-COLP as provided by a PTN to its users. Instead it is considered to be part of the basic call and is specified in ETS 300 171. The provision of information relating to restriction by a user is specified as part of SS-CLIR.

v)   In the stage 1 specifications, interactions with other supplementary services are specified only for those other supplementary services for which PTN standards were available at the time of publication of the 1st Edition of this Standard. Interactions with supplementary services for which PTN standards have subsequently become available are specified in those standards.

vi)   In the stage 2 specifications in this Standard, a clear separation has been maintained between functions and information flows for the supplementary services and functions and information flows for the basic call.

vii)   In this Standard, the presentation of calling and connected party subaddresses is not subject to restriction.