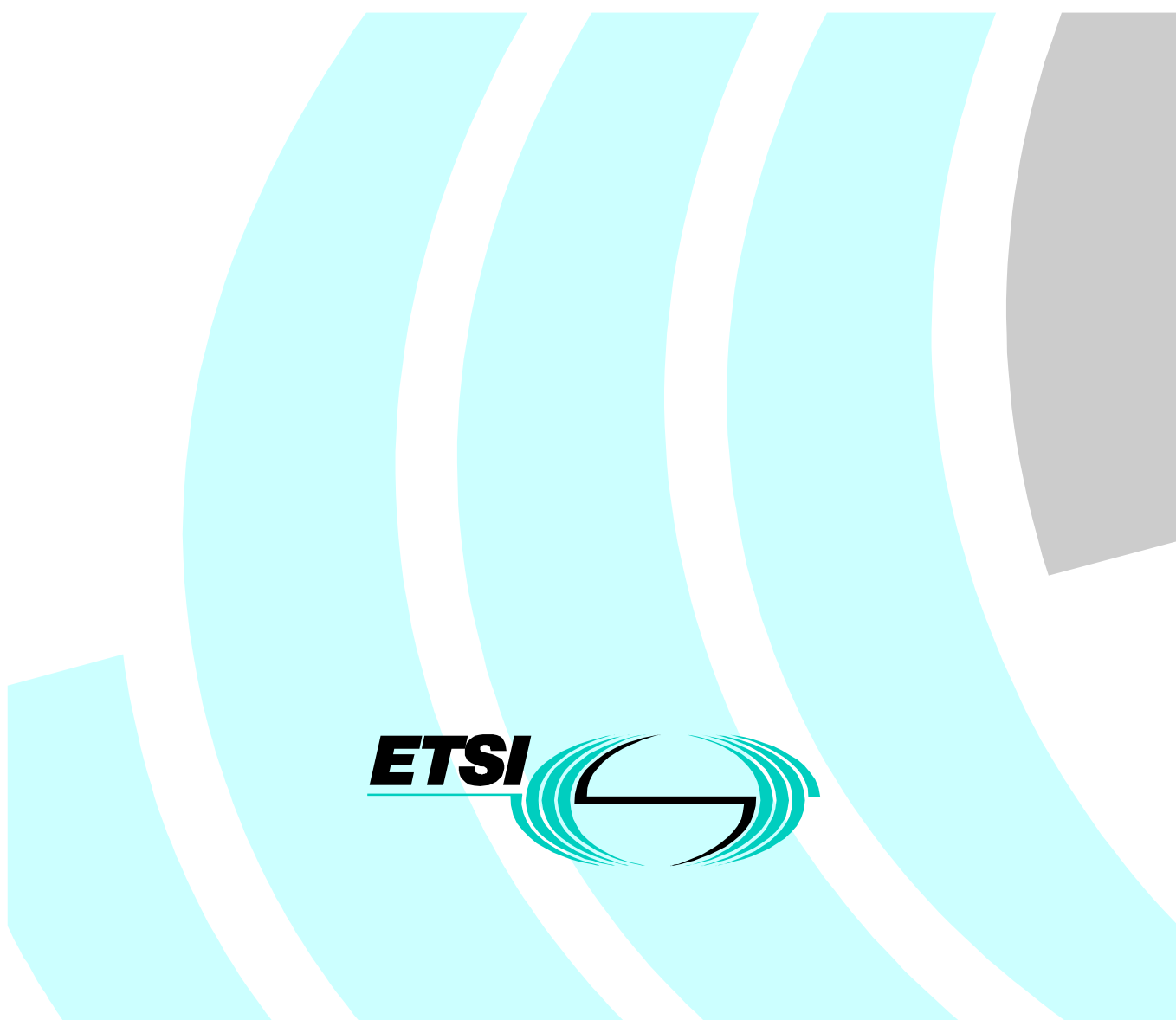


**Integrated Services Digital Network (ISDN);
Supplementary service interactions**



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Foreword

This ETSI Guide (EG) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the ETSI standards Membership Approval Procedure.

Introduction

In the present document the stage one of the ISDN supplementary service interactions have been collected into a single document. With the current approach of the supplementary service standardization in ETSI, where the interactions are described in the standards of each supplementary service concerned, it is hard to keep track of where the latest version of the text is located. This trial document contains the same set of approved supplementary services as the latest version of the respective stage three interaction document (EN 300 195-1 V1.4.3). For this trial period the current approach will be kept in parallel, i.e. for the supplementary services currently under work, the interactions are described in the standards of each supplementary service. Also the approved standards will not be modified by deleting the texts on interactions.

1 Scope

The present document gives guidance on the stage one of the supplementary service interactions for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators.

The interactions between the Advice of Charge: charging information at call set-up time (AOC-S), Advice of Charge: charging information during the call (AOC-D), Advice of Charge: charging information at the end of the call (AOC-E), Completion of Calls to Busy Subscriber (CCBS), Completion of Calls on No Reply (CCNR), Call Deflection (CD), Call Forwarding Busy (CFB), Call Forwarding No Reply (CFNR), Call Forwarding Unconditional (CFU), Calling Line Identification Presentation (CLIP), Calling Line Identification Restriction (CLIR), Connected Line Identification Presentation (COLP), Connected Line Identification Restriction (COLR), Conference call, add-on (CONF), Explicit Call Transfer (ECT), Closed User Group (CUG), Call Waiting (CW), Direct Dialling In (DDI), Freephone (FPH), Call Hold (HOLD), Malicious Call Identification (MCID), Multiple Subscriber Number (MSN), Message Waiting Indication (MWI), Outgoing Call Barring-Fixed (OCB-F), Outgoing Call Barring-User Controlled (OCB-UC), Selective Call Forwarding (SCF), Subaddressing (SUB), Terminal Portability (TP), User-to-User Signalling (UUS) and Three-Party (3PTY) supplementary services are covered in 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, subsequent revisions do apply.
- 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] ETSI ETS 300 056 (1991) including amendment A1 (1996): "Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service; Service description".
- [2] ETSI ETS 300 089 (1992): "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Service description".
- [3] ETSI ETS 300 164 (1992): "Integrated Services Digital Network (ISDN); Meet-Me Conference (MMC) supplementary service; Service description".
- [4] ETSI ETS 300 183 (1992) including amendment A1 (1998): "Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service; Service description".
- [5] ETSI ETS 300 199 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding Busy (CFB) supplementary service; Service description".
- [6] ETSI ETS 300 200 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding Unconditional (CFU) supplementary service; Service description".
- [7] ETSI ETS 300 201 (1994) including amendment A1 (1996): "Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description".
- [8] ETSI ETS 300 208 (1996): "Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service; Service description".
- [9] ETSI ETS 300 357 (1995): "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Service description".
- [10] ETSI ETS 300 367 (1995): "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Service description".

- [11] ETSI EN 301 134 (V1.1.1): "Integrated Services Digital Network (ISDN); Completion of Calls on No Reply (CCNR) supplementary service; Service description".
- [12] ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".
- [13] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [14] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [15] ITU-T Recommendation I.221 (1993): "Common specific characteristics of services".

3 Definitions and abbreviations

3.1 Definitions

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

active call: call on which the connection has already been established

barring program: selection of type of calls to which the calls can be barred

busy: see ITU-T Recommendation I.221 [15], clause 3

call forwarding: general term applied to any functionality whereby a call is redirected automatically by the service provider to another user. The forms of forwarding are: unconditional, whereby all calls are redirected; busy, whereby calls encountering busy are redirected; and, no reply, whereby calls which are not answered within a time period are redirected

called party number: ITU-T Recommendation E.164 [12] number provided by the calling user, when originating the call in order to identify the called user in the call

calling party number: number provided by the public network which identifies either the calling party or at least the access into the public network of the call from the calling user

called user: user who received an incoming call (originated by the calling user)

calling user: user who originates, or originated, the call

CCBS busy: any one of the following conditions will cause user A to be considered as CCBS busy:

- maximum number of calls reached at user A;
- no B-channels available at user A;
- CCBS recall pending on user A.

CCBS call: call generated by the network from user A to destination B resulting from user A's acceptance of a CCBS recall

CCBS recall: indication informing user A that the network is ready to initiate a CCBS call to destination B and that the network is awaiting a response to this indication

CCBS recall timer: maximum time the network will wait for user A to respond to a CCBS recall. The value of this timer shall be a minimum of 10 seconds and a maximum of 20 seconds

CCBS request: instance of an activation of the CCBS supplementary service which is held in a queue pending the correct conditions for the CCBS supplementary service to be completed

CCNR busy: any one of the following conditions will cause user A to be considered as CCNR busy:

- maximum number of calls reached at user A;
- no B-channels available at user A;
- CCNR recall pending on user A.

CCNR call: call generated by the network from user A to destination B resulting from user A's acceptance of a CCNR recall

CCNR recall: indication informing user A that the network is ready to initiate a CCNR call to destination B and that the network is awaiting a response to this indication

CCNR recall timer: maximum time the network will wait for user A to respond to a CCNR recall. The value of this timer shall be a minimum of 10 seconds and a maximum of 20 seconds

CCNR request: instance of an activation of the CCNR supplementary service which is held in a queue pending the correct conditions for the CCNR supplementary service to be completed

compatible terminal: terminal which can support the bearer service or teleservice requested for the original call to destination B and which can accept calls to the ISDN number and subaddress identifying the called user in the original call to destination B

conferee: any user involved in the conference, other than the conference controller

conference: call involving a number of users who can communicate simultaneously

conference controller: (served) user who invokes the CONF supplementary service and controls the addition and removal of conferees

controlling user: user that activates and deactivates the MWI supplementary service

NOTE: The controlling user is likely to be a mail box.

deflected-to user: user to whom the call is redirected as a result of the CD supplementary service

deflecting user: user for whom the call is subjected to call deflection

destination B: entity addressed in the original call

destination B idle guard timer: time the network will wait after destination B has become not busy before informing user A. The value of this timer shall be a maximum of 15 seconds

diverted-to user: user to whom a call is redirected as a result of diversion

diverting user: user for whom the call is subjected to diversion

diversion: general term which includes all forms of forwarding, and includes deflection whereby calls are redirected by the user instead of being answered

explicit request: UUS supplementary service is considered as explicitly requested when a user requests the activation of the UUS supplementary service

forwarded-to user: user to whom the call is redirected as a result of forwarding

freephone call: call made to the freephone number

freephone number: set of digits assigned by the service provider to a served user upon subscription to the FPH supplementary service. The freephone number forms the subscriber number part of the ISDN number, and in conjunction with a service access code, the freephone number forms the national part of an ISDN number (see ITU-T Recommendation E.164 [12])

held call: call on which the call hold supplementary service is currently in operation

idle state: in this state, the user invokes the CONF supplementary service without an associated call

implicit request: UUS supplementary service is considered as implicitly requested when no explicit request for the UUS supplementary service is made and UUI is sent by the user when originating a call

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [13], subclause 2.3, definition 308

ISDN number: number conforming to the numbering plan and structure specified in ITU-T Recommendation E.164 [12]

mail box: system, inside or outside the public network infrastructure, capable to handle mail

multiple subscriber number: number used to identify one or more terminals connected to an access. This number comprises either the whole ISDN number or part of the ISDN number - i.e. the least significant digit(s)

Network Determined User Busy (NDUB): see ITU-T Recommendation I.221 [15], subclause 3.1.4

network operator: entity which provides the network operating elements and resources for the execution of a supplementary service

No Impact (NI): neither supplementary service shall affect the operation of the other supplementary service

Not Applicable (NA): there is no interaction between the supplementary service and itself

override category: allows a special category of users (e.g. police) to override the CLIR supplementary service in order to receive the calling line identity. This is a national matter, the operation of which is beyond the scope of this standard

permanent mode: in this mode, the CLIR or COLR supplementary service is invoked automatically by the network on all calls

private communication: communication between the conference controller and another user who may be a past/potential conferee. This communication is entirely separate from the conference

receiving user: user that receives the message waiting indication

remote party: user involved in a call, other than the served user

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

served user: user to whom a supplementary service has been provided

service access code: digits assigned to the FPH supplementary service, which forms the national destination code part of an ISDN number. In conjunction with a freephone number, the service access code forms the national part of an ISDN number

service provider: entity which offers a supplementary service subscription. The network operator may be the service provider

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

subaddress: see ITU-T Recommendation E.164 [12], subclause 11.2

supplementary service: see ITU-T Recommendation I.210 [14], subclause 2.4

temporary mode: in this mode, the CLIR or COLR supplementary service is invoked on a per call basis

user A: in the diversion supplementary services the calling user in a call which is subject to diversion. In the ECT supplementary service the user to whom the ECT supplementary service is provided

user B: in the diversion supplementary services the served user when a call (from user A) is subject to a diversion supplementary service

NOTE: In the context of multiple diversions, a suffix is used, e.g. 1, 2, ... n, n + 1, ... m, to denote the successive diverting users. For example, user B3 is also the diverted-to user with respect to the diversion applied at user B2.

In the ECT supplementary service the other user in one of user A's calls. By convention, in the present document, it is considered that the connection has been established on this call.

user C: in the diversion supplementary services the forwarded-to user in a call which is subject to a diversion supplementary service. In the case of a call which is subject to multiple diversions, user C is the forwarded-to user with respect to the final call forwarding. In the ECT supplementary service the other user in another of user A's calls

User Determined User Busy (UDUB): see ITU-T Recommendation I.221 [15], subclause 3.1.4

User-to-User Information (UII): information transferred by using the UUS supplementary service

"UUS not required" request: request where originating a call shall continue even if the request for the UUS supplementary service cannot be accepted

"UUS required" request: request where originating a call shall be rejected if the request for the UUS supplementary service cannot be accepted

3.2 Abbreviations

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

AOC-D	Advice Of Charge: charging information during the call
AOC-E	Advice Of Charge: charging information at the end of the call
AOC-S	Advice Of Charge: charging information at call set-up time
CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CONF	Conference call, add-on
CUG	Closed User Group
CW	Call Waiting
DDI	Direct Dialling In
ECT	Explicit Call Transfer
FPH	Freephone
HOLD	Call Hold
ISDN	Integrated Services Digital Network
MCID	Malicious Call Identification
MMC	Meet-Me Conference
MSN	Multiple Subscriber Number
MWI	Message Waiting Indication
NA	Not Applicable
NDUB	Network Determined User Busy
NI	No Impact
OCB-F	Outgoing Call Barring-Fixed
OCB-UC	Outgoing Call Barring-User Controlled
SCF	Selective Call Forwarding
SUB	Subaddressing
TP	Terminal Portability
UDUB	User Determined User Busy
UII	User-to-User Information
UUS	User-to-User Signalling
3PTY	Three-Party

4.1 The AOC-D and AOC-E supplementary services

If both the AOC-D supplementary service and the AOC-E supplementary service are invoked, then when the call is terminated, only the information related to the AOC-E supplementary service shall be given.

4.2 The AOC-S and CCBS supplementary services

Charging information can be given for the original call, and for the resulting CCBS call.

4.3 The AOC-D and CCBS supplementary services

Charging information can be given for the original call, and for the resulting CCBS call.

4.4 The AOC-E and CCBS supplementary services

Charging information can be given for the original call, and for the resulting CCBS call.

4.5 The CCBS and CCBS supplementary services

A user can be both a "user A" and a "destination B" simultaneously, i.e. that user can have activated the CCBS supplementary service and have CCBS requests outstanding whilst at the same time that user can be the destination of CCBS requests from other users.

If a user receives a CCBS recall while that user's destination B CCBS queue is being processed, then the CCBS recall shall take priority over the handling of the destination B CCBS queue. The handling of CCBS requests activated by this user shall have priority over the handling of CCBS requests activated by other users on this user.

If one of the user's CCBS requests matures as a result, then the user shall be given a CCBS recall or notification as in clause 6. The served user's destination B idle guard timer, if running, shall be cancelled.

4.6 The AOC-S and CCNR supplementary services

Charging information can be given for the original call, and for the resulting CCNR call.

4.7 The AOC-D and CCNR supplementary services

Charging information can be given for the original call, and for the resulting CCNR call.

4.8 The AOC-E and CCNR supplementary services

Charging information can be given for the original call, and for the resulting CCNR call.

4.9 The CCBS and CCNR supplementary services

A user can be both a "user A" and a "destination B" simultaneously, i.e. that user can have activated the CCNR supplementary service or the CCBS supplementary service and have CCNR requests or CCBS requests outstanding whilst at the same time that user can be the destination of CCNR requests or CCBS requests from other users.

CCBS requests and CCNR requests against the same destination B shall be queued in the same queue.

If a user receives a CCNR recall or CCBS recall (i.e. as user A) while that user's destination B queue is being processed, then the CCNR recall or CCBS recall shall take priority over the handling of that user's destination B queue. The handling of CCNR requests and CCBS requests activated by this user (i.e. as user A) shall have priority over the handling of CCNR requests and CCBS requests activated by other users on this user (i.e. as destination B).

If one of the user's CCNR requests can be processed, then this user (see first paragraph) shall be given a CCNR recall or notification as in clause 5 of EN 301 134 [11]. The served user's destination B idle guard timer, if running, shall be cancelled. The processing of CCBS requests shall be according to the requirements of the CCBS supplementary service [9].

If a network supports the option to retain CCNR requests (see subclause 5.3.3.1 b) of EN 301 134 [11]), then CCBS requests shall be retained when a CCBS call encounters a busy destination.

If the network checks for identical requests in user A's queue, the check shall include both CCNR requests and CCBS requests.

If user A has a CCBS recall pending on arrival of a CCNR recall, this should be treated in the same way as in the case where user A is CCNR busy (see subclause 5.2.3 and subclause 5.3.3.2 b) of EN 301 134 [11]).

4.10 The CCNR and CCNR supplementary services

A user can be both a "user A" and a "destination B" simultaneously, i.e. that user can have activated the CCNR supplementary service and have CCNR requests outstanding whilst at the same time that user can be the destination of CCNR requests from other users.

If a user receives a CCNR recall while that user's destination B CCNR queue is being processed, then the CCNR recall shall take priority over the handling of the destination B's CCNR queue. The handling of CCNR requests activated by this user shall have priority over the handling of CCNR requests activated by other users on this user.

If one of the user's CCNR requests can be processed as a result, then this user (see first paragraph) shall be given a CCNR recall or notification as in clause 5 of EN 301 134 [11]. The served user's destination B idle guard timer, if running, shall be cancelled.

4.11 The AOC-S and CD supplementary services

Original calling user:

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

Deflecting user:

Not applicable.

4.12 The AOC-D and CD supplementary services

Original calling user:

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

Deflecting user:

Not applicable.

4.13 The AOC-E and CD supplementary services

Original calling user:

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

Deflecting user:

When a call is deflected and the deflecting user is charged for the deflected part of the call, then as a network option, the charging information can be transferred to the deflecting user when the call is terminated, provided that the served user has subscribed to the AOC-E supplementary service with the value of the subscription option set to "for all calls automatically".

4.14 The CCBS and CD supplementary services

CCBS recalls shall never be diverted. They shall be given to user A at user A's original location.

NOTE: A recall resulting from the CCBS supplementary service will not be deflected.

Calling user:

If a call to the called user (served user) is deflected to another user by the CD supplementary service and this other user is busy, then a request by the calling user to activate the CCBS supplementary service shall be applied to the called user.

Called user:

If the called user (served user) requests invocation of the CD supplementary service on a call resulting from the CCBS supplementary service, then the following actions shall result:

- if the request was made prior to the network receiving an indication that the user is being informed of the call, then the request shall be rejected; or
- if the request was made after the network has received an indication that the user is being informed of the call, then the request shall be accepted. The call shall be deflected as a normal call.

4.15 The CCNR and CD supplementary services

CCNR recalls shall not be diverted. They shall be given to user A at user A's original location.

Assume, user A calls destination B and destination B activates the CD supplementary service or has activated the CD supplementary service to user C. Using these assumptions the following situations may occur:

Calling user (user A):

If user A calls destination B and the call is deflected to user C and user C does not answer the call (No Reply), then a request by user A to activate the CCNR supplementary service shall be applied to destination B.

Called user (destination B):

If the served user requests invocation of the CD supplementary service on a CCNR call, then the following actions shall result:

- if the request was made before the network receives an indication that the user is being informed of the call, then the request from destination B to deflect a CCNR call shall be rejected; or
- if the request was made after the network has received an indication that the user is being informed of the call, then the request shall be accepted. The call shall be deflected as a normal call.

4.16 The AOC-S and CFB supplementary services

Original calling user:

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

Forwarding user:

Not applicable.

4.17 The AOC-D and CFB supplementary services

Original calling user:

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

Forwarding user:

Not applicable.

4.18 The AOC-E and CFB supplementary services

Original calling user:

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

Forwarding user:

When a call is forwarded and the forwarding user is charged for the forwarded part of the call, then as a network option, the charging information can be transferred to the forwarding user when the call is terminated provided that the served user has subscribed to the AOC-E supplementary service with the value of the subscription option set to "for all calls automatically".

4.19 The CCBS and CFB supplementary services

CCBS recalls shall never be diverted. They shall be given to user A at user A's original location.

Assume user A calls user B, and user B activates the CFB supplementary service or has activated the CFB supplementary service to user C.

NOTE: A recall resulting from the CCBS supplementary service will not be forwarded.

The CFB supplementary service was activated by user B before user A requests the CCBS supplementary service on user B:

If user B has activated the CFB supplementary service and is busy, and the forwarded-to user C is also busy, then a request by user A to activate the CCBS supplementary service shall be applied to user B;

The CFB supplementary service is activated by user B after user A has activated the CCBS supplementary service on user B:

If user B activates the CFB supplementary service after user A has activated the CCBS supplementary service on user B, the call resulting from the CCBS supplementary service shall still be applied to user B;

Arrival of the CCBS call after the CFB supplementary service has been activated:

If user B has activated the CFB supplementary service and is busy upon the arrival of a call resulting from the CCBS supplementary service, then according to a network option, the call shall be treated as follows:

- user B shall be considered as being busy and the procedures of the CCBS supplementary service shall apply; or
- the call shall be forwarded as a normal call.

4.20 The CCNR and CFB supplementary services

CCNR recalls shall not be diverted. They shall be given to user A at user A's original location.

Assume user A calls user B, and user B activates the CFB supplementary service or has activated the CFB supplementary service to user C.

The CFB supplementary service was activated by user B before user A requests the CCNR supplementary service on user B:

If user B has activated the CFB supplementary service and is busy, and the forwarded-to user C does not answer the call (No Reply), then a request by user A to activate the CCNR supplementary service shall be rejected. User A shall be informed that the CCNR request has been rejected with "short term denial" as the reason;

The CFB supplementary service is activated by user B after user A has activated the CCNR supplementary service on user B:

If user B activates the CFB supplementary service after user A has activated the CCNR supplementary service on user B, the CFB supplementary service shall not be invoked for the CCNR call.

4.21 The CD and CFB supplementary services

If the user is not network determined user busy, then the CD supplementary service or the CFB supplementary service can be invoked, depending on the response from the served user.

4.22 The AOC-S and CFNR supplementary services

Original calling user:

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

Forwarding user:

Not applicable.

4.23 The AOC-D and CFNR supplementary services

Original calling user:

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

Forwarding user:

Not applicable.

4.24 The AOC-E and CFNR supplementary services

Original calling user:

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

Forwarding user:

When a call is forwarded and the forwarding user is charged for the forwarded part of the call, then as a network option, the charging information can be transferred to the forwarding user when the call is terminated provided that the served user has subscribed to the AOC-E supplementary service with the value of the subscription option set to "for all calls automatically".

4.25 The CCBS and CFNR supplementary services

CCBS recalls shall never be diverted. They shall be given to user A at user A's original location.

Assume that user A calls user B and that user B activates the CFNR supplementary service or has activated the CFNR supplementary service to user C.

NOTE 1: A recall resulting from the CCBS supplementary service will not be forwarded.

The CFNR supplementary service was activated by user B before user A requests the CCBS supplementary service on user B:

If user A calls user B and the call is forwarded on no reply to user C and user C is then busy and the call is not retained at user B, then any request by user A for the CCBS supplementary service shall be rejected with user A being given a short term denial as reason.

NOTE 2: If the call is retained at user B then the CCBS supplementary service does not apply.

The CFNR supplementary service is activated by user B after user A has activated the CCBS supplementary service on user B:

If user B activates the CFNR supplementary service after user A has activated the CCBS supplementary service on user B, then the call resulting from the CCBS supplementary service shall be given to user B. After the no reply timer has expired at user B, the call shall be forwarded as a normal call.

4.26 The CCNR and CFNR supplementary services

CCNR recalls shall not be diverted. They shall be given to user A at user A's original location.

Assume that user A calls user B and that user B activates the CFNR supplementary service or has activated the CFNR supplementary service to user C.

The CFNR supplementary service was activated by user B before user A requests the CCNR supplementary service on user B:

If user A calls user B and the call is forwarded on no reply to user C and user C does not answer the call (No Reply), then a request by user A to activate the CCNR supplementary service shall apply to the originally called destination B.

The CFNR supplementary service is activated by user B after user A has activated the CCNR supplementary service on user B:

If user B activates the CFNR supplementary service after user A has activated the CCNR supplementary service on user B, then the CCNR call shall be given to user B. After the no reply timer has expired at user B, the call shall be forwarded as a normal call.

Arrival of the CCNR call after the CFNR supplementary service has been activated:

If user B has activated the CFNR supplementary service and does not answer the call (No Reply) upon the arrival of the CCNR call, then according to a network option, the call shall be treated as follows:

- the procedures of the CCNR supplementary service shall apply; or
- the call shall be forwarded as a normal call.

4.27 The CD and CFNR supplementary services

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

NOTE: If the network indicates the arrival of an incoming call to the user, then the CD supplementary service, or the CFNR supplementary service can be invoked, depending on the response, or lack of response, from the served user.

4.28 The AOC-S and CFU supplementary services

Original calling user:

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

Forwarding user:

Not applicable.

4.29 The AOC-D and CFU supplementary services

Original calling user:

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

Forwarding user:

Not applicable.

4.30 The AOC-E and CFU supplementary services

Original calling user:

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

Forwarding user:

When a call is forwarded and the forwarding user is charged for the forwarded part of the call, then as a network option, the charging information can be transferred to the forwarding user when the call is terminated provided that the served user has subscribed to the AOC-E supplementary service with the value of the subscription option set to "for all calls automatically".

4.31 The CCBS and CFU supplementary services

CCBS recalls shall never be diverted. They shall be given to user A at user A's original location.

Assume user A calls user B and user B activates the CFU supplementary service (or has activated the CFU supplementary service) to user C:

NOTE: A recall resulting from the CCBS supplementary service will not be forwarded.

The CFU supplementary service was activated by user B before user A requests the CCBS supplementary service on user B:

If the call to user B is forwarded to user C by the CFU supplementary service and user C is busy, then a request by user A to activate the CCBS supplementary service shall be rejected. User A shall be informed that the request has been rejected with "short term denial" as the reason;

The CFU supplementary service is activated by user B after user A has activated the CCBS supplementary service on user B:

If user B activates the CFU supplementary service after user A has activated the CCBS supplementary service, then outstanding queued requests shall remain in the user B queue until expiry of the duration timer for the CCBS supplementary service. If user B deactivates the CFU supplementary service before the expiry of the duration timer for the CCBS supplementary service and subsequently becomes not busy, the outstanding queued requests shall again be processed.

If user B activates the CFU supplementary service between the expiry of the user B idle guard timer and the arrival of the call resulting from the CCBS supplementary service, the call resulting from the CCBS supplementary service shall be forwarded as a normal call.

4.32 The CCNR and CFU supplementary services

CCNR recalls shall not be diverted. They shall be given to user A at user A's original location.

Assume user A calls user B and user B activates the CFU supplementary service (or has activated the CFU supplementary service) to user C:

The CFU supplementary service was activated by user B before user A requests the CCNR supplementary service on user B:

If the call to user B is forwarded to user C by the CFU supplementary service and user C does not answer the call (No Reply), then a request by user A to activate the CCNR supplementary service shall be rejected. User A shall be informed that the request has been rejected with "short term denial" as the reason;

The CFU supplementary service is activated by user B after user A has activated the CCNR supplementary service on user B:

If user B activates the CFU supplementary service after user A has activated the CCNR supplementary service, then outstanding queued requests shall remain in the user B CCNR queue until expiry of the duration timer for the CCNR supplementary service. If user B deactivates the CFU supplementary service before the expiry of the duration timer for the CCNR supplementary service and subsequently becomes not busy, the outstanding queued requests shall be processed again.

If user B activates the CFU supplementary service between the expiry of the user B idle guard timer and the arrival of the CCNR call, the CCNR call shall be forwarded as a normal call.

4.33 The CD and CFU supplementary services

Invocation of the CFU supplementary service shall take precedence over the CD supplementary service.

4.34 The CFB and CFU supplementary services

Invocation of the CFU supplementary service shall take precedence over the CFB supplementary service.

4.35 The CFNR and CFU supplementary services

Invocation of the CFU supplementary service shall take precedence over the CFNR supplementary service.

4.36 The CCNR and CLIP supplementary services

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

NOTE: If user A accepts a CCNR recall, the resulting CCNR call is a basic call and destination B can receive calling line identification presentation.

4.37 The CD and CLIP supplementary services

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.

4.38 The CFB and CLIP supplementary services

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.

4.39 The CFNR and CLIP supplementary services

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.

4.40 The CFU and CLIP supplementary services

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.

4.41 The CCNR and CLIR supplementary services

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

NOTE: If user A has invoked calling line identification restriction and user A accepts a CCNR recall, then the resulting CCNR call is a basic call and destination B will not receive the calling line identification of user A.

4.42 The CD and CLIR supplementary services

When the CLIR supplementary service has been invoked, the calling party's ISDN number shall not be presented to the deflected-to user unless the deflected-to user has an override category.

4.43 The CFB and CLIR supplementary services

When the CLIR supplementary service has been invoked, the calling party's ISDN number shall not be presented to the forwarded-to user unless the forwarded-to user has an override category.

4.44 The CFNR and CLIR supplementary services

When the CLIR supplementary service has been invoked, the calling party's ISDN number shall not be presented to the forwarded-to user unless the forwarded-to user has an override category.

4.45 The CFU and CLIR supplementary services

When the CLIR supplementary service has been invoked, the calling party's ISDN number shall not be presented to the forwarded-to user unless the forwarded-to user has an override category.

4.46 The CLIP and CLIR supplementary services

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 standard.

4.47 The CD and COLP supplementary services

If the served (deflecting) user selects the option that the calling user is not notified of call deflection, then the calling user shall receive no deflecting notification. In addition, the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

If the served (deflecting) user selects the option that the calling user is notified, but without the deflected-to number, then the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

4.48 The CFB and COLP supplementary services

If the served (forwarding) user selects the option that the calling user is not notified of call forwarding, then the calling user shall receive no forwarding notification. In addition, the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

If the served (forwarding) user selects the option that the calling user is notified, but without the forwarded-to number, then the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

4.49 The CFNR and COLP supplementary services

If the served (forwarding) user selects the option that the calling user is not notified of call forwarding, then the calling user shall receive no forwarding notification. In addition, the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

If the served (forwarding) user selects the option that the calling user is notified, but without the forwarded-to number, then the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

4.50 The CFU and COLP supplementary services

If the served (forwarding) user selects the option that the calling user is not notified of call forwarding, then the calling user shall receive no forwarding notification. In addition, the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

If the served (forwarding) user selects the option that the calling user is notified, but without the forwarded-to number, then the calling user shall not receive the connected user's identity when the call is answered, unless the calling user has override capability.

4.51 The CD and COLR supplementary services

If a deflected-to user subscribes to the COLR supplementary service "permanent mode", then the deflected-to user's number shall not be provided with the notification that the call has been diverted.

If a deflected-to user subscribes to the COLR supplementary service "temporary mode", then the deflected-to user's number shall not be provided until negotiation with the user has taken place and a positive indication from the user has been received (i.e. the default value will not be used). Note that the deflected-to user's number can still be released on answer, after confirmation, or using the default.

In each of the above situations, a calling user that subscribes to the COLP supplementary service and who has override capability will not receive the deflected-to user's number as part of the diverting notification information, but can use the override capability in order to receive the connected line identity when the call is answered.

4.52 The CFB and COLR supplementary services

If a forwarded-to user subscribes to the COLR supplementary service "permanent mode", then the forwarded-to user's number shall not be provided with the notification that the call has been forwarded.

If a forwarded-to user subscribes to the COLR supplementary service "temporary mode", then the forwarded-to user's number shall not be provided until negotiation with the user has taken place and a positive indication from the user has been received (i.e. the default value will not be used). Note that the forwarded-to user's number can still be released on answer, after confirmation, or using the default.

In each of the above situations, a calling user that subscribes to the COLP supplementary service and who has override capability will not receive the forwarded-to user's number as part of the diverting notification information, but can use the override capability in order to receive the connected line identity when the call is answered.

4.53 The CFNR and COLR supplementary services

If a forwarded-to user subscribes to the COLR supplementary service "permanent mode", then the forwarded-to user's number shall not be provided with the notification that the call has been forwarded.

If a forwarded-to user subscribes to the COLR supplementary service "temporary mode", then the forwarded-to user's number shall not be provided until negotiation with the user has taken place and a positive indication from the user has been received (i.e. the default value will not be used). Note that the forwarded-to user's number can still be released on answer, after confirmation, or using the default.

In each of the above situations, a calling user that subscribes to the COLP supplementary service and who has override capability will not receive the forwarded-to user's number as part of the diverting notification information, but can use the override capability in order to receive the connected line identity when the call is answered.

4.54 The CFU and COLR supplementary services

If a forwarded-to user subscribes to the COLR supplementary service "permanent mode", then the forwarded-to user's number shall not be provided with the notification that the call has been forwarded.

If a forwarded-to user subscribes to the COLR supplementary service "temporary mode", then the forwarded-to user's number shall not be provided until negotiation with the user has taken place and a positive indication from the user has been received (i.e. the default value will not be used). Note that the forwarded-to user's number can still be released on answer, after confirmation, or using the default.

In each of the above situations, a calling user that subscribes to the COLP supplementary service and who has override capability will not receive the forwarded-to user's number as part of the diverting notification information, but can use the override capability in order to receive the connected line identity when the call is answered.

4.55 The COLP and COLR supplementary services

The COLR supplementary service shall normally take precedence over the COLP supplementary service.

The COLP supplementary service can take precedence over the COLR supplementary service when the calling user has an override category. This is a national matter, the operation of which is outside the scope of this standard.

4.56 The AOC-S and CONF supplementary services

Conference controller:

NOTE 1: Some networks may not support the AOC-S supplementary service in conjunction with the CONF supplementary service, or may only give part of the information, e.g. due to off-line processing of the charges associated with the CONF supplementary service. In the former case an indication that the AOC-S supplementary service is not available should be given on invocation of the CONF supplementary service if the AOC-S supplementary service had been invoked.

Invocation of the CONF supplementary service from the idle state:

The conference controller can invoke the AOC-S supplementary service at the same time as the CONF supplementary service is invoked. Updated charging rate information for the whole conference shall be given to the conference controller if the charging rate for the conference is changed, i.e. each time the rate changes, the new charge rate shall be given by means of a single indication which shall apply to the whole conference.

Invocation of the CONF supplementary service from an active call:

If the AOC-S supplementary service has been invoked for the initial call, then it shall be invoked automatically for the whole conference. If the AOC-S supplementary service has not been invoked for the initial call, then the conference controller can invoke the AOC-S supplementary service at the same time as the CONF supplementary service is invoked.

Addition of a call to a conference:

For calls between the conference controller and potential conferees, which are outside the conference, the normal procedures for the AOC-S supplementary service shall apply. When a call for which the AOC-S supplementary service has been invoked, is added to the conference, then further charging rate information shall not be given for this call.

NOTE 2: Further charging rate information for communication with the new conferee is considered to be part of the charging rate information for the conference.

Creating a private communication with one of the parties:

In this case the private communication shall be considered as a new call between the conference controller and the individual party. If the AOC-S supplementary service has been invoked for the conference, it shall be invoked automatically for the new call when the private communication is established.

Other operation on the conference:

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

Conferees:

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

4.57 The AOC-D and CONF supplementary services

Conference controller:

NOTE 1: Some networks may not support the AOC-D supplementary service in conjunction with the CONF supplementary service, or may only give part of the information, e.g. due to off-line processing of the charges associated with the CONF supplementary service. In the former case an indication that the AOC-D supplementary service is not available should be given on invocation of the CONF supplementary service if the AOC-D supplementary service had been invoked.

Invocation of the CONF supplementary service from the idle state:

If the AOC-D supplementary service is automatically invoked on all calls, or if the conference controller invokes the AOC-D supplementary service at the same time as the CONF supplementary service is invoked, then cumulative charging information shall be given for the whole conference (i.e. from this time, the subtotal charge shall relate to the whole conference) until the entire conference is terminated.

Invocation of the CONF supplementary service from an active call:

If the AOC-D supplementary service has been invoked for the initial call, cumulative charging shall be given for this call until the CONF supplementary service is invoked. After the CONF supplementary service has been invoked, cumulative charging information shall be given for the whole conference, including the charges for the initial call until invocation of the CONF supplementary service.

If the AOC-D supplementary service has not been invoked for the initial call, then the conference controller can invoke the AOC-D supplementary service at the same time as the CONF supplementary service is invoked. If this occurs, then cumulative charging information shall be given for the whole conference.

Addition of a call to a conference:

For calls between the conference controller and potential conferees, which are outside the conference, the normal procedures for the AOC-D supplementary service shall apply. When a call, for which the AOC-D supplementary service has been invoked, is added to the conference, then charging information shall be given as if the call was terminated at the moment it was added to the conference.

NOTE 2: Further charges resulting from the communication with the new conferee are considered to be part of the charging for the conference.

Creating a private communication with one of the parties:

In this case the private communication shall be considered as a new call between the conference controller and the individual party. If the AOC-D supplementary service has been invoked for the conference, it shall be invoked automatically for the new call when the private communication is established.

Cumulative charging information shall be given as if the conference controller had set up a new call, which was accepted by the other party at the moment the private communication is established.

Terminating the conference:

When the conference is terminated and the AOC-D supplementary service has been invoked for the conference, then the overall charges for the conference shall be sent to the conference controller. If the CONF supplementary service was invoked from an active call and the AOC-D supplementary service has been invoked for that call, then the charging information shall include charges for the initial call.

Other operations on the conference:

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

Conferees:

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

4.58 The AOC-E and CONF supplementary services

Conference controller:

NOTE 1: Some networks may not support the AOC-E supplementary service in conjunction with the CONF supplementary service, or may only give part of the information, e.g. due to off-line processing of the charges associated with the CONF supplementary service. In the former case an indication that the AOC-E supplementary service is not available should be given on invocation of the CONF supplementary service if the AOC-E supplementary service had been invoked.

Invocation of the CONF supplementary service from the idle state:

If the AOC-E supplementary service is automatically invoked on all calls, or if the conference controller invokes the AOC-E supplementary service at the same time as the CONF supplementary service is invoked, then charging information shall be given for the whole conference when the conference is terminated.

Invocation of the CONF supplementary service from an active call:

If the AOC-E supplementary service has been invoked for the initial call, then it shall be invoked automatically for the conference. If the AOC-E supplementary service has not been invoked for the initial call, then the conference controller can invoke the AOC-E supplementary service at the same time as the CONF supplementary service is invoked.

Addition of a call to a conference:

For calls between the conference controller and potential conferees, which are outside the conference, the normal procedures for the AOC-E supplementary service shall apply. When a call, for which the AOC-E supplementary service has been invoked, is added to the conference, then charging information shall be given as if the call was terminated at the moment it was added to the conference.

NOTE 2: Further charges resulting from the communication with the new conferee are considered to be part of the charging for the conference.

Creating a private communication with one of the parties:

In this case the private communication shall be considered as a new call between the conference controller and the individual party. If the AOC-E supplementary service has been invoked for the conference, it shall be invoked automatically for the new call when the private communication is established.

Terminating the conference:

When the conference is terminated and the AOC-E supplementary service has been invoked for the conference, then the overall charges for the conference shall be sent to the conference controller. If the CONF supplementary service was invoked from an active call and the AOC-E supplementary service has been invoked for that call, then the charging information shall include charges for the initial call.

Other operations on the conference:

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

Conferees:

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

4.59 The CCBS and CONF supplementary services

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

NOTE: For the determination of user busy, the conference appears the same as a two party call.

4.60 The COLP and CONF supplementary services

Conference controller:

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

Conferees:

Conferees shall not receive the identity of a party when that party is added to the conference.

4.61 The CONF and CONF supplementary services

A user can be involved as the conference controller separately in two conferences. However, the user cannot add either of these conferences to the other conference.

As a network option, a user can add their connection to a conference in which that user is a conferee to another conference which is controlled by that user.

4.62 The CCNR and CUG supplementary services

Closed user group information from the original call shall also be included in the CCNR call.

NOTE: Closed user group information is not included in the check for a compatible terminal. If a terminal performs an internal closed user group check and uses the closed user group information provided on a call to determine whether, or not, to inform the user of the incoming call, then such a terminal may react positively to the check for a compatible terminal due to the absence of closed user group information, but due to the internal closed user group check such a terminal may then not inform the user of the arrival of the resulting CCNR call.

4.63 The CD and CUG supplementary services

NOTE: Closed user group restrictions were checked and met for the call between the calling user and the deflecting user when call was offered to the deflecting user.

The parameters of the closed user group applied by the network on the original call shall be used for the deflected part of the call and by this means closed user group restrictions shall be checked and met for the call between the calling user and the deflected-to user.

The outgoing call barring attribute of the deflecting user shall not be used to determine if the call can be deflected.

4.64 The CFB and CUG supplementary services

Closed user group restrictions shall be checked and met for the call between the calling user and the forwarding user. The parameters of a closed user group applied by the network on the original call shall be used for the forwarded part of the call, and by this means closed user group restrictions shall be checked and met for the call between the calling user and the forwarded-to user.

The outgoing call barring attribute of the forwarding user shall not be used to determine if the call can be forwarded.

4.65 The CFNR and CUG supplementary services

NOTE: Closed user group restrictions were checked and met for the call between the calling user and the forwarding user when call was offered to the forwarding user.

The parameters of the closed user group applied by the network on the original call shall be used for the forwarded part of the call and by this means closed user group restrictions shall be checked and met for the call between the calling user and the forwarded-to user.

The outgoing call barring attribute of the forwarding user shall not be used to determine if the call can be forwarded.

4.66 The CFU and CUG supplementary services

Closed user group restrictions shall be checked and met for the call between the calling user and the forwarding user. The parameters of a closed user group applied by the network on the original call shall be used for the forwarded part of the call and by this means closed user group restrictions shall be checked and met for the call between the calling user and the forwarded-to user.

The outgoing call barring attribute of the forwarding user shall not be used to determine if the call can be forwarded.

4.67 The CONF and CUG supplementary services

When the call involving the first conferee is added to the conference, then the conference shall assume the closed user group of that call.

In order to add a subsequent call to the conference, then the closed user group of that call shall be checked against the closed user group of the conference.

4.68 The CCBS and CW supplementary services

If a subscriber to the CCBS supplementary service places a call to a user B who has subscribed to the CW supplementary service, and user B is given the call waiting indication, then invocation of the CCBS supplementary service cannot occur.

4.69 The CCNR and CW supplementary services

CCNR requests in the destination B CCNR queue shall only be processed if there are no calls waiting.

In other situations there is no impact between the CW and the CCNR supplementary service.

4.70 The CD and CW supplementary services

When receiving the call waiting indication, user B can invoke the CD supplementary service.

In the case of call deflection after alerting, if the diverting user subscribes to the value "No" for the subscription option "Calling user receives notification that the call has been deflected" in the CD supplementary service, no notification of call waiting shall be sent to the calling user from the deflected-to user.

In case of multiple diversions, a notification of call waiting shall only be sent to the calling user if all diverting users allow notification that the call has been deflected.

A deflected call can invoke the CW supplementary service.

4.71 The CFB and CW supplementary services

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

NOTE: The following text clarifies this situation. If user B is NDUB, call forwarding busy shall take place, and the call is not offered. If user B is not NDUB, the call shall be offered, and if the UDUB condition results, then call forwarding busy shall take place.

A forwarded call can invoke the CW supplementary service.

4.72 The CFNR and CW supplementary services

If subscriber B has the CFNR supplementary service activated, then a waiting call shall still be offered as described in ETS 300 056 [1]. If the call forwarding no reply timer expires before an answer is received then the CFNR supplementary service becomes invoked and the call is forwarded and call waiting ceases.

If the forwarding user subscribes to the value "No" for the subscription option "Calling user receives notification that the call has been forwarded" in the CFNR supplementary service, no notification of call waiting shall be sent to the calling user from the forwarded-to user.

In case of multiple diversions, a notification of call waiting shall only be sent to the calling user if all diverting users allow notification that the call has been forwarded.

A forwarded call can invoke the CW supplementary service.

4.73 The CFU and CW supplementary services

If subscriber B has activated the CFU supplementary service, then the execution of the CFU supplementary service shall take precedence over the CW supplementary service. The CFU supplementary service can be activated while a call is waiting without changing the state of the waiting call.

A forwarded call can invoke the CW supplementary service.

4.74 The CLIP and DDI supplementary services

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 DDI 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.

4.75 The COLP and DDI supplementary services

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

NOTE: At the called party's user-network interface, the network may be supplied with a connected party number as a result of the DDI supplementary service applying either:

- at that interface, in which case a partial or full connected 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.

4.76 The CUG and DDI supplementary services

Closed user group membership shall not be available on a per ISDN number basis, but instead shall be on the basis of the entire range of ISDN numbers applicable at an access or group of accesses.

4.77 The AOC-S and ECT supplementary services

When user A transfers a call and has activated the AOC-S supplementary service, then the AOC-S supplementary service shall be considered as completed.

For user B and user C, no impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

4.78 The AOC-D and ECT supplementary services

When user A transfers a call and has activated the AOC-D supplementary service, the charge up to that time shall be sent as a subtotal charge for that call. The AOC-D supplementary service shall then be considered as completed.

NOTE: If user A had activated the AOC-D supplementary service, then user A will receive information separately for both of the calls.

For user B and user C, no impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

4.79 The AOC-E and ECT supplementary services

If user A is charged for the transferred part of the call and has activated the AOC-E supplementary service for that call, then either:

- a) the charging information shall be sent to user A when the transferred call is terminated; or
- b) when the calls are transferred user A shall be informed that charging information is not available. The AOC-E supplementary service shall then be considered as completed.

For user B and user C, no impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

4.80 The CD and ECT supplementary services

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

NOTE: Where a service provider supports the option to transfer a call for which the connection has been established, to a user to which the connection has not yet been established, the transferred call can be deflected if this second user invokes the CD supplementary service.

4.81 The CFNR and ECT supplementary services

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

NOTE: Where a service provider supports the option to transfer a call for which the connection has been established to a user to which the connection has not yet been established, the transferred call can be forwarded if this second user has activated the CFNR supplementary service.

4.82 The CLIR and ECT supplementary services

A calling user's restriction requirements from the original call shall be used in order to restrict the presentation of that user's ISDN number to the other user in a transferred call.

4.83 The COLR and ECT supplementary services

A connected user's restriction requirements from the original call shall be used in order to restrict the presentation of that user's ISDN number to the other user in a transferred call.

If the connection is established on the call to user C after transfer, the presentation of the ISDN number and the subaddress of user C shall be restricted according to user C's COLR supplementary service (i.e. as for the normal operation of the COLR supplementary service).

4.84 The CONF and ECT supplementary services

The conference controller cannot transfer the conference to another user.

Conferees can invoke the ECT supplementary service in order to transfer their connection to the conference to another user after that connection has been established.

4.85 The CUG and ECT supplementary services

The two calls shall use the same closed user group for the transfer to be successful.

NOTE: Closed user group restrictions between users will have been checked when the first call is established. Similarly, closed user group restrictions between users will have been checked when establishing the second call.

4.86 The ECT and ECT supplementary services

The ECT supplementary service can be invoked simultaneously by the users on a call for which the connection has been established, but this is not regarded as a normal situation. The network shall not explicitly prevent this occurring, but likewise cannot guarantee that the indications supplied to the users involved will be sensible to those users. There can be more than one indication generated due to multiple invocations of the ECT supplementary service and the arrival of such indications is dependent on the timing of their invocation by the users involved in the call. The network shall transfer these indications when they are generated.

Therefore, both users (user A and user B) in a normal call, who have each subscribed to the ECT supplementary service, can simultaneously transfer the call. That is, if user A and user B are involved in a call on which the connection has been established, user A can transfer the call to user C and user B can transfer the call to another user. Call progress signals and other indications shall be delivered to the appropriate party.

NOTE: Mechanisms which prevent the ECT supplementary service from resulting in a connection which contains no users able to terminate the call may result in rejection of simultaneous requests to invoke the ECT supplementary service by the users involved in the call.

4.87 The AOC-S and FPH supplementary services

Calling user:

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

User who receives freephone calls:

Advice of charge information shall not be sent to the user who receives the freephone call.

4.88 The AOC-D and FPH supplementary services

Calling user:

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

User who receives freephone calls:

Advice of charge information shall not be sent to the user who receives the freephone call.

4.89 The AOC-E and FPH supplementary services

Calling user:

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

User who receives freephone calls:

Advice of charge information shall not be sent to the user who receives the freephone call.

4.90 The CCBS and FPH supplementary services

A request for the CCBS supplementary service on a call to a freephone number shall be rejected. Freephone calls shall take precedence over request for the CCBS supplementary service.

4.91 The CCNR and FPH supplementary services

As a network option, a request for the CCNR supplementary service on a call to a freephone number may be accepted.

As a further network option, freephone calls may take precedence over requests for the CCNR supplementary service.

4.92 The CD and FPH supplementary services

Deflecting to a freephone number:

The number of diversions of the call should not be lost after having been subjected to the FPH supplementary service.

Deflecting of a freephone call:

According to a service provider option, freephone calls shall be forwarded in one of the following ways:

- freephone calls which are allocated to a user shall override the CD supplementary service and shall not be deflected; or
- freephone calls which are allocated to a user shall be subject to the CD supplementary service. If a freephone call is deflected, the calling user shall not receive the ISDN number of the deflected-to user.

4.93 The CFB and FPH supplementary services

Forwarding to a freephone number:

The number of diversions of the call should not be lost after having been subjected to the FPH supplementary service.

Forwarding of a freephone call:

According to a service provider option, freephone calls shall be forwarded in one of the following ways:

- freephone calls which are allocated to a user shall override the CFB supplementary service, if activated. Such calls shall be subject to other mechanisms for allocating the call to another user. The procedures for this are outside the scope of ETS 300 208 [8]; or
- freephone calls which are allocated to a user shall be subject to the CFB supplementary service if it has been activated by that user. If a freephone call is forwarded, the calling user shall not receive the ISDN number of the forwarded-to user.

4.94 The CFNR and FPH supplementary services

Forwarding to a freephone number:

The number of diversions of the call should not be lost after having been subjected to the FPH supplementary service.

Forwarding of a freephone call:

According to a service provider option, freephone calls shall be forwarded in one of the following ways:

- freephone calls which are allocated to a user shall override the CFNR supplementary service, if activated. Such calls shall be subject to other mechanisms for allocating the call to another user. The procedures for this are outside the scope of ETS 300 208 [8]; or
- freephone calls which are allocated to a user shall be subject to the CFNR supplementary service if it has been activated by that user. If a freephone call is forwarded, the calling user shall not receive the ISDN number of the forwarded-to user.

4.95 The CFU and FPH supplementary services

Forwarding to a freephone number:

The number of diversions of the call should not be lost after having been subjected to the FPH supplementary service.

Forwarding of a freephone call:

According to a service provider option, freephone calls shall be forwarded in one of the following ways:

- freephone calls which are allocated to a user shall override the CFU supplementary service, if activated. Such calls shall be subject to other mechanisms for allocating the call to another user. The procedures for this are outside the scope of ETS 300 208 [8]; or
- freephone calls which are allocated to a user shall be subject to the CFU supplementary service if it has been activated by that user. If a freephone call is forwarded, the calling user shall not receive the ISDN number of the forwarded-to user.

4.96 The CLIR and FPH supplementary services

During the call:

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

After the call:

When the CLIR supplementary service has been activated and statistical reports are to be provided, then the calling line identity shall not be contained in the statistical reports.

4.97 The COLP and FPH supplementary services

The calling user shall not be given the connected line identity of the user to whom the freephone call is presented. The calling user shall be given a number consisting of the service access code and the freephone number.

4.98 The COLR and FPH supplementary services

It should not be possible to restrict the presentation of the number consisting of the service access code and the freephone number to the calling user.

4.99 The ECT and FPH supplementary services

If a freephone call is delivered to user A, i.e. user A is an answering point for the FPH supplementary service, and the freephone call is transferred due to the ECT supplementary service in operation at user A's access arrangement, the user who called the freephone number shall neither receive information that the call has been transferred, nor receive the transferred-to number.

NOTE: If user A originates a freephone call and transfers it to another user, then, on transfer, the freephone number will be used in any indications to the other user.

4.100 The FPH and FPH supplementary services

If a user's access arrangement is the destination for more than one freephone number, either in the same network or in different networks, then queueing and call distribution mechanisms interact. The processing of multiple queues and call distribution mechanisms, the order and priorities assigned, are outside the scope of ETS 300 208 [8].

4.101 The AOC-D and HOLD supplementary services

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

NOTE: In the case of a served user's outgoing call being held and the served user has activated AOC-D supplementary service, the charging information is sent when appropriate whilst the call is on hold.

4.102 The CCNR and HOLD supplementary services

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

NOTE 1: When receiving a CCNR recall indication, user A may invoke the HOLD supplementary service in order to make interface resources available for the establishment of the CCNR call.

NOTE 2: When user A is busy or CCNR busy and is notified that destination B is not busy, invocation of the HOLD supplementary service will not result in the CCNR call being established.

4.103 The CONF and HOLD supplementary services

Any party involved in an active conference (i.e. the conference controller or a conferee) can place their connection to the conference on hold and later retrieve it.

4.104 The CW and HOLD supplementary services

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

NOTE: A user may use the HOLD supplementary service to hold an active call in order to be able to subsequently answer the waiting call from C.

4.105 The ECT and HOLD supplementary services

The invocation of the ECT supplementary service shall have no impact on any held calls not involved in the transfer.

If either of the transferred users have put their call on hold prior to the transfer, the resulting transferred call shall remain on hold by that user. The transferring user shall be replaced as the held user in the resulting call by the other user.

4.106 The HOLD and HOLD supplementary services

If the HOLD supplementary service is provided to both users involved in one call, each of these users can hold and retrieve the call independently from these operations having been carried out by the other user.

4.107 The CD and MCID supplementary services

The MCID supplementary service can be invoked for a deflected call. In addition to the normal operation of the MCID supplementary service, the identity of the first diverting user shall be registered and, as a network option, the last diverting user can be registered.

Once deflection has taken place, the deflecting user cannot invoke the MCID supplementary service.

The MCID supplementary service shall not be automatically invoked when an alerting call is terminated due to the invocation of the CD supplementary service.

4.108 The CFB and MCID supplementary services

The MCID supplementary service can be invoked for a forwarded call. In addition to the normal operation of the MCID supplementary service, the identity of the first diverting user shall be registered and, as a network option, the last diverting user can be registered.

Once forwarding has taken place, the forwarding user cannot invoke the MCID supplementary service.

4.109 The CFNR and MCID supplementary services

The MCID supplementary service can be invoked for a forwarded call. In addition to the normal operation of the MCID supplementary service, the identity of the first diverting user shall be registered and, as a network option, the last diverting user can be registered.

Once forwarding has taken place, the forwarding user cannot invoke the MCID supplementary service.

The MCID supplementary service shall not be automatically invoked when an alerting call is terminated due to the invocation of the CFNR supplementary service.

4.110 The CFU and MCID supplementary services

The MCID supplementary service can be invoked for a forwarded call. In addition to the normal operation of the MCID supplementary service, the identity of the first diverting user shall be registered and, as a network option, the last diverting user can be registered.

Once forwarding has taken place, the forwarding user cannot invoke the MCID supplementary service.

4.111 The CLIR and MCID supplementary services

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

NOTE: When the MCID supplementary service is invoked the number of an incoming call is registered in the network regardless of whether the calling user has activated the CLIR supplementary service or not.

4.112 The CONF and MCID supplementary services

Conference controller:

The conference controller cannot invoke the MCID supplementary service for conferees within the conference.

NOTE: To activate the MCID supplementary service the conference controller should first create a private communication with the user to be identified using the MCID supplementary service.

Conferees:

If a conferee invokes the MCID supplementary service only information about the connection to the conference controller shall be registered. No information about the other conferees shall be registered.

4.113 The DDI and MCID supplementary services

If the DDI supplementary service is provided to the served user of the MCID supplementary service, then the MCID supplementary service shall be provided either globally for the whole access, or, as a network option, for specific ISDN numbers forming part of the DDI supplementary service according to access arrangements.

In both cases, the complete ISDN number of the called user shall be registered.

4.114 The ECT and MCID supplementary services

The transferring user cannot invoke the MCID supplementary service on a call after transfer of that call has been successfully invoked.

If, after transfer has been completed, a transferred-to user successfully invokes the MCID supplementary service, then the network shall register the identity of both transferred-to users and the identity of the transferring user.

4.115 The FPH and MCID supplementary services

In the case where the FPH supplementary service applies a number translation, both the called freephone number and the number resulting from the translation shall be registered.

NOTE: During a certain period from the introduction of ISDN, not all networks may support the registration of the called freephone number.

4.116 The CCBS and MMC supplementary services

An attempt to activate the CCBS supplementary service on a call to a conference shall be rejected.

4.117 The CCNR and MMC supplementary services

An attempt to activate the CCNR supplementary service on a call to a meet-me conference shall be rejected.

4.118 The CONF and MMC supplementary services

A participant can be involved separately in a (meet-me) conference as well as in an (add-on) conference.

NOTE: A service provider may take appropriate measures to prevent a connection to a (meet-me) conference from being added to an (add-on) conference. The associated procedures are outside the scope of ETS 300 164 [3] and ETS 300 183 [4].

4.119 The ECT and MMC supplementary services

Any participant can invoke the ECT supplementary service in order to transfer their connection to the conference to another user after that connection has been established.

NOTE: A service provider may take appropriate measures to prevent a connection to a conference from being transferred. The associated procedures are outside the scope of ETS 300 164 [3] and ETS 300 367 [10].

4.120 The HOLD and MMC supplementary services

Any party involved in a conference can place their connection to the conference on hold and later retrieve it.

Any party placing their connection to the conference on hold can retrieve any other call that party had previously placed on hold.

4.121 The CFB and MSN supplementary services

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

When the CFB supplementary service applies on a per number basis, if the served user also subscribes to the MSN supplementary service, then in an activation, deactivation or interrogation request, the ISDN number to which the CFB supplementary service relates shall be included.

4.122 The CFNR and MSN supplementary services

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

When the CFNR supplementary service applies on a per number basis, if the served user also subscribes to the MSN supplementary service, then in an activation, deactivation or interrogation request, the ISDN number to which the CFNR supplementary service relates shall be included.

4.123 The CFU and MSN supplementary services

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

When the CFU supplementary service applies on a per number basis, if the served user also subscribes to the MSN supplementary service, then in an activation, deactivation or interrogation request, the ISDN number to which the CFU supplementary service relates shall be included.

4.124 The CLIP and MSN supplementary services

If the MSN 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 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 ISDN number of the calling party's access (see ETS 300 089 [2]).

If the MSN 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.

4.125 The CUG and MSN supplementary services

Different closed user groups can be assigned to each multiple subscriber number. The network cannot guarantee that a given closed user group matches beyond the access towards the user. As the closed user group assignment to the multiple subscriber numbers is the full responsibility of the user, this may lead to restricted applicability of a combination of the closed user group and MSN supplementary services.

4.126 The DDI and MSN supplementary services

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

NOTE 1: Subscription to the DDI and the MSN supplementary service is mutually exclusive. However in some networks, both supplementary services could co-exist on the same access (e.g. for future extension of service provision).

NOTE 2: The information provided by the public ISDN in the DDI supplementary service can be used by the private ISDN in the context of the private ISDN's MSN supplementary service.

4.127 The MCID and MSN supplementary services

If the MSN supplementary service is provided to the served user of the MCID supplementary service, invocation of the MCID supplementary service shall be provided either globally for the whole access or on a per multiple subscriber number basis, according to access arrangements.

4.128 The CFB and MWI supplementary services

The MWI shall never be diverted. The indication shall be given to the receiving user at the receiving user's original location.

4.129 The CFNR and MWI supplementary services

The MWI shall never be diverted. The indication shall be given to the receiving user at the receiving user's original location.

4.130 The CFU and MWI supplementary services

The MWI shall never be diverted. The indication shall be given to the receiving user at the receiving user's original location.

4.131 The MSN and MWI supplementary services

If the receiving user is subscribed to the MSN supplementary service, the MWI can be activated for each assigned ISDN number individually.

In this case the MWI provided to the receiving user shall in addition contain the relevant receiving user's ISDN number.

If the controlling user is subscribed to the MSN supplementary service, the controlling user can indicate in a request to (de)activate the MWI supplementary service a parameter with the applicable controlling user's number.

4.132 The CCBS and OCB-F supplementary services

When the OCB-F supplementary service is activated after the served user activates the CCBS supplementary service, the CCBS call shall be treated as a normal call.

4.133 The CCNR and OCB-F supplementary services

When the OCB-F supplementary service is activated after the served user activates the CCNR supplementary service, the CCNR call shall be treated as a normal call.

4.134 The CD and OCB-F supplementary services

If the OCB-F supplementary service has been activated, a request to invoke the CD supplementary service shall be rejected if the served user's calls to the deflected-to user would be barred by the OCB-F supplementary service.

4.135 The CFB and OCB-F supplementary services

If the OCB-F supplementary service has already been activated, a request to activate the CFB supplementary service shall be rejected if the served user's calls to the forwarded-to user would be barred by the OCB-F supplementary service.

If the CFB supplementary service was activated before the activation of the OCB-F supplementary service, the CFB supplementary service shall not be affected.

4.136 The CFNR and OCB-F supplementary services

If the OCB-F supplementary service has already been activated, a request to activate the CFNR supplementary service shall be rejected if the served user's calls to the forwarded-to user would be barred by the OCB-F supplementary service.

If the CFNR supplementary service was activated before the activation of the OCB-F supplementary service, the CFNR supplementary service shall not be affected.

4.137 The CFU and OCB-F supplementary services

If the OCB-F supplementary service has already been activated, a request to activate the CFU supplementary service shall be rejected if the served user's call to the forwarded-to user would be barred by the OCB-F supplementary service.

If the CFU supplementary service was activated before the activation of the OCB-F supplementary service, the CFU supplementary service shall not be affected.

4.138 The CUG and OCB-F supplementary services

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

NOTE: Both the OCB-F supplementary service restrictions and the CUG supplementary service restriction have to be met.

4.139 The FPH and OCB-F supplementary services

It shall be possible to bar a call to a Freephone number.

4.140 The MSN and OCB-F supplementary services

The OCB-F supplementary service applying to the user indicated by the "number of the calling user" in the outgoing call shall be used to determine whether the outgoing call can be set up. The network cannot guarantee that outgoing calls are restricted beyond applying the restrictions for the indicated "number of the calling user". If no "number of the calling user" is indicated when making the outgoing call, or the "number of the calling user" is not known at the served user's access, then the outgoing call shall be barred according to the active barring program (if any) belonging to the default ISDN number of the served user's access.

4.141 The CCBS and OCB-UC supplementary services

When the OCB-UC supplementary service is activated after the served user activates the CCBS supplementary service, the CCBS call shall be treated as a normal call.

4.142 The CCNR and OCB-UC supplementary services

When the OCB-UC supplementary service is activated after the served user activates the CCNR supplementary service, the CCNR call shall be treated as a normal call.

4.143 The CD and OCB-UC supplementary services

If the OCB-UC supplementary service has been activated, a request to invoke the CD supplementary service shall be rejected if the served user's calls to the deflected-to user would be barred by the OCB-UC supplementary service.

4.144 The CFB and OCB-UC supplementary services

If the OCB-UC supplementary service has already been activated, a request to activate the CFB supplementary service shall be rejected if the served user's calls to the forwarded-to user would be barred by the OCB-UC supplementary service.

If the CFB supplementary service was activated before the activation of the OCB-UC supplementary service, the CFB supplementary service shall not be affected.

4.145 The CFNR and OCB-UC supplementary services

If the OCB-UC supplementary service has already been activated, a request to activate the CFNR supplementary service shall be rejected if the served user's calls to the forwarded-to user would be barred by the OCB-UC supplementary service.

If the CFNR supplementary service was activated before the activation of the OCB-UC supplementary service, the CFNR supplementary service shall not be affected.

4.146 The CFU and OCB-UC supplementary services

If the OCB-UC supplementary service has already been activated, a request to activate the CFU supplementary service shall be rejected if the served user's call to the forwarded-to user would be barred by the OCB-UC supplementary service.

If the CFU supplementary service was activated before the activation of the OCB-UC supplementary service, the CFU supplementary service shall not be affected.

4.147 The CUG and OCB-UC supplementary services

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

NOTE: Both the OCB-UC supplementary service restrictions and the CUG supplementary service restrictions shall be met.

4.148 The FPH and OCB-UC supplementary services

It shall be possible to bar a call to a Freephone number.

4.149 The MSN and OCB-UC supplementary services

The OCB-UC supplementary service applying to the user indicated by the "number of the calling user" in the outgoing call, shall be used to determine whether the outgoing call can be set up. The network cannot guarantee that outgoing calls are restricted beyond applying the restrictions for the indicated "number of the calling user". If no "number of the calling user" is indicated when making the outgoing call, or the "number of the calling user" is not known at the served user's access, then the outgoing call shall be barred according to the active barring program (if any) belonging to the default ISDN number of the served user's access.

4.150 The OCB-F and OCB-UC supplementary services

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

NOTE: When placing an outgoing call both the OCB-F barring program and the OCB-UC barring program shall be applied (if active).

4.151 The AOC-S and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.1 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.152 The AOC-D and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.1 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.153 The AOC-E and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.1 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.154 The CCBS and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.7 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.155 The CCNR and SCF supplementary services

The procedures of subclause 7.10.5 of EN 301 134 [11] shall apply.

4.156 The CD and SCF supplementary services

Not applicable for the SCF supplementary service operating unconditionally.

For the SCF supplementary service operating on busy or on no reply; no impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

If the network indicates the arrival of an incoming call to the user, then depending on the response, or lack of response, from the served user one of the following will take place:

- invocation of the CD supplementary service;
- invocation of the SCF supplementary service operating on busy;
- invocation of the SCF supplementary service operating on no reply.

4.157 The CFB and SCF supplementary services

Invocation of the SCF supplementary service operating on busy or invocation of the SCF supplementary service operating unconditionally shall take precedence over invocation of the CFB supplementary service.

4.158 The CFNR and SCF supplementary services

Invocation of the SCF supplementary service operating on no reply or invocation of the SCF supplementary service operating unconditionally shall take precedence over invocation of the CFNR supplementary service.

4.159 The CFU and SCF supplementary services

Invocation of the SCF supplementary service operating unconditionally shall take precedence over invocation of the CFU supplementary service.

Invocation of CFU supplementary service shall take precedence over invocation of the SCF supplementary service operating on busy and invocation of the SCF supplementary service operating on no reply.

4.160 The CLIP and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.5.1 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.161 The CLIR and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.5.2 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.162 The COLP and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.5.3 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.163 The COLR and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.5.4 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.164 The CONF and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.8.1 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.165 The CUG and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.6 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.166 The CW and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.2 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.167 The DDI and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.9 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.168 The ECT and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.4 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.169 The FPH and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.11 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.170 The HOLD and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.3 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.171 The MCID and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.12 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.172 The MMC and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.8.2 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.173 The MSN and SCF supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.13 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.174 The MWI and SCF supplementary services

The message waiting indication shall never be diverted. The indication shall be given to the receiving user at the receiving user's original location.

4.175 The OCB-F and SCF supplementary services

If the SCF supplementary service has been activated and the OCB-F supplementary service has been activated, the following shall apply:

- If the OCB-F supplementary service has already been activated, a request to activate the SCF supplementary service shall be rejected if the served user's call to the forwarded-to user would be barred by the OCB-F supplementary service.
- If the SCF supplementary service was activated before the activation of the OCB-F supplementary service, the SCF supplementary service shall not be affected.

4.176 The OCB-UC and SCF supplementary services

If the SCF supplementary service has been activated and the OCB-UC supplementary service has been activated, the following shall apply:

- If the OCB-UC supplementary service has already been activated, a request to activate the SCF supplementary service shall be rejected if the served user's call to the forwarded-to user would be barred by the OCB-UC supplementary service.
- If the SCF supplementary service was activated before the activation of the OCB-UC supplementary service, the SCF supplementary service shall not be affected.

4.177 The SCF and SCF supplementary services

Invocation of the SCF supplementary service operating unconditionally shall take precedence over invocation of the SCF supplementary service operating on busy and invocation of the SCF supplementary service operating on no reply.

4.178 The CCBS and SUB supplementary services

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

NOTE: The subaddress of the calling terminal, if provided in the initial call set-up, can be used to select this originating terminal when notifying or recalling the calling user.

4.179 The CCNR and SUB supplementary services

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

NOTE: The calling user's subaddress (if any) which was supplied in the original call request, can be included when notifying or recalling the calling user.

4.180 The CD and SUB supplementary services

The subaddress associated with the original called party number is delivered to the original called party and shall not be forwarded if the call is deflected.

4.181 The CFB and SUB supplementary services

The subaddress associated with the original called party number shall not be forwarded if the call is forwarded.

4.182 The CFNR and SUB supplementary services

The subaddress associated with the original called party number is delivered to the original called party and shall not be forwarded if the call is forwarded.

4.183 The CFU and SUB supplementary services

The subaddress associated with the original called party number shall not be forwarded if the call is forwarded.

4.184 The CLIP and SUB supplementary services

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.

4.185 The COLP and SUB supplementary services

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

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

4.186 The MWI and SUB supplementary services

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

NOTE: Subaddresses cannot be handled by the MWI supplementary service.

4.187 The SCF and SUB supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.14 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.188 The AOC-S and TP supplementary services

If the charging rate changes when a call is in the suspended state, the new charging rate shall be given when the call is resumed.

4.189 The AOC-D and TP supplementary services

At call suspension request, as a network option, the cumulative information (i.e. total charge incurred up to the moment when the call is suspended) can be given.

On resumption of the call, the sending of charging information shall start again and as a network option, the updated cumulative charging information can be given.

If the call is cleared while the call is suspended at the calling user's access, and if the calling user attempts to resume the call within the timer, then, as a network option, advice of charge information can be given to that user at the time of the resume attempt.

4.190 The AOC-E and TP supplementary services

If the call is cleared while the call is suspended at the calling user's access, and if the calling user attempts to resume the call within the timer, then, as a network option, advice of charge information can be given to the user at the time of the resume attempt.

4.191 The CCBS and TP supplementary services

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

NOTE: In the case of disconnected terminals, CCBS recalls shall be treated as not accepted upon expiry of the CCBS recall timer.

4.192 The CCNR and TP supplementary services

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

NOTE: In the case of disconnected terminals a CCNR recall will be treated as not accepted upon expiry of the CCNR recall timer.

4.193 The CONF and TP supplementary services

When a terminal manages an add-on conference, the TP supplementary service shall not be available.

4.194 The CW and TP supplementary services

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

NOTE: A waiting call is not an active call and therefore cannot be suspended.

4.195 The HOLD and TP supplementary services

A terminal cannot suspend an active call when a call is held at that terminal.

A held call shall not be suspended.

4.196 The MCID and TP supplementary services

The called user cannot invoke the MCID supplementary service for a call which is suspended by the called user.

If the calling user clears while the call has been suspended by the called user, the called user cannot resume the call and hence cannot invoke the MCID supplementary service for that call.

4.197 The SCF and TP supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.15 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.198 The TP and TP supplementary services

The TP supplementary service can be in operation at both the calling and called interfaces of a call.

4.199 The CCBS and UUS supplementary services

The network shall not store any information related to the UUS supplementary service provided by user A in the original call.

User A can request the activation of the UUS supplementary service and provide the UUI, as required, when accepting the CCBS recall. If the resulting CCBS call contains information related to the UUS supplementary service, this shall be handled as for the normal operation of the UUS supplementary service.

4.200 The CCNR and UUS supplementary services

The network shall not store any information related to the UUS supplementary service provided by user A in the original call.

User A can request the activation of the UUS supplementary service and provide the user-to-user information, as required, when accepting the CCNR recall. If the resulting CCNR call contains information related to the UUS supplementary service, this shall be handled as for the normal operation of the UUS supplementary service.

NOTE: The original call request information, excluding any user-to-user information, is retained by the network.

4.201 The CD and UUS supplementary services

Annex A gives an overview of the interaction between the UUS supplementary service and the CD (after alerting) and the CFNR supplementary services.

NOTE: As a service provider option, the forwarding of UUI, or requests for the UUS supplementary service may be restricted to deflecting users who subscribe to the relevant parts of the UUS supplementary service.

Request for the call deflection supplementary service in response to the offered call

Any user-to-user information or request for the UUS supplementary service shall be deflected with the call.

Request for the call deflection supplementary service during the period that the user is being informed of the incoming call

Service 1:

If the calling user requests service 1 implicit, then the CD supplementary service can be invoked. The request for service 1 shall be deflected with the call.

If the calling user requests service 1 and indicates that it is required for the call to proceed, then the CD supplementary service shall be rejected and the call shall not be deflected.

If the calling user requests service 1 and indicates that it is not required on the call, then:

- if the called user has explicitly accepted the request, then as a service provider option:
 - the request for the CD supplementary service will be rejected and the call shall not be deflected; or
 - the request for the CD supplementary service can be accepted. In this case the call shall be deflected and the request for service 1, together with any UUI, shall be deflected with the call.

NOTE 1: In this case, the indication that the deflected-to user is being informed of the call will not be sent to the calling user and any UUI included in this indication will be discarded.

NOTE 2: Also in this case, if the deflected-to user rejects the request for service 1 when the connection is established, then this rejection may be given to the calling user.

- if the called user has rejected, or has ignored, the request, the CD supplementary service can be invoked. The call shall be deflected without the request for service 1.

Service 2:

If the calling user requests service 2 and indicates that it is required for the call to proceed, then the CD supplementary service shall be overridden and the call shall not be deflected.

If the calling user requests service 2 and indicates that it is not required on the call, then:

- if the called user has accepted the request for service 2, then any request for the CD supplementary service shall be rejected and the call shall not be deflected;
- if the called user has rejected or ignored the request for service 2, then the CD supplementary service can be invoked and the call shall be deflected without the request for service 2.

NOTE 3: In this case, if the calling user sends UUI after the call has been deflected, then this information will be discarded.

Service 3:

If the calling user requests service 3 when originating the call, then the CD supplementary service can be invoked. The request for service 3 shall be deflected with the call.

After deflection:

After deflection, the UUS service can be requested after the communication has been established.

4.202 The CFB and UUS supplementary services

Any UUI or request for the UUS supplementary service shall be forwarded with the call.

NOTE: As a service provider option, this may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

After forwarding, the UUS supplementary service can be requested after the communication has been established.

4.203 The CFNR and UUS supplementary services

Annex A gives an overview of the interaction between the UUS supplementary service and the CD (after alerting) and the CFNR supplementary services.

NOTE 1: As a service provider option, the forwarding of UUI, or requests for the UUS supplementary service may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

Service 1:

If the calling user requests service 1 implicit, then the CFNR supplementary service can be invoked. The request for service 1 shall be forwarded with the call.

If the calling user requests service 1 and indicates that it is required for the call to proceed, then the CFNR supplementary service shall be rejected and the call shall not be forwarded.

If the calling user requests service 1 and indicates that it is not required on the call, then:

- if the called user has explicitly accepted the request, then as a service provider option:
 - the request for the CFNR supplementary service will be rejected and the call shall not be forwarded; or
 - the request for the CFNR supplementary service can be accepted. In this case the call shall be forwarded and the request for service 1, together with any UUI, shall be forwarded with the call.

NOTE 2: In this case, the indication that the forwarded-to user is being informed of the call will not be sent to the calling user and any UUI included in this indication will be discarded.

NOTE 3: Also in this case, if the forwarded-to user rejects the request for service 1 when the connection is established, then this rejection may be given to the calling user.

- if the called user has rejected, or has ignored, the request, the CFNR supplementary service can be invoked. The call shall be forwarded without the request for service 1.

Service 2:

If the calling user requests service 2 and indicates that it is required for the call to proceed, then the CFNR supplementary service shall be overridden and the call shall not be forwarded.

If the calling user requests service 2 and indicates that it is not required on the call, then:

- if the called user has accepted the request for service 2, the invocation of the CFNR supplementary service shall be overridden and the call shall not be forwarded;
- if the called user has rejected or ignored the request for service 2, the CFNR supplementary service shall be invoked and the call shall be forwarded without the request for service 2.

NOTE 4: In this case, if the calling user sends UUI after the call has been forwarded, then this UUI will be discarded.

Service 3:

If the calling user requests service 3 when originating the call, then the CFNR supplementary service can be invoked. The request for service 3 shall be forwarded with the call.

After forwarding, the UUS service can be requested after the communication has been established.

4.204 The CFU and UUS supplementary services

Any UUI or request for the UUS supplementary service shall be forwarded with the call.

NOTE: As a service provider option, this may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

After forwarding, the UUS supplementary service can be requested after the connection has been established.

4.205 The CONF and UUS supplementary services

For a conference, only service 3 shall be available.

NOTE 1: However, on calls which are set up to potential conferees outside the conference, service 1 and/or service 2 may be available.

In the following paragraphs, references to the UUS supplementary service refer only to service 3.

The UUS supplementary service cannot be activated by the conference controller, nor by a conferee, for communication between the participants in the conference.

When a user is added to the conference and the UUS supplementary service has been activated on the call between the conference controller and that user, the UUS supplementary service shall remain activated for communication between the conference controller and that conferee.

If the UUS supplementary service has been activated for communication between the conference controller and a conferee, then when a private communication is created with that party, the UUS supplementary service shall remain activated for the private communication.

NOTE 2: Once this private communication is created, it is considered as a separate call and therefore the normal procedures for the UUS supplementary service apply.

UUI can be sent by the conference controller to conferees individually, or broadcast to all conferees. UUI can be received by the conference controller from any of the conferees. The network shall identify the conferee sending the UUI to the conference controller.

The same limitations on the amount of UUI which can be transferred between two users shall apply to communications between the conference controller and the conference.

Conferees can send UUI to, and receive UUI from the conference controller. UUI shall not be transferred between the conferees in association with the conference.

4.206 The CW and UUS supplementary services

UUI (for the operation of service 1) included in the call request shall be delivered to the called user with the call waiting indication.

UUI (for the operation of service 2) sent from the calling user to the called user during the alerting phase can be sent when a point-to-point configuration exists at the called side.

There is no interaction with service 3 of the UUS supplementary service.

4.207 The ECT and UUS supplementary services

When calls are transferred as a result of invocation of the ECT supplementary service, the UUS supplementary service activated on either of the calls prior to the invocation of the ECT supplementary service shall be cancelled by the network.

No specific notification shall be sent to the users on the resulting call when the UUS supplementary service is no longer activated.

The users on the resulting call can request service 3 again, if required.

4.208 The MMC and UUS supplementary services

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

NOTE: The conference resource cannot accept UUI. According to the procedures of the UUS supplementary service, UUI may be discarded, or the call to the conference rejected.

4.209 The SCF and UUS supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.14 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.210 The TP and UUS supplementary services

Not compatible, i.e. while a call is suspended UUI cannot be transferred between the two users.

NOTE: The network shall not store any UUI while the call is suspended.

4.211 The AOC-S and 3PTY supplementary services

The served user shall be informed about the charging rate for those calls which that user has established.

Charges for the use of the 3PTY supplementary service:

As a network option, the charging information can be sent to the served user.

NOTE: However, in some networks no charging information can be given in this case, e.g. due to off-line processing of the charges.

4.212 The AOC-D and 3PTY supplementary services

Charges for the different connections within the 3PTY supplementary service:

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

Charges for the use of the 3PTY supplementary service:

As a network option, the charging information can be sent to the served user.

4.213 The AOC-E and 3PTY supplementary services

Charges for the different connections to the 3PTY supplementary service:

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

Charges for the use of the 3PTY supplementary service:

As a network option, the charging information can be sent to the served user.

4.214 The CONF and 3PTY supplementary services

Each participant in a three-way conversation can be involved separately in a conference.

In order to convert a three-way conversation into a conference, the served user of the 3PTY supplementary service shall terminate the 3PTY supplementary service first and then shall invoke the CONF supplementary service. Subsequently, the held call can be added to the conference.

As a network option, a user in a three-way conversation, but who is not the served user of the 3PTY supplementary service, can add their connection to the three-way conversation to a conference which is controlled by that user.

4.215 The CUG and 3PTY supplementary services

For the successful invocation of the 3PTY supplementary service, any closed user group restrictions applied to one call shall match with any closed user group restrictions applied to the other call.

4.216 The CW and 3PTY supplementary services

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

NOTE: The CW supplementary service can be invoked for any user participating in a three-way conversation.

4.217 The ECT and 3PTY supplementary services

The served user who has invoked the 3PTY supplementary service cannot invoke the ECT supplementary service in order to transfer either of the calls involved. The served user shall terminate the 3PTY supplementary service in order to transfer either of the calls involved in the three-way conversation.

4.218 The HOLD and 3PTY supplementary services

Any party involved in a three-way conversation can place the connection to the three-way conversation on hold and later retrieve it.

When the served user invokes the HOLD supplementary service in order to hold the three-way conversation, then the two remote parties shall be informed.

When a remote party invokes the HOLD supplementary service, the served user of the 3PTY supplementary service shall be informed. The other remote party in the three-way conversation shall not be informed.

While the connection of one party to the three-way conversation is held, the other parties can still communicate.

4.219 The MMC and 3PTY supplementary services

A participant can be involved separately in a three-way conversation as well as in a conference.

NOTE: A service provider may take appropriate measures to prevent a call to a conference from being joined with another call into a three-way conversation. The associated procedures are outside the scope of this standard.

4.220 The MSN and 3PTY supplementary services

The 3PTY supplementary service cannot be provided on a per multiple subscriber number basis.

Calls using different multiple subscriber numbers to identify the served user can be included in the same three-way conversation.

4.221 The SCF and 3PTY supplementary services

Depending on the type of forwarding which is being performed, the procedures of subclause 8.16 of ETS 300 200 [6] (for unconditional forwarding), of ETS 300 199 [5] (for forwarding on busy), or of ETS 300 201 [7] (for forwarding on no reply) shall apply.

4.222 The TP and 3PTY supplementary services

The network shall prevent the served user of the 3PTY supplementary service from invoking the TP supplementary service.

When a remote party invokes the TP supplementary service, the served user of the 3PTY supplementary service shall be informed. The other remote party in the three-way conversation shall not be informed.

4.223 The UUS and 3PTY supplementary services

During the three-way conversation, the served user can send user-to-user information separately to each remote party and the served user can receive user-to-user information separately from each remote party. User-to-user information shall not be transferred between the remote parties.

4.224 The 3PTY and 3PTY supplementary services

Each party in a three-way conversation can be involved separately in another three-way conversation.

A served user cannot invoke the 3PTY supplementary service if one or both calls to be connected are already part of another three-way conversation controlled by the same served user.

As a network option, a remote party in a three-way conversation can invoke the 3PTY supplementary service in order to make their connection to the three-way conversation a part of another three-way conversation controlled by that remote party.

Annex A (informative): Interaction between the UUS supplementary service and the CD (after alerting) and the CFNR supplementary services

Table A.1: Interaction between the UUS supplementary service and the CD (after alerting) and the CFNR supplementary services

Calling user		Forwarding user/deflecting user		
UUS service	Type of request	UUS request and/or UUI given to forwarding or deflecting user	Call is forwarded or deflected	UUS request and/or UUI forwarded or deflected
1	Implicit	Yes	Yes	Yes
1	Explicit, required	Yes (acceptance) Yes (no response) Yes (rejection)	No No Not applicable (rejection)	Not applicable Not applicable Not applicable
1	Explicit, not required	Yes (acceptance) Yes (no response) Yes (rejection)	(note) Yes Yes	(note) No No
2	Explicit, required	Yes (acceptance) Yes (rejection)	No (maintain) Not applicable (rejection)	No Not applicable
2	Explicit, not required	Yes (acceptance) Yes (no response) Yes (rejection)	No Yes Yes	Not applicable No No
3	Explicit, required, Requested in call set-up	Yes	Yes	Yes
3	Explicit, not required, requested in call set-up	Yes	Yes	Yes
3	Explicit, not required, requested while the call is established	No impact	No impact	No impact

NOTE: As a service provider option:

- the request for the CFNR or the CD supplementary service will be rejected and the call will not be forwarded or deflected; or
- the request for the CFNR or the CD supplementary service can be accepted. In this case, the call will be forwarded or deflected and the request for service 1, together with any UUI, will be forwarded or deflected with the call.

Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

ETSI EN 300 195-1 (V1.4.3): "Integrated Services Digital Network (ISDN); Supplementary service interactions; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification"

ETSI ETS 300 050 (1991): "Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service; Service description"

ETSI ETS 300 053 (1991): "Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service; Service description"

ETSI ETS 300 059 (1991): "Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service; Service description"

ETSI ETS 300 062 (1991): "Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Service Description"

ETSI ETS 300 090 (1992): "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Service description"

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ETSI ETS 300 128 (1992) including amendment A1 (1998): "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Service description"

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ETSI ETS 300 139 (1992): "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service; Service description"

ETSI ETS 300 178 (1992): "Integrated Services Digital Network (ISDN); Advice Of Charge: charging information at call set-up time (AOC-S) supplementary service; Service description"

ETSI ETS 300 179 (1992): "Integrated Services Digital Network (ISDN); Advice Of Charge: charging information during the call (AOC-D) supplementary service; Service description"

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ETSI EN 301 082 (V1.1.1): "Integrated Services Digital Network (ISDN); Outgoing Call Barring-Fixed (OCB-F) supplementary service; Service description"

ETSI EN 301 084 (V1.1.1): "Integrated Services Digital Network (ISDN); Outgoing Call Barring-User Controlled (OCB-UC) supplementary service; Service description"

ETSI EN 301 133 (V1.1.1): "Integrated Services Digital Network (ISDN); Selective Call Forwarding (SCF) supplementary services (unconditional, busy and no reply); Service description"

History

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