

**Integrated Services Digital Network (ISDN);
Calling Line Identification Presentation (CLIP)
supplementary service;
Service description**



Reference

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the ETSI standards One-step Approval Procedure.

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

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

The present document details the stage 1 aspects (overall service description) for the Calling Line Identification Presentation (CLIP) supplementary service. The stage 2 and stage 3 aspects are detailed in ETS 300 091 [9] (1992) and ETS 300 092 [10] (1992), respectively.

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

1 Scope

The present document defines the stage one of the Calling Line Identification Presentation (CLIP) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage one is an overall service description from the user's point of view (see CCITT Recommendation I.130 [1]), but does not deal with the details of the human interface itself.

The present document defines the interworking requirements of private ISDNs with the public ISDN.

In addition the present document specifies the base functionality where the service is provided to the user via a private ISDN.

The present document does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN but does include interworking requirements of other networks with the public ISDN.

Interactions with supplementary services not listed in clause 8 are outside the scope of the present document.

Charging principles are outside the scope of the present document.

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

The CLIP supplementary service is applicable to all telecommunications services.

The present document is applicable to the stage two and stage three standards for the ISDN CLIP supplementary service. The terms "stage two" and "stage three" are also defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement, (i.e. as strict command or prohibition, as authorization leaving freedom or, as a capability or possibility), this shall be reflected in the text of the relevant stage two and stage three standards.

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

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [3] ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".
- [4] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [5] ETS 300 062: "Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Service description".

- [6] ETS 300 050: "Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service; Service description".
- [7] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".
- [8] ETS 300 090: "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Service description".
- [9] ETS 300 091: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) and Calling Line Identification Restriction (CLIR) supplementary services; Functional capabilities and information flows".
- [10] ETS 300 092: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol".
- [11] ECMA-155: "Private Integrated Services Networks - Addressing (PTNA-2)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [2], subclause 2.3, definition 308

Service; telecommunications service: see ITU-T Recommendation I.112 [2], subclause 2.2, definition 201

Supplementary service: see ITU-T Recommendation I.210 [4], subclause 2.4

ISDN number: number conforming to the numbering plan and structure specified in ITU-T Recommendation E.164 [3]

Subaddress: see ITU-T Recommendation E.164 [3], subclause 11.2

National (ISDN) number: see ITU-T Recommendation E.164 [3], subclause 3.2

International (ISDN) number: see ITU-T Recommendation E.164 [3], subclause 3.2

Partial number: part of an ISDN number which is significant for distinguishing between addressable entities beyond the network boundary. The partial number digits and the partial number length shall be governed by the requirements of the direct dialling in supplementary service and multiple subscriber number supplementary service (see ETS 300 062 [5] and ETS 300 050 [6])

Default number: ISDN number registered within the public ISDN following prior agreement between the calling party and the public ISDN

Screening: process whereby the network checks that a user provided information is acceptable to the network

Special arrangement: agreement between a customer and a public network operator whereby customer supplied calling party ISDN numbers are not screened by the public ISDN

Basic access: see CCITT Recommendation Q.9 [7], clause 1, definition 1551

Primary rate access: see CCITT Recommendation Q.9 [7] clause 1, definition 1552

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction

4 Description

The CLIP supplementary service shall apply to the basic access and to the primary rate access. The CLIP supplementary service provides the called party with the possibility of receiving identification of the calling party.

In addition to the ISDN number, the calling line identity may include a subaddress generated by the calling user and transparently transported by the network. The network cannot be responsible for the content of this subaddress.

The network shall deliver the calling line identity to the called party during call establishment, regardless of the terminal capability to handle the information.

5 Procedures

5.1 Provision and withdrawal

The CLIP supplementary service may be provided after prior arrangement with the service provider or be generally available.

The CLIP supplementary service shall be withdrawn at the customer's request or for administrative reasons.

A special arrangement may exist whereby calling party provided ISDN numbers are not screened by the public ISDN.

5.2 Normal procedures

5.2.1 Activation, deactivation and registration

The CLIP supplementary service shall be activated and deactivated by the service provider. This supplementary service requires no registration.

5.2.2 Erasure

Not applicable.

5.2.3 Invocation and operation

The network shall automatically invoke the CLIP supplementary service in the call set-up phase.

The calling line identity supplied to the called party is made up of a number of information units:

- the national (ISDN) number;
- the country code and possible other indications only for international calls;
- optionally, subaddress information, if provided by the calling user.

The public ISDN shall treat such numbers in the same manner, including those provided under the special arrangement. This means that the public ISDN shall add a country code to a national ISDN number when a call crosses an international boundary.

5.2.3.1 Calling user side

A calling user can insert the calling line identity at call request.

In a full ISDN environment, the calling line identity shall include all the information necessary to unambiguously identify the calling line.

This information is generated:

- in the case of a terminal equipment directly connected to the public ISDN, normally by the public ISDN;
- in the case of a private ISDN connected to the public ISDN, normally by the private ISDN.

This information can be provided in the form of either a partial number or an ISDN number. Where a special arrangement exists this number shall be provided by the user as an E.164 [3] national or international number.

The public ISDN shall screen the provided number. In the case of a special arrangement (e.g. private network situation), no screening shall take place in the public ISDN and the public ISDN shall mark that number as "user provided, not screened".

For successful screening, the number shall be marked as "user provided, verified and passed". Where the public ISDN screening is successful, the public ISDN shall complete this number to form a national ISDN number.

If the user does not provide any number or the screening performed by the public ISDN is not successful, the public ISDN shall enter a default number marked as "network provided".

NOTE 1: Several levels of screening performed by the network can exist. In addition to the screening function described above annex C describes an other option.

NOTE 2: Provision of a partial number or an ISDN number will make sense only when the direct dialling in supplementary service or the multiple subscriber number supplementary service applies at the interface of the calling party. Where a special arrangement exists for not screening a calling party number, the provision of a national ISDN number or an international ISDN number is independent of the direct dialling in supplementary service or the multiple subscriber number supplementary service at that interface.

5.2.3.2 Called user side

When the CLIP supplementary service is invoked, the user shall receive the call with the calling line identity indicated above.

5.2.4 Interrogation

Not applicable.

5.3 Exceptional procedures

5.3.1 Activation, deactivation and registration

Not applicable.

5.3.2 Erasure

Not applicable.

5.3.3 Invocation and operation

If the presentation of the ISDN number of the calling user is restricted due to the CLIR supplementary service (see ETS 300 090 [8]), then the called ISDN user shall receive an indication that the calling line identity is not available because of restriction.

In some interworking situations in which the connection is not completely supported by sufficient signalling capability, then the called ISDN user shall receive an indication that the calling line identity is not available.

For an international call in which the originating network does not provide the calling line identity or a calling line identity is unavailable for some other reason, then the called ISDN user shall receive an indication that the calling line identity is not available.

5.3.4 Interrogation

Not applicable.

6 Intercommunication considerations

NOTE: In interworking situations when information is passed to other networks which do not support the requirements of the present document, information (e.g. the "user provided, not screened" number) could be discarded.

6.1 Interworking with non-ISDNs

According to national network specific rules, the CLIP supplementary service need not be applicable if at least one of the two parties is not an ISDN subscriber.

6.2 Interworking with private ISDNs

For a call which originated in the private ISDN, the private ISDN shall perform its own screening function on the calling user provided information, after which the resulting number shall be given to the public ISDN in the form of an E.164 [3] national or international ISDN number. This number shall be screened by the public ISDN unless a special arrangement has been made (see subclause 6.2.3.1).

NOTE: Several levels of screening performed by the network can exist. In addition to the screening function described above annex C describes an other option.

If the private ISDN does not provide any number, or if the screening performed by the public ISDN is unsuccessful, the public ISDN shall enter a default number and shall mark this number as "network provided".

Where the calling user is attached to a public ISDN and the called user is attached to a private ISDN, the public ISDN shall forward the appropriate calling party ISDN number to the private ISDN.

7 Interaction with other supplementary services

7.1 Advice of charge services

7.1.1 Charging information at call set-up time

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.1.2 Charging information during the call

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.1.3 Charging information at the end of the call

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.2 Call waiting

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.3 Call hold

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.4 Call transfer

7.4.1 Explicit call transfer

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.4.2 Single step call transfer

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.5 Number identification services

7.5.1 Calling line identification presentation

Not applicable.

7.5.2 Calling line identification restriction

The CLIR supplementary service shall normally take precedence over the CLIP supplementary service.

The CLIP supplementary service can take precedence over the CLIR supplementary service when the called user has an override category. This is a national matter, the operation of which is outside the scope of the present document.

7.5.3 Connected line identification presentation

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.5.4 Connected line identification restriction

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.6 Closed user group

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.7 Completion of calls to busy subscriber

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.8 Conference services

7.8.1 Conference call, add-on

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.8.2 Meet me conference

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.9 Direct dialling in

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

NOTE: At the calling party's user-network interface, the network may be supplied with a calling party number as a result of the direct dialling in supplementary service applying either:

- at that interface, in which case a partial or full calling party number may be supplied and may be subject to screening by the ISDN; or
- at that interface or at another interface to which the same private ISDN is attached, in which case a full (international or national) ISDN number may be supplied, subject to the existence of a special arrangement for not screening.

7.10 Diversion services

7.10.1 Call forwarding unconditional

When a call has been forwarded and the forwarded-to user has been provided with the CLIP supplementary service, the forwarded-to user shall receive the number of the original calling user, if this calling user has not subscribed to or invoked the CLIR supplementary service.

7.10.2 Call forwarding busy

When a call has been forwarded and the forwarded-to user has been provided with the CLIP supplementary service, the forwarded-to user shall receive the number of the original calling user, if this calling user has not subscribed to or invoked the CLIR supplementary service.

7.10.3 Call forwarding no reply

When a call has been forwarded and the forwarded-to user has been provided with the CLIP supplementary service, the forwarded-to user shall receive the number of the original calling user, if this calling user has not subscribed to or invoked the CLIR supplementary service.

7.10.4 Call deflection

When a call has been deflected and the deflected-to user has been provided with the CLIP supplementary service, the deflected-to user shall receive the number of the original calling user, if this calling user has not subscribed to or invoked the CLIR supplementary service.

7.11 Freephone

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.12 Malicious call identification

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.13 Multiple subscriber number

If the multiple subscriber number supplementary service is applicable to the public network access interface of the calling party, then this party can provide the appropriate calling party multiple subscriber number digits or the full ISDN number on outgoing call requests. If no special arrangement has been made with the calling subscriber, then the network shall check the user provided calling party number information for validity on the corresponding access. If the check fails or if no calling number information is provided by the user, then the network shall apply the default number of the calling party's access.

If the multiple subscriber number supplementary service is applicable to the public network access interface of the called party, then neither supplementary service shall affect the operation of the other supplementary service.

7.14 Subaddressing

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

NOTE: If the called user subscribes to the CLIP supplementary service, the calling party subaddress (if provided by the calling user) and the calling party number are presented to the called user.

7.15 Terminal portability

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.16 Three party

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

7.17 User-user signalling

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

Annex A (normative): Two calling party number delivery option

A.1 Scope

This annex describes additional features of the CLIP supplementary service that may be provided by some public ISDNs as a network option.

These additional features shall have no impact on and shall place no requirement whatsoever on the provision and operation of the CLIP supplementary service defined in the present document by the ISDNs that do not support these additional features, nor on the interchangeability of terminals.

A.2 Description

Some public ISDNs shall deliver two numbers at the called subscriber's user-to-network interface. The network provided number shall be marked "network provided" and presented together with the user provided unscreened number marked "user provided, not screened".

Principles for interaction with other supplementary service are those of clause 8 of the present document with the following characteristics:

- a) The CLIR supplementary service when subscribed-to/invoked at the calling side applies for both network provided and user provided numbers;
- b) When a call has been forwarded/diverted and the forwarded-to/diverted-to user has been provided with the CLIP supplementary service, that user shall receive the original user and network provided numbers if this calling user has not subscribed to/invoked the CLIR supplementary service.

Annex B (informative): Terminal interchangeability between public and private ISDNs

In private ISDNs, Private Numbering Plans are likely to be used, either as an alternative to, or as an addition to, the ISDN numbering plan according to ITU-T Recommendation E.164 [3]. In order to connect terminals to private ISDNs, terminals need to support such number plans. To ensure terminal interchangeability, terminals need to support both kinds of numbering schemes.

Relevant material has been published by the European Computer Manufacturers' Association (ECMA), including a standard ECMA-155 [11].

Annex C (informative): Extended screening option

C.1 Scope

This annex describes an extended screening option of the CLIP supplementary service that may be provided by some public ISDNs as a network option. This additional option does not apply when the special arrangement is used.

The purpose of this extended screening option is to provide a possibility of maintaining the original calling line identity in cases where calls from private ISDN can be routed to the public network via different nodes. This is known as far end breakout or least cost routing. To support this possibility, the extended screening option allows that entries of the screening list could be replicated to (an) other location(s) in the network. Without the extended screening capability, the original calling line identity is replaced by a network provided number because the original calling line identity is not on the screening list of the public network node at which the call enters the public network.

This service enables the public network to provide an improved assessment of the calling line identity, and this number is then available for delivery by the CLIP supplementary service, and available for use within the MCID supplementary services, and available for use for other network, administrative and regulatory purposes.

This extended screening option will also reduce the need for users of private ISDNs to invoke CLIR to prevent the presentation of network provided numbers. Therefore it will also reduce the loss of calls because of unintended rejections by Anonymous Call Rejection services.

This extended screening option shall have no impact on and shall place no requirement whatsoever on the provision and operation of the CLIP supplementary service defined in the present document and related functions (e.g. billing and monitoring) and other services (e.g. freephone) by the ISDNs that do not support these extended options, nor on the interchangeability of terminals.

NOTE: Operators implementing this option on the request of the calling subscriber, should ensure that the customer receives sufficient information to inform other operators using their CLI e.g. for billing or access purposes.

C.2 Description

NOTE 1: To be read in conjunction with the statements in clause 6.2.3.1 "Calling user side" and clause 7.2 "Interworking with private ISDNs" in the main part of the present document.

Screening is defined to be a process whereby the network checks that a user provided information is acceptable to the network. This is understood to be consisting of a list of numbers against which the network checks the user provided number. The screening process checks for the numbers and/or the number ranges associated with the calling user (including DDI and MSN). The screening ensures to the called party that these numbers are guaranteed by the public ISDN for identification of the calling party.

These numbers and/or number ranges for use in the screening process may be settled between the customer of the access and the public network operator. The service provider/network operator is obliged to ensure that the screening list for a calling subscriber contains only such numbers which are allocated to the calling subscriber/user and thus make the caller identifiable to the called party.

The numbers entered into the screening list for a calling subscriber should be numbers of publicly available telecommunications services allocated to the calling subscriber/user, e.g. E.164 [3] numbers. The screening list may contain numbers such as:

- from several geographic locations (e.g. corporate network with access lines in different areas) if the subscriber has physical access lines with distinct numbers at those locations, and/or
- from different service providers/network operators if the calling subscriber/user has contracts for the provision of publicly available telecommunications services with them and was allocated numbers by them, and/or
- from different publicly available telecommunications services (e.g. value added services provided by the PSTN/ISDN) if the calling subscriber subscribes to their provision and is identifiable by them.

It is essential that the called party can identify the calling party.

NOTE 2: The extended screening option may have the effect that entries of the screening list could be replicated to (an)other location(s) in the network. For this purpose, the number provided by the user respectively contained in the screening list should be sufficiently significant. I.e. the type of number should be "national" or "international", if the numbers of such a replicated screening list do not belong to the same local area or country code as the user.

History

Document history		
Edition 1	January 1992	Publication as ETS 300 089
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