I.251.7Malicious Call Identification

These services being identified need to be further studied and the descriptions are not yet included.

I.251.8Sub-addressing

These services being identified need to be further studied and the descriptions are not yet included.

When the diverted call is finally answered, no connected number will be presented to the calling party unless this party has an override category. The latter is a national option.

6.11Line Hunting

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

6.12Three-Party Service

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

6.13User-to-User Signalling

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

6.14Multiple Subscriber Number

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

6.15Call Hold Service

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

6.16 Advice of Charge

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

7.Dynamic description

The dynamic description for this service is shown in Figure 1/I.251.6.

If User C has subscribed to COLR, then User A shall not receive the connected number when User A invokes any call transfer procedure. If User C has subscribed to COLR, then User B shall not receive the connected number during the transfer of User B to User C.

6.3Connected Line Identification Presentation

COLR will take precedence over COLP. The only occasion when a User subscribing to COLP can take precedence over COLR is when the User has an override category. This is a national option.

6.4Conencted Line Identification Restriction

Not relevant.

6.5Calling Line Identification Presentation

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

6.6Calling Line Identification Restriction

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

6.7Closed User Group

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

6.8Conference Call

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

6.9Direct Dialling In

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

6.10Diversion services

6.10.1Call Forwarding Busy

When the diverted call is finally answered, no connected number will be presented to the calling party unless this party has an override category. The latter is a national option.

6.10.2Call Forwarding No Reply

When the diverted call is finally answered, no connected number will be presented to the calling party unless this party has an override category. The latter is a national option.

6.10.3Call Forwarding Unconditional

No alternative procedures identified.

3.4.2Invocation and operation

Certain countries may define categories of subscribers that have the ability to override the presentation restriction and have the connected party's ISDN number presented (e.g., the police).

The ability to have such override category is a national option.

When a call originates in one ISDN and terminates in another ISDN and COLR is applied, the rules and regulations of the destination network (the host network) should apply. For example, if override category is not applicable in the originating network but in the destination network a call with COLR applied can still be overridden in the destination network, whenever information on the connected line is available for this network.

4.Network capabilities for charging

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service.

5.Interworking requirements

On calls to or via non-ISDNS, it cannot be assured that a COLR indication can be carried to the originating network. As a national option the destination network shall have the possibility to restrict any information identifying the connected party from being returned to the originating network when COLR is applicable. If a network receives a connected party ISDN number without any indication of presentation allowed or restricted, the originating network (the host network) will act according to its rules and regulations.

6.Interaction with other supplementary services

6.1Call Waiting

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

Assume that a call from a User at C, invokes Call Waiting at User B, who has subscribed to the COLR service. The User B would receive a call waiting indication but would not have his number returned when the call waiting indication is given.

6.2Call Transfer

Assume that User A has an established call with User B and wishes to transfer this call with User B to a User C.

3.1Provision/withdrawal

COLR can be provided on a subscription basis or be generally available.

As a network provider option, COLR can be offered with several subscription options. The options apply separately to each ISDN number. Subscription options are summarized below:

Subscription Option	Values
COLR mode	- permanent (active for all calls) - temporary (specified by user per call)
Default (only for temporary mode)	- presentation restricted - presentation not restricted

It is a network provider option to specify either or both of the above options for all subscribers, for instance, in an exchange or network.

3.2Normal procedures

3.2.1Activation/deactivation/registration

If subscribed to in the permanent mode, COLR is always activated. If subscribed to on a temporary basis, COLR is activated upon explicit request for the service, or on default, on a particular call and is deactivated after that call.

3.2.2 Invocation and operation

If the calling party subscribes to Connected Line Identification Presentation and the connected party has COLR activated, the calling party shall receive an indication that the connected party number is not available.

3.3Exceptional procedures

3.3.1Activation/deactivation/registration

No exceptional procedures identified.

3.3.2Invocation and operation

No exceptional procedures identified.

3.4Alternative procedures

3.4.1Activation/deactivation/registration

I.251.6 Connected Line Identification Restriction

1. Definition

Connected Line Identification Restriction (COLR) is a supplementary service offered to the connected party to restrict presentation of the connected party's ISDN-number to the calling party.

2. Description

2.1 General description

When COLR is applicable and activated, the destination node provides the originating node with a notification that the connected party's ISDN number is not allowed to be presented to the calling party. In this case no connected party number is included in the call connected information to the calling party's installation.

Note - When COLR is subscribed to, some Network Providers may not wish to sendthe identity of the connected customer to other Network Providers.

2.2 Specific terminology

None identified.

2.3 Qualifications on the applicability to telecommunications services

None identified, i.e., this supplementary service is applicable to all telecommunication services.

3. Procedures

also subscribed to a notification option with his CFNR service, calling User A may receive the forwarded-to User C's number with the notification of the forwarding. In any event, assuming User C answers the call, User C's number will be returned to User A unless User C has subscribed to COLR.

6.10.3Call Forwarding Unconditional (CFU)

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

Assume a calling User A, who has subscribed to COLP, places a call to a User B who has subscribed to the CFU service. This call to User B would then be forwarded to User C. If User B has also subscribed to a notification option with his CFU service, calling User A may receive the forwarded-to User C's number with the notification of the forwarding. In any event, assuming User C answers the call, User C's number will be returned to User A unless User C has subscribed to COLR.

6.11Line Hunting

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

6.12Three-Party Service

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

6.13User-to-User Signalling

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

6.14Multiple Subscriber Number

Assume User A, who has subscribed to COLP, places a call to a User B to which the network is applying the MSN service. Assuming User B answers the call, the connected number at B (which may be identical to the called number) will be returned to User A unless User B has subscribed to COLR. Other interactions are for further study.

6.15Call Hold Service

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

6.16 Advice of Charge

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

7.Dynamic description

The dynamic description for this service is shown in Figure 1/I.251.5.

The connected line identification will not be presented if the connected User has subscribed to COLR.

6.5 Calling Line Identification Presentation

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

6.6 Calling Line Identification Restriction

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

6.7 Closed User Group

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

6.8 Conference Calling

A Conference Controller who has also subscribed to COLP should be presented with the connected party's number when that party is either part of the initial activation of the conference or is added as a new conferee to an existing conference.

Conferees in an existing conference who have subscribed to COLP will notreceive a new party's number whenever a conference controller adds a new party to the conference.

6.9 Direct Dialling In

For further study.

6.10 Diversion services

6.10.1 Call Forwarding Busy (CFB)

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

Assume a calling User A, who has subscribed to COLP, places a call to a User B who is busy and this call is forwarded to a User C. If User B has also subscribed to a notification option with his CFB service, calling User A may receive the forwarded-to User C's number with the notification of the forwarding. In any event, assuming User C answers the call, User C's number will be returned to User A unless User C has subscribed to COLR.

6.10.2 Call Forwarding No Reply (CFNR)

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

Assume a calling User A, who has subscribed to COLP, places a call to a User B who has subscribed to the CFNR service, and who does not reply to the call within the subscribed time interval. If User B has

4.Network capabilities for charging

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service.

5.Interworking requirements

On calls destined for some non-ISDN networks, the connected number may be delivered to the originating ISDN without the ability to indicate whether presentation is allowed or not. How the ISDN should behave in this case is for further study.

On calls destined for some other non-ISDN networks, no connected party number may be available to the ISDN and therefore the full number of the connected party cannot be given to the calling party who has been provided with COLP. In this situation a partial number shall be given unless no information is available whereupon a number unavailable indication is given to the calling party.

6.Interaction with other supplementary services

6.1Call Waiting

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

6.2Call Transfer

Assume the situation where a User A has an established call with a User B and wishes to transfer this call with User B to a User C.

Except in the case where User C prohibits the presentation of his number, User C's number shall be presented:

- to User B upon successful completion of the transfer to User C (independent of the type of transfer procedure invoked by User A) provided that User B has subscribed to COLP;

- to User A when User A is using normal or explicit transfer procedures and has subscribed to COLP. The connected party's number will not be presented to User A if User A invokes the single step Call Transfer procedure.

Note that the connected number presentation may not be possible if interworking with a non-ISDN network is invoked in the call transfer.

6.3Connected Line Identification Presentation

Not applicable.

6.4Connected Line Identification Restriction

3.3 Exceptional procedures

3.3.1 Activation/deactivation/registration

None identified.

3.3.2 Invocation and operation

3.3.2.1 There are two exceptions when the connected party number is notpresented to the calling party:

i) when the connected party has (see definition of Connected Line Identification Restriction) an arrangement that presentation of his number is not allowed; or

ii) when the connected party number is not available, e.g., due to interworking with the (analogue) Public Switched Telephone Network (PSTN).

In such cases the calling party shall be given a number unavailable indication.

If the network check on the connected party provided number is unsuccessful, the network default number will be used instead.

3.4 Alternative procedures

3.4.1 Activation/deactivation/registration

None identified.

3.4.2 Invocation and operation

Override category

In some cases where a connected party has an arrangement that presentation of his number is not allowed, there may be certain categories of calling party that have the ability to override this restriction and have the connected number presented. This function is a national matter.

Problems may occur when the connected party does not belong to the same network as the calling party and in the connected party's network the override category does not exist, but in the calling party's network this category does exist. A problem occurs when a connected party who restricts presentation and assumes that his number is never presented, receives a call from a calling party who has the override category.

The cases where the override category is applied is a national matter. Depending on bilateral agreement about the application of the override category in country A, and the presentation not allowed arrangement of the connected party in country B, country B may or may not deliver the connected line identification to country A. Agreements are also needed with any transit network.

2.3Qualifications on the applicability to telecommunication services

This supplementary service is applicable to all telecommunication services.

It is to be noted that in the Telematic services an exchange of Terminal Identification (TID) occurs at a higher layer subsequent to a successful call establishment.

For Telematic services this supplementary service shall consist only of the access number of the connected party and this shall be provided by the network. For other non-voice services this supplementary service is for further study. The presentation of the connected party's ISDN number by Telematic terminals and by other non-voice terminals is for further study.

3.Procedures

3.1Provision/withdrawal

The COLP supplementary service may be provided on a subscription basis or be generally available.

COLP may be withdrawn at the request of the subscriber or by the network provider for administration reasons.

3.2Normal procedures

3.2.1Activation/deactivation/registration

COLP is activated on provision and deactivated on withdrawal.

No information needs to be registered with the network for this supplementary service.

3.2.2 Invocation and operation

The number presented shall unambiguously identify the access of the connected party. The number presented is either:

i) completely provided by the network;

ii) completely provided by the connected party; or

iii) partially provided by the network with the rest provided by the connected party, e.g., the access number is provided by the network and the additional digits to make the number complete by the connected party.

Where either the complete connected number, or part of the connected number is initially provided by the connected party the network shall check its validity. If this check is successful then this number is used by the network.

The dynamic description for this service is shown in Figure 1/I.251.4.

I.251.5 Connected Line Identification Presentation

1. Definition

Connected Line Identification Presentation (COLP) is a supplementary service offered to the calling party which provides the connected party's ISDN- number to the calling party.

2. Description

2.1 General description

When COLP is applicable and activated, the network provides the calling party with the number of the connected party when the connected party answers the incoming call. The network should be capable of transmitting at least 15 digits (maximum length of an ISDN number).

Note - The possibility of enhancing this service to provide the called party number before the called party answers the call is for further study.

2.2 Specific terminology

None identified.

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

6.9 Direct Dialling In

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

6.10 Diversion services

6.10.1 Call Forwarding Busy

When CLIR is applicable and activated, the calling party's ISDN-number will not be presented to the "forwarded-to" user unless this user has an override category. The latter is a national option.

6.10.2 Call Forwarding No Reply

When CLIR is applicable and activated, the calling party's ISDN-number will not be presented to the "forwarded-to" user unless this user has an override category. The latter is a national option.

6.10.3 Call Forwarding Unconditional

When CLIR is applicable and activated, the calling party's ISDN-number will not be presented to the "forwarded-to" user unless this user has an override category. The latter is a national option.

6.11 Line Hunting

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

6.12 Three-Party Service

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

6.13 User-to-User Signalling

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

6.14 Multiple Subscriber Number

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

6.15 Call Hold Service

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

6.16 Advice of Charge

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

7. Dynamic description

is applicable. If a network receives a calling party ISDN number without any indication of presentation allowed or restricted, the destination network (the host network) will act according to its rules and regulations.

6.Interaction with other supplementary services

6.1Call Waiting

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

Assume that a call from a User at C, who has subscribed to the CLIR service, invokes Call Waiting at a User(s) at B. The User(s) at B would receive a call waiting indication but would not receive the calling User at C's number when the call waiting indication is given.

6.2Call Transfer

Assume that a User A has an established call with User B and wishes to transfer this call with User B to User C. If User A has subscribed to CLIR, then User C shall not receive a calling number when User A invokes any call transfer procedure. If User B has subscribed to CLIR, then User C shall not receive a calling number during the transfer of User B to User C.

6.3Connected Line Identification Presentation

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

6.4Connected Line Identification Restriction

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

6.5Calling Line Identification Presentation

CLIR will take precedence over Calling Line Identification Presentation (CLIP).

The only occasion when a user subscribing to CLIP can take precedence over CLIR is when the user has an override category. This is a national option.

6.6Calling Line Identification Restriction

Not relevant.

6.7Closed User Group

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

6.8Conference Call

3.2.2 Invocation and operation

If the called party subscribes to Calling Line Identification Presentation and the calling party has CLIR activated, the called party shall receive an indication that the calling party number is not available.

3.3Exceptional procedures

3.3.1Activation/deactivation/registration

No exceptional procedures identified.

3.3.2Invocation and operation

No exceptional procedures identified.

3.4Alternative procedures

3.4.1Activation/deactivation/registration

No alternative procedures identified.

3.4.2Invocation and operation

Certain countries may define categories of subscribers that have the ability to override the presentation restriction and have the calling party's ISDNnumber and any Sub-Address presented (e.g., the police).

The ability to have such override category is a national option.

When a call originates in one ISDN and terminates in another ISDN and CLIR is applied, the rules and regulations of the destination network (the host network) should apply. For example, if override category is not applicable in the originating network but in the destination network a call with CLIR applied can still be overridden in the destination network, whenever information on the calling line is available for this network.

4.Network capabilities for charging

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service.

5.Interworking requirements

On calls to or via non-ISDNs, it cannot be assured that a CLIR indication can be carried to the destination network. As a national option the originating network shall have the possibility to restrict any information identifying the calling party from being forwarded to the destination network when CLIR

2.1 General description

When CLIR is applicable and activated the originating node provides the destination node with a notification that the calling party's ISDN number and any Sub-Address information, is not allowed to be presented to the called party. In this case no calling party number is included in the call offering to the called party's installation.

Note - When CLIR is subscribed to, some Network Providers may not wish to send the originating identity of the calling customer to other Network Providers.

2.2 Specific terminology

None identified.

2.3 Qualifications on the applicability to telecommunications services

None identified, i.e., this supplementary service is applicable to all telecommunication services.

3. Procedures

3.1 Provision/withdrawal

CLIR can be provided on a subscription basis or be generally available.

As a network provider option, CLIR can be offered with several subscription options. The options apply separately to each ISDN number. Subscription options are summarized below:

Subscription Option		Values
CLIR mode		- permanent (active for all calls)
		- temporary (specified by user per call)
Default	(only for temporary mode)	- presentation restricted
		- presentation not restricted

It is a network provider option to specify either or both of the above options for all subscribers, for instance, in an exchange or network.

3.2 Normal procedures

3.2.1 Activation/deactivation/registration

If subscribed to in the permanent mode, CLIR is always activated. If subscribed to on a temporary basis, CLIR is activated upon explicit request for the service, or on default, on a particular call and is deactivated after that call.

6.14Multiple Subscriber Number

See text in Multiple Subscriber Number definition.

6.15Call Hold Service

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

6.16Advice of Charge

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

7.Dynamic description

The dynamic description for this service is shown in Figure 1/I.251.3.

I.251.4Calling Line Identification Restriction

1.Definition

Calling Line Identification Restriction (CLIR) is a supplementary service offered to the calling party to restrict presentation of the calling party's ISDN-number and Sub-Address to the called party.

2.Description

Any party that has subscribed to CLIP will receive the number of a calling conference controller when:

- the party is to be included as a "New Party" during the invocation of a conference call; or

- the party is being added to an existing conference call.

6.9 Direct Dialling In

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

6.10 Diversion services

If an incoming call to the party to which CLIP has been provided has already been forwarded, then the calling party's number should be the number of the original calling party.

6.10.1 Call Forwarding Busy

See text in Call Forwarding Busy for further information.

6.10.2 Call Forwarding No Reply

See text in Call Forwarding No Reply for further information.

6.10.3 Call Forwarding Unconditional

See text in Call Forwarding Unconditional for further information.

6.11 Line Hunting

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

The Line Hunting service occurs before CLIP. The Line Hunting service would first provide a selection of an interface for presentation of a call. Once the service selects an interface, normal call processing would occur including the presentation of the calling party's number to a selected interface who has subscribed to CLIP.

6.12 Three-Party Service

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

6.13 User-to-User Signalling

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

vided with CLIP. In this situation a partial number, or a number unavailable indication, is given to the called party.

As a national option, the originating network shall have the possibility to restrict any information identifying the calling party from being forwarded to another network. If a destination network receives a calling party ISDN number without any indication of presentation allowed or restricted, the destination network (host network) will act according to its own rules and regulations.

6.Interaction with other supplementary services

6.1Call Waiting

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

If an ISDN User(s) who has subscribed to the Call Waiting service at his B access, has been given a call waiting indication and has subscribed to the CLIP service, then the calling party's number shall be presented to the ISDN User(s) at B at the time the call waiting indication is given. The presentation of the CLIP information shall be the same as when the ISDN User(s) at B receives a normal call.

6.2Call Transfer

See text in § 6.5, CLIP, in the Call Transfer supplementary service definition.

6.3Connected Line Identification Presentation

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

6.4Connected Line Identification Restriction

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

6.5Calling Line Identification Presentation

Not relevant.

6.6Calling Line Identification Restriction

The calling line identification will not be presented if the calling user has an arrangement to inhibit the presentation of his number to the called party. The only occasion when a user subscribing to CLIP can take precedence over CLIR is when the user has an override category. This is a national option.

6.7Closed User Group

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

6.8Conference Calling

i) when the calling party has an arrangement (see definition of Calling Line Identification Restriction) that presentation of his number is not allowed; and

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

In such cases no number is presented to the called party, but he shall receive an indication that the number of the calling party is unavailable.

3.4 Alternative procedures

3.4.1 Activation/deactivation/registration

None identified.

3.4.2 Invocation and operation

In some cases where a calling party has an arrangement that presentation of his number is not allowed, there may be certain categories of called party that have the ability to override this restriction and have the calling number presented. This function is a national option.

Problems may occur when the calling party does not belong to the same network as the called party and in the calling party's network the override category does not exist, but in the called party's network this category does exist. A problem occurs when a calling party who restricts presentation and assumes that his number is never presented, makes a call to a called party who has the override category.

The cases where the override category is applied is a national matter. Depending on bilateral agreement about the application of the override category in country B, and the presentation not allowed arrangement of the calling party in country A, country A may or may not deliver the calling line identification to country B. Agreements are also needed with any transit network.

4. Network capabilities for charging

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service.

5. Interworking requirements

On calls incoming from some non-ISDN networks, the calling number may be delivered to the destination ISDN without the ability to indicate whether presentation is allowed or not. How the ISDN should behave in this case is for further study.

From some other non-ISDN networks, no calling party number may be available to the ISDN and therefore the full number of the calling party cannot be given to the called party who has been pro-

3.Procedures

3.1Provision/withdrawal

CLIP may be provided on a subscription basis or be generally available. CLIP may be withdrawn at the request of the subscriber or by the network provider for administration reasons.

3.2Normal procedures

3.2.1Activation/deactivation/registration

CLIP is activated on provision and deactivated on withdrawal. No information needs to be registered with the network for this supplementary service.

3.2.2Invocation and operation

The number presented shall unambiguously identify the access of the calling party. The number presented is either:

i) completely provided by the network;

ii) completely provided by the calling party; or

iii) partially provided by the network with the rest provided by the calling party, e.g., the access number is provided by the network and the additional digits to make the number complete by the calling party.

Where either the complete calling number, or part of the calling number is initially provided by the calling party, the network shall check its validity. If this check is successful, then this number is used by the network. For complete calling numbers, this validity check shall determine whether the number is allocated to the access; for partially provided numbers this check shall for example, determine whether the digits are within the allocated range.

3.3Exceptional procedures

3.3.1Activation/deactivation/registration

None identified.

3.3.2Invocation and operation

If the network check on a calling party provided number is unsuccessful, the network will use the default number as the number of the calling party.

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

6.16Advice of Charge

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

7.Dynamic description

The dynamic description is as for the basic services.

I.251.3Calling Line Identification Presentation

1.Definition

Calling Line Identification Presentation (CLIP) is a supplementary service offered to the called party which provides the calling party's ISDN- number, possibly with sub-address information, to the called party.

2.Description

2.1General description

When CLIP is applicable and activated, the network provides the calledparty with the number of the calling party at call set-up on all incoming calls.

The calling party number may be accompanied by a sub-address.

The network should be capable of transmitting at least 15 digits (maximum length of an ISDN number). In addition, if provided by the calling party, the network should be capable of transmitting a sub-address.

The network to which the calling party belongs should attempt to ensure that enough digits are transmitted to enable the called party to return the call, based on the calling number presented.

2.2Specific terminology

None identified.

2.3Qualifications on the applicability to telecommunication services

This supplementary service is applicable to all telecommunication services.
It is to be noted that in the Telematic services an exchange of Terminal Identification (TID) occurs at a higher layer subsequent to a successful call establishment.

For Telematic services this supplementary service shall consist only of the access number of the calling party and this shall be provided by the network. For other non-voice services this supplementary service is for further study. The presentation of the calling party's ISDN-number by Telematic terminals and by other non-voice terminals is for further study.

6.7Closed User Group

For further study.

6.8Conference Calling

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

6.9Direct Dialling In

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

6.10Diversion services

6.10.1Call Forwarding Busy

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

6.10.2Call Forwarding No Reply

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

6.10.3Call Forwarding Unconditional

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

6.11Line Hunting

For further study.

6.12Three-Party Service

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

6.13User-to-User Signalling

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

6.14Multiple Subscriber Number

Not applicable.

6.15Call Hold Service

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

3.4.2Invocation and operation

None identified.

4.Network capabilities for charging

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service.

5.Interworking requirements

None identified.

6.Interaction with other supplementary services

In case of interaction with other supplementary services, these services could be applicable to the individual MSN rather than to the subscriber access.

6.1Call Waiting

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

6.2Call Transfer

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

6.3Connected Line Identification Presentation

See COLP (I.251.5) interaction with MSN.

6.4Connected Line Identification Restriction

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

6.5Calling Line Identification Presentation

Upon call initiation, if the ISDN number indicated by the MSN user terminal is not subscribed to for the interface, or if no numbering information is indicated, a default number (if designated by the MSN subscriber) or a number unavailable indication is provided to the CLIP user.

6.6Calling Line Identification Restriction

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

i) identical to that last digit(s) of the ISDN number; or

ii) generated by the network on the basis of a mapping process between ISDN number(s) and MSN digit(s).

Terminals compatible to the MSN service will react on a call as follows:

- if MSN digit(s) equal to their own preadjusted identity is (are) presented, they react to it in a predetermined way;

- if there is a setup message without MSN digit(s), the terminal will interpret it as a normal call. (This may happen if a terminal with MSN capabilities is used on an interface, where MSN is not subscribed for.)

Terminals not compatible to the MSN service will react on a call as follows:

- either if there is (are) MSN digit(s) or not, the call will be interpreted as a normal call.

On outgoing calls a terminal compatible with the MSN service may provide the ISDN number (or MSN digits) when placing the call. The network will carry this identity unchanged or will replace the digit(s) by the associated ISDN number. The ISDN number of the calling terminal will then be sent to the called user with the incoming call (refer to CLIP supplementary service).

It is possible to allocate one ISDN number to one or more terminals. Similarly, one terminal may allow the assignment of one or more than one number. Further, as an administrative option a specific digit or sequence of digits may be allocated to enable all terminals in a point-to-multipoint configuration to react in the same way as if the supplementary service MSN would not be subscribed to.

3.3 Exceptional procedures

3.3.1 Activation/deactivation/registration

Not applicable.

3.3.2 Invocation and operation

An ISDN number or MSN digits, generated by a terminal at an interface where MSN is in operation shall be discarded by the network unless this number is subscribed to by this interface. A default number may be provided by the network.

3.4 Alternative procedures

3.4.1 Activation/deactivation/registration

None identified.

The essential difference between this supplementary service and DDI concerns the length of the number sent to and processed by the user's installation. In the DDI situation the user (ISPBX) will be tailored on a per installation basis to receive the particular number of digits necessary to identify the terminals of this user (ISPBX).

With the multiple subscriber number supplementary service however, the service provider will fix the length of the number to be transmitted to the user's installation. It may comprise 1 or 2 or 3 of the last digits up to the full ISDN number. This number will be sent to the user network interface.

The digit(s) significant for terminal differentiation is/are an integral part of the ISDN numbering scheme.

Note - MSN is independent from and does not impose any constraints on "service indication" and "sub-addressing".

2.2 Specific terminology

None.

2.3 Qualifications on the applicability to telecommunications services

No restrictions.

3. Procedures

3.1 Provision/withdrawal

The service shall be provided after pre-arrangement with the service provider.

The service provider shall allocate a set of ISDN numbers (not necessarily consecutive). At the option of the service provider, one of these numbers may be designated by the MSN subscriber as the default number for the interface. At the option of the service provider, the user may specify a mapping arrangement between ISDN number and MSN digit(s).

3.2 Normal procedures

3.2.1 Activation/deactivation/registration

Activation through subscription.

3.2.2 Invocation and operation

The destination number sent by the calling user will be analyzed in the network. If the called user subscribes to this supplementary service, the network sends the available part of the ISDN number or at least the relating digit(s)

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

6.16Advice of Charge

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

7.Dynamic description

The dynamic description is as for basic services.

I.251.2Multiple Subscriber Number

1.Definition

Multiple Subscriber Number (MSN) provides the possibility for assigning multiple ISDN numbers to a single interface. This allows e.g.

1) to dial from a line connected to a public network directly to terminals connected to a basic access which has subscribed to MSN (e.g. in a passive bus configuration);
2) the network to determine which ISDN number is applicable on originating calls, e.g. for charging purposes, for notification to the called party and application for supplementary services.

It is considered:

- that some administrations may not have knowledge or control over what is connected to the basic access, e.g. an NT2 or passive bus;

- that administrations have differing numbering methods;

- that common international terminal specifications are desired.

2.Description

2.1General description

The addressing of terminals on a basic access may be achieved by applying a set of ISDN numbers to the single basic access. When a call with one of these ISDN numbers is delivered, the called number is indicated to the MSN user, either directly or through a mapping by the network.

In general, any set of numbers may be sent from the network to the subscriber's equipment during call establishment. However, it is recognized that administrative practices and certain equipment designs may lead to the adoption of restricted numbering sequences, e.g. by relating the last digit(s) of a fixed length ISDN number to the terminals to be connected. The actual method of relating the ISDN number to a particular terminal is a matter of national implementation but may, for example, be done by central intelligence or by distributed intelligence within the terminals.

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

6.7Closed User Group

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

6.8Conference Calling

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

6.9Direct Dialling In

Not applicable.

6.10Diversion services

6.10.1Call Forwarding Busy

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

6.10.2Call Forwarding No Reply

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

6.10.3Call Forwarding Unconditional

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

6.11Line Hunting

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

6.12Three-Party Service

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

6.13User-to-User Signalling

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

6.14Multiple Subscriber Number

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

6.15Call Hold Service

convenient.

3.4Alternate procedures
3.4.1Activation/deactivation/registration

Not identified.

3.4.2Invocation and operation

Not identified.

4.Network capabilities for charging

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service. For example, supplementary service provision may be part of the general subscription charges. Charges may include a subscription fee and a rental charge proportional to the quantity of numbers assigned.

5.Interworking requirements

No problems identified.

6.Interaction with other supplementary services

6.1Call Waiting

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

6.2Call Transfer

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

6.3Connected Line Identification Presentation

For further study.

6.4Connected Line Identification Restriction

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

6.5Calling Line Identification Presentation

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

6.6Calling Line Identification Restriction

vice MSN.

Note 2 - The caller may or may not find the ISDN number in the public directory.

2.2Specific terminology

None.

2.3Qualifications on the applicability to telecommunications services

No restrictions.

3.Procedures

3.1Provision/withdrawal

This service shall be provided/withdrawn after pre-arrangement with the service provider. The service provider shall allocate a set of ISDN numbers.

3.2Normal procedures

3.2.1Activation/deactivation/registration

Activation through subscription.

3.2.2Invocation and operation

Call initiation procedures are the same as for the basic service. The calling and called users perceive the same completion procedures as for the basic service, without attendant intervention. Upon answer, the calling user is connected to the called user designated by the ISDN number.

Note - When the connection from the caller to the ISPBX is established, the called ISPBX might use the connection for call progress signalling transmission.

3.3Exceptional procedures

3.3.1Activation/deactivation/registration

Not applicable.

3.3.2Invocation and operation

If the called user is busy or does not answer, the procedures for basic calls will apply.

If a call is made by sending incomplete address information, the call will be released by time supervision within the public exchange. A corresponding time supervision within the ISPBX may also be

Recommendation I.251 - Number identification supplementary services

The purpose of this Recommendation is to provide the stage 1 description of the method defined in Recommendation I.130 using the means given in Recommendation I.210.

Supplementary services are described by a prose definition and description (step 1.1) and by a dynamic description (step 1.3). The application of the attribute technique, as defined in Recommendation I.140, for supplementary services is for further study.

This Recommendation describes the following Number Identification Supplementary Services:

I.251.1 - Direct Dialling In (DDI)

I.251.2 - Multiple Subscriber Number (MSN)

I.251.3 - Calling Line Identification Presentation (CLIP)

I.251.4 - Calling Line Identification Restriction (CLIR)

I.251.5 - Connected Line Identification Presentation (COLP)

I.251.6 - Connected Line Identification Restriction (COLR)

I.251.7 - Malicious Call Identification (MCI) (Note 1)

I.251.8 - Sub-addressing (SUB) (Note 1)

Note 1 - These services being identified need to be further studied and the descriptions are not yet included.

I.251.1Direct Dialling In

1.Definition

Direct Dialling In (DDI) enables a user to directly call another user on a ISPBX or other private system without attendant intervention.

2.Description

2.1General description

A part of the ISDN number, which is significant to the called user, is passed to that user during call establishment. This supplementary service is based on the use of the ISDN number and does not include sub-addressing.

Note 1 - A similar method to select a terminal on a passive bus is described in the supplementary ser-