

**GUIDELINES FOR IMPLEMENTATION**  
**ISDN SUPPLEMENTARY SERVICES**  
**FUNCTIONAL PROTOCOL**

## FOREWORD

This **Guidelines for implementation, ISDN Supplementary Services, Functional Protocol** contains clarifications and recommended option selections for ETSI deliverables related to ISDN Supplementary Services. This document covers the implementation of ISDN supplementary services using functional protocol. The aim of this document is to ensure the interoperability of ISDN networks and terminal equipment in Finland.

This guideline document has been prepared by the members of the national standardization groups for services and for access signalling. The Steering Group for Telecommunications Standardization has discussed this document and recommends it to be followed when implementing ISDN supplementary services using functional protocol.

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## 1 GENERAL

This guideline document contains specifications for the following supplementary services:

- Multiple Subscriber Number (MSN)
- Terminal Portability (TP)
- Call Waiting (CW)
- Subaddressing (SUB)
- Direct Dialling In (DDI)
- Calling Line Identification Presentation/Restriction (CLIP/CLIR)
- Connected Line Identification Presentation/Restriction (COLP/COLR)
- Malicious Call Identification (MCID)
- Closed User Group (CUG)
- Call Hold (HOLD)
- Meet Me Conference (MMC)
- Advice of Charge (AOC)
- Conference Call add-on (CONF)
- Three Party (3PTY)
- Call Diversion (CFB, CFU, CFNR, CD, SCF)
- Freephone (FPH)
- User to User Signalling (UUS)
- Explicit Call Transfer (ECT)
- Completion of Calls to Busy Subscriber (CCBS)
- Message Waiting Indication (MWI)
- Security Tools (SET)
- Outgoing Call Barring (OCB)
- Call Connection on No Reply (CCNR)
- Anonymous Call Rejection (ACR)
- Line Hunting (LH)

In addition this document covers Generic Functional Protocol (GFP) for the support of supplementary services.

Note 1: This guideline document contains also specifications for the supplementary services interactions. Single step call transfer service has been discarded by ETSI and no interactions will be defined.

Note 2: The actual date when the specific services will be supported by the network is operator dependent.

## 2 REFERENCES

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- ETS 300 050                    Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service. Service Description
- ETS 300 051                    Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service. Functional capabilities and information flows
- EN 300 052-1 V.1.2.4        Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service. Digital Subscriber Signalling System No. one (DSS1) protocol
- ETS 300 053                    Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service. Service Description
- ETS 300 054                    Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service. Functional capabilities and information flows
- EN 300 055-1 V.1.2.4        Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service. Digital Subscriber Signalling System No. one (DSS1) protocol
- ETS 300 056                    Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service. Service Description, +A1
- ETS 300 057                    Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service Functional capabilities and information flows
- EN 300 058-1 V.1.2.4        Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
- ETS 300 059                    Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service Service Description
- ETS 300 060                    Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service Functional capabilities and information flows
- EN 300 061-1 V.1.2.4        Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
- ETS 300 062                    Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service Service Description

ETS 300 063	Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service Functional capabilities and information flows
EN 300 064-1 V.1.3.4	Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
EN 300 089 V.3.1.1	Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service. Service description
EN 300 090 V.1.2.1	Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service. Service description
ETS 300 091	Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) and Calling Line Identification Restriction (CLIR) supplementary services. Functional capabilities and information flows
EN 300 092-1 V.2.1.1	Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service. Digital Subscriber Signalling System No. one (DSS1) protocol
EN 300 093-1 V.1.2.4	Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service. Digital Subscriber Signalling System No. one (DSS1) protocol
EN 300 094 V.2.1.1	Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service. Service description
ETS 300 095	Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service. Service description
ETS 300 096	Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) and Connected Line Identification Restriction (COLR) supplementary services. Functional capabilities and information flows
EN 300 097-1 V.1.2.4	Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service. Digital Subscriber Signalling System No. one (DSS1) protocol
EN 300 098-1 V.1.2.4	Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service. Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 128	Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service Service description

ETS 300 129	Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service Functional capabilities and information flows
EN 300 130-1 V.1.2.4	Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 136	Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service Service description
ETS 300 137	Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service Functional capabilities and information flows
EN 300 138-1 V.1.3.4	Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 139	Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service Service description
ETS 300 140	Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service Functional capabilities and information flows
EN 300 141-1 V.1.2.4	Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 164	Integrated Services Digital Network (ISDN); Meet-Me Conference (MMC) supplementary service Service description
ETS 300 165	Integrated Services Digital Network (ISDN); Meet-Me Conference (MMC) supplementary service Functional capabilities and information flows
ETS 300 178	Integrated Services Digital Network (ISDN); Advice of Charge: charging information at call set-up time (AOC-S) supplementary service Service description
ETS 300 179	Integrated Services Digital Network (ISDN); Advice of Charge: charging information during the call (AOC-D) supplementary service Service description
ETS 300 180	Integrated Services Digital Network (ISDN); Advice of Charge: charging information at the end of the call (AOC-E) supplementary service Service description
ETS 300 181	Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service Functional capabilities and information flows

EN 300 182-1 V.1.3.6	Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 183	Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service Service description
ETS 300 184	Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service Functional capabilities and information flows
EN 300 185-1 V.1.2.4	Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 186	Integrated Services Digital Network (ISDN); Three-Party (3PTY) supplementary service. Service description
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EN 300 196-1 V.1.3.1	Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling No. one (DSS1) protocol; Part 1: Protocol specification
ETS 300 199	Integrated Services Digital Network (ISDN); Call Forwarding Busy (CFB) supplementary service; Service description
ETS 300 200	Integrated Services Digital Network (ISDN); Call Forwarding Unconditional (CFU) supplementary service; Service description
EN 300 201 V.1.2.1	Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description
ETS 300 202	Integrated Services Digital Network (ISDN); Call Deflection (CD) supplementary service; Service description , +A1
EN 301 133 V.1.1.1	Integrated Services Digital Network (ISDN); Selective Call Forwarding (SCF) supplementary services (unconditional, busy and no reply); Service description

ETS 300 203	Integrated Services Digital Network (ISDN); Call Forwarding Busy (CFB) supplementary service; Functional capabilities and information flows
ETS 300 204	Integrated Services Digital Network (ISDN); Call Forwarding Unconditional (CFU) supplementary service; Functional capabilities and information flows
ETS 300 205	Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Functional capabilities and information flows
ETS 300 206	Integrated Services Digital Network (ISDN); Call Deflection (CD) supplementary service; Functional capabilities and information flows
EN 300 207-1 V.2.0.1	Integrated Services Digital Network (ISDN); Diversion supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 208	Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service Service description
ETR 209	Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service Functional capabilities and information flows
EN 300 210-1 V.1.2.4	Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 284	Integrated Services Digital Network (ISDN); User-to-user signalling (UUS) supplementary service Service description
ETR 285	Integrated Services Digital Network (ISDN); User-to-user signalling (UUS) supplementary service Functional capabilities and information flows
EN 300 286-1 V.1.2.4	Integrated Services Digital Network (ISDN); User-to-user signalling (UUS) supplementary service, Digital Subscriber Signalling System No. one (DSS1) protocol
ETS 300 367	Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service, Service description
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- EN 300 357 V.1.2.1 Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service, Service description
- ETS 300 358 Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service, Functional capabilities and information flows
- EN 300 359-1 V.1.2.4 Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service, Digital Subscriber Signalling System No. one (DSS1) protocol
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- TR 101 895 V.1.1.1 Services and Protocols for Advanced Networks (SPAN); Message Waiting Indication (MWI); Service Aspects
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- EN 301 082 V.2.1.1 Network Aspects (NA); Integrated Services Digital Network (ISDN); Outgoing Call Barring-Fixed (OCB-F) supplementary service; Service description
- EN 301 084 V.2.1.1 Network Aspects (NA); Integrated Services Digital Network (ISDN); Outgoing Call Barring-User Controlled (OCB-UC) supplementary service; Service description
- EN 301 001-1 V.1.2.2 Integrated Services Digital Network (ISDN); Outgoing Call Barring (OCB) supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification
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- EN 301 065-1 V.1.2.2 Integrated Services Digital Network (ISDN); Completion of Calls on No Reply (CCNR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification
- EN 300 403-1 V.1.3.2 Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification

- EN 301 479 V.1.1.2 Integrated Services Digital Network (ISDN); Line Hunting (LH) supplementary service; Service description
- EN 301 484-1 V.1.1.1 Integrated Services Digital Network (ISDN); Line Hunting (LH) supplementary service; Digital Subscriber Signalling System No. one (DSS1); Part 1: Protocol specification
- EN 301 798 V.1.1.1 Service and Protocols for Advanced Networks (SPAN); Anonymous Call Rejection (ACR) Supplementary Service; Service description
- ES 201 481 V.1.1.1 Integrated Services Digital Network (ISDN); ISDN service enhancements based on DDI ranges for call diversion supplementary services

### **3 MULTIPLE SUBSCRIBER NUMBER (MSN)**

#### **3.1 Definition**

The Multiple Subscriber Number (MSN) supplementary service provides the possibility for assigning multiple numbers to a single public or private access.

NOTE: This allows e.g.:

- 1) a calling user to select, via the public network, one or multiple distinct terminals out of multiple choice;
- 2) to identify the terminal to the network for the application of other supplementary services.

#### **3.2 Service description**

The service description (stage 1 description) for the MSN supplementary service is contained in the standard SFS-ETS 300 050. The following gives the recommended guidelines for the implementation of the MSN supplementary service in the Finnish networks

clause 5 and subclause 6.2.3

The multiple subscriber number provided by the calling user shall be the full ISDN subscriber number.

The called party number to be transmitted to the user's installation shall comprise the full ISDN subscriber number.

subclause 6.1

The maximum number of MSNs per access shall be 16.

subclause 7.2

The MSN supplementary service can apply at an access to a private ISDN (e.g. when the public network does not know what equipment is connected to the access).

clause 8

Supplementary services can be individually assigned to each MSN number.

subclause 8.9

Subscription to the DDI supplementary service and the MSN supplementary service is mutually exclusive.

#### **3.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the MSN supplementary service are contained in the standard SFS-ETS 300 051. The stage 2

description can be taken as informative. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **3.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the MSN supplementary service is contained in the standard SFS-EN 300 052-1. The following gives the recommended guidelines for the implementation of the MSN supplementary service in Finnish networks.

#### subclause 6.2

If the access has the MSN supplementary service, the network may use the information in the calling party number information element to identify the calling terminal, and, if necessary, the appropriate basic or supplementary service.

#### subclause 9.2.1

The type of number indicated in the Called party number information element sent to the user shall be coded as "subscriber number" and the full appropriate number shall be sent.

The "numbering plan identification" field of the Called party number information element shall be coded "ISDN/telephony numbering plan" (ITU-T Recommendation E.164).

#### subclause 9.3.1

Networks shall implement all the coding options provided in this subclause.

It is recommended that the type of number indicated in the Calling party number information element sent to the network shall be coded as "subscriber number" and the full appropriate number shall be sent.

□

## **4 TERMINAL PORTABILITY (TP)**

### **4.1 Definition**

The Terminal Portability (TP) supplementary service allows a user to move a terminal from one socket to another within one given basic access during the active state of a call. It also allows a user to move a call from one terminal to another terminal within one given basic access during the active phase of the call.

### **4.2 Service description**

The service description (stage 1 description) for the TP supplementary service is contained in the standard SFS-ETS 300 053. The following gives the recommended guidelines for the implementation of the TP supplementary service in the Finnish networks

#### subclause 8.1.2

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

On resumption of the call, the sending of charging information shall start again and the updated cumulative charging information shall 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, advice of charge information shall be given to the user at the time of the resume attempt.

#### subclause 8.1.3

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 advice of charge information can be given to the user at the time of the resume attempt.

### **4.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the TP supplementary service are contained in the standard SFS-ETS 300 054. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **4.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the TP supplementary service is contained in the standard SFS-EN 300 055-1. The TP supplementary service is implemented in the Finnish networks without national definitions or exceptions.

□

## **5 CALL WAITING (CW)**

### **5.1 Definition**

The Call Waiting (CW) supplementary service allows a user to be informed of an incoming call (as per basic call procedures) with an indication that no interface information channel is available. The user then has the choice of accepting, rejecting or ignoring the waiting call (as per basic call procedures).

### **5.2 Service description**

The service description (stage 1 description) for the CW supplementary service is contained in the standard SFS-ETS 300 056. The following gives the recommended guidelines for the implementation of the CW supplementary service in the Finnish networks

clause 3 and subclause 6.1

No specific time-out T2 will be used for no answer situation. Basic call timer shall apply in this case.

clause 5

The maximum number of calls that the network must be able to handle (e.g. active, held, alerting, waiting) on the basic access is 6.

subclause 6.1

The network will support the subscription option presented in Table 1.

The network will support value two (2) for the network provider option in Table 2. This is specified for all ISDN numbers on the basic access.

subclause 7.1

In interworking cases with non-ISDNs, no special in-band indication will be provided to the calling user.

### **5.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the CW supplementary service are contained in the standard SFS-ETS 300 057. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **5.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the CW supplementary service is contained in the standard SFS-EN 300 058-1. The following gives the recommended guidelines for the implementation of the CW supplementary service in the Finnish networks

subclauses 9.5.1.1, 9.5.2, 9.6.1 and 9.6.2 and clauses 13 and 14

In the network side the basic call timer T301 is used.

## **6 SUBADDRESSING (SUB)**

### **6.1 Definition**

The Subaddressing (SUB) supplementary service allows the called (served) user to expand his addressing capacity beyond the one given by the ISDN number.

### **6.2 Service description**

The service description (stage 1 description) for the SUB supplementary service is contained in the standard SFS-ETS 300 059. The following gives the recommended guidelines for the implementation of the SUB supplementary service in the Finnish networks

Subclause 5.1

The 20 octets maximum size of subaddress is applied.

### **6.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the SUB supplementary service are contained in the standard SFS-ETS 300 060. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **6.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the SUB supplementary service is contained in the standard SFS-EN 300 061-1. The following gives the recommended guidelines for the implementation of the SUB supplementary service in the Finnish networks

clause 5, note 2

The 20 octets maximum size of the subaddress is applied.

□

## **7 DIRECT DIALING IN (DDI)**

### **7.1 Definition**

The DDI supplementary service enables a user to call directly via a public ISDN a user on a private ISDN by using the public ISDN numbering plan.

### **7.2 Service description**

The service description (stage 1 description) for the DDI supplementary service is contained in the standard SFS-ETS 300 062. The following gives the recommended guidelines for the implementation of the DDI supplementary service in the Finnish networks

clause 5

The number of digits is defined on a per subscriber basis.

subclauses 8.5.1 and 8.5.3

A special arrangement for not screening the user provided number may be applied in Finland.

subclause 8.12

If the DDI supplementary service is provided to the served user of the MCID supplementary service, then the MCID supplementary service shall be provided for specific ISDN numbers forming part of the DDI supplementary service, according to access arrangements.

subclause 8.13

The subscription to the DDI supplementary service and the multiple subscriber number supplementary service is mutually exclusive.

The standard ES 201 481 defines the possibility to assign several call diversion supplementary services to a DDI range as an alternative to assigning supplementary services to the whole access. No national definitions or exceptions are specified.

### **7.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the DDI supplementary service are contained in the standard SFS-ETS 300 063. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **7.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the DDI supplementary service is contained in the standard SFS-EN 300 064-1. The following gives the recommended guidelines for the implementation of the DDI supplementary service in the Finnish networks

subclause 6.1 Note

The subscription to the DDI supplementary service and the multiple subscriber number supplementary service is mutually exclusive.

□

## **8 CALLING LINE IDENTIFICATION PRESENTATION/RESTRICTION (CLIP/CLIR)**

### **8.1 Definition**

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

The CLIR supplementary service enables the calling party to prevent presentation of its ISDN number to the called party.

### **8.2 Service description**

#### **8.2.1 CLIP**

The service description (stage 1 description) for the CLIP supplementary service is contained in the standard SFS-EN 300 089. The following gives the recommended guidelines for the implementation of the CLIP supplementary service in the Finnish networks

subclause 6.1

CLIP supplementary service is not always applicable when interworking to non-ISDN has occurred.

The calling line identity can be provided to called user in the ISDN if the identity has been received and it is known that presentation is not restricted.

On calls to or via non-ISDN, the originating network may restrict calling line identity from being forwarded to the destination network when the CLIR supplementary service is applicable (see also ETS 300 090 subclause 7.1 and the relevant national definition).

subclause 7.5.2

Technical capabilities to provide override category service have to be available in the Finnish ISDN.

Annex A

The two calling party number delivery option is applicable in Finland. In case of two calling party number delivery option a special arrangement for not screening the user provided number may be applied in Finland.

Annex C

The extended screening option may be provided in Finland.

#### **8.2.2 CLIR**

The service description (stage 1 description) for the CLIR supplementary service is contained in the standard SFS-EN 300 090. The following gives the recommended guidelines for the implementation of the CLIR supplementary service in the Finnish networks

clause 3 and subclauses 6.2.3.2 Note 1 and 8.5.1

Technical capabilities to provide override category service have to be available in the Finnish ISDN.

subclause 6.1

Both subscription options, permanent mode and temporary mode (defaults: presentation restricted and presentation not restricted), are offered.

subclause 6.2.3.1

The network shall be able to mark calls from special resources "presentation restricted by network".

subclause 7.1

On calls to or via non-ISDNs, it cannot be assured that a restriction indication can be carried to the destination network. The originating network in Finland may restrict any information identifying the calling user from being forwarded to the destination network when the CLIR supplementary service is applicable.

### **8.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the CLIP and CLIR supplementary services are contained in the standard SFS-ETS 300 091. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **8.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

#### **8.4.1 CLIP**

The DSS1 protocol (stage 3 description) for the CLIP supplementary service is contained in the standard SFS-EN 300 092-1. The following gives the recommended guidelines for the implementation of the CLIP supplementary service in the Finnish networks

subclauses 6.2 and 9.4

In case of two calling party number delivery option a special arrangement for not screening the user provided number may be applied in Finland.

subclause 9.2.1

It is recommended for the coding of the calling party information element sent by the calling user:

- The "numbering plan identification" field shall be coded "ISDN/Telephony numbering plan".

In case DDI is not activated for the same access:

- The "type of number" field shall be coded "subscriber number" and the full ISDN subscriber number shall be sent.

In case DDI is activated for the same access:

- The "type of number" field shall be coded "unknown" and only the extension number of the calling party shall be sent. The network then completes the calling party number by adding the national number of the access to the calling party number information element.

subclause 9.3.1

Networks in Finland may not accept a full ISDN number in a Calling party number information element with the addition of a prefix or escape digits to the number digits field and the type of number field set to "unknown".

subclause 9.5.1 and Table 1, NOTE 7

The coding of the calling party information element sent by the destination local exchange:

- The "numbering plan identification" field shall be coded "ISDN/Telephony numbering plan".
- The "type of number" field shall be coded "unknown", and the number is organized according to the network dialling plan.

subclause 9.5.1

add a new national NOTE 3

If presentation is restricted but the called user has the "override" category (organisations authorized to have "override" category are defined by national regulations) marked in the destination local exchange, the network shall include the calling party number information element, and calling party subaddress information element if the subaddress was supplied by the calling user, in the SETUP message. In this case, the presentation and screening indicators shall be passed transparently to the called user.

clause 11

The following option is according to the network rules and operations in Finland:

- The network shall send the Calling party number information element according to subclause 9.5.1, fifth paragraph and shall include no Calling party subaddress information element.

Annex B

The two Calling party number information elements delivery option is applicable in Finland.

#### 8.4.2 CLIR

The DSS1 protocol (stage 3 description) for the CLIR supplementary service is contained in the standard SFS-EN 300 093-1. The following gives the recommended guidelines for the implementation of CLIR supplementary service in the Finnish networks

##### clause 11

On calls to or via non-ISDNs, the originating network may restrict any information identifying the calling user from being forwarded to the destination network when the CLIR supplementary service is applicable.

## **9 CONNECTED LINE IDENTIFICATION PRESENTATION/RESTRICTION (COLP/COLR)**

### **9.1 Definition**

The COLP supplementary service provides the calling party with the possibility to receive identification of the connected party.

The COLR supplementary service enables the connected party to prevent presentation of its ISDN number to the calling party.

### **9.2 Service description**

#### **9.2.1 COLP**

The service description (stage 1 description) for the COLP supplementary service is contained in the standard SFS-ETS 300 094. The following gives the recommended guidelines for the implementation of the COLP supplementary service in the Finnish networks

subclauses 6.1, 6.2.3.1, 7.2, 8.9 and 8.13

A special arrangement for not screening the user provided number may be applied in Finland.

subclause 7.1

The use of the COLP supplementary service can be guaranteed only when the call is end-to-end ISDN.

subclauses 8.5.4 and 8.10

Technical capabilities to provide override category service have to be available in the Finnish ISDN.

#### **9.2.2 COLR**

The service description (stage 1 description) for the COLR supplementary service is contained in the standard SFS-ETS 300 095. The following gives the recommended guidelines for the implementation of COLR supplementary service in the Finnish networks

clause 3 and subclauses 6.2.3.2, 8.5.3 and 8.10

Technical capabilities to provide override category service have to be available in the Finnish ISDN.

subclause 6.1

Both subscription options, permanent mode and temporary mode (defaults: presentation restricted and presentation not restricted), are offered.

subclause 7.1

Destination network in Finland may restrict any information identifying the connected party from being returned to the originating network when the COLR supplementary service has been invoked.

### **9.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the COLP and COLR supplementary services are contained in the standard SFS-ETS 300 096. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **9.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

#### 9.4.1 COLP

The DSS1 protocol (stage 3 description) for the COLP supplementary service is contained in the standard SFS-EN 300 097-1. The following gives the recommended guidelines for the implementation of the COLP supplementary service in the Finnish networks

subclauses 6.3 and 9.4

A special arrangement for not screening the user provided number may be applied in Finland.

subclause 9.2.1

It is recommended for the coding of the connected party information element sent by the connected user:

- The "numbering plan identification" field shall be coded "ISDN/Telephony numbering plan".
- The "type of number" field shall be coded "subscriber number" and the full ISDN subscriber number shall be sent.

subclause 9.3.1

Networks in Finland may not accept a full ISDN number in a Connected party number information element with the addition of a prefix or escape digits to the number digits field and the type of number field set to "unknown".

subclause 9.5.1 and Table 1, NOTE 7

The coding of the connected party information element sent by the originating local exchange:

- The "numbering plan identification" field shall be coded "ISDN/Telephony numbering plan".
- The "type of number" field shall be coded "unknown", and the number is organized according to the network dialling plan.

#### 9.4.2 COLR

The DSS1 protocol (stage 3 description) for the COLR supplementary service is contained in the standard SFS-EN 300 098-1. The following gives the recommended guidelines for the implementation of the COLR supplementary service in the Finnish networks

##### clause 11

On calls to or via non-ISDNs, the destination network may restrict any information identifying the connected user from being returned to the originating network when the COLR supplementary service is applicable.

## **10 MALICIOUS CALL IDENTIFICATION (MCID)**

### **10.1 Definition**

The MCID supplementary service enables a user to request that the source of an incoming call is identified and registered by the network.

### **10.2 Service description**

The service description (stage 1 description) for the MCID supplementary service is contained in the standard SFS-ETS 300 128. The following gives the recommended guidelines for the implementation of the MCID supplementary service in the Finnish networks

clause 5

The network will support the registration of calling party sub-address.

clause 5 and subclauses 6.1 and 6.2.3

The network will not support the automatic invocation of the service on unanswered calls.

subclause 6.2.3

The call will continue to be presented for 30 seconds after the calling user has cleared in order to enable the called user to accept the call and invoke the MCID supplementary service.

subclause 7.1

When interworking between the PSTN and the ISDN occurs and if the number of the calling user is not available, the network will support the option of registering information about the routing of the call.

The option in the NOTE is not supported.

subclause 8.9

The network will not provide the service for specific ISDN numbers forming part of the DDI supplementary service.

subclauses 8.10.1-8.10.4

The network will support the registration of the last diverting user.

subclause 8.11

The network will not support the registration of the called freephone number.

### **10.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the MCID supplementary service are contained in the standard SFS-ETS 300 129. The stage 2

description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

#### **10.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the MCID supplementary service is contained in the standard SFS-EN 300 130-1. The following gives the recommended guidelines for the implementation of the MCID supplementary service in the Finnish networks

clause 3

The call information shall include the calling party subaddress, if provided by the calling user.

subclause 9.2.2

If MCID is activated and DISCONNECT request is received from originating side at the destination interface in call states N6, N25, N9, N7 or N8, the timer T\_MCID\_FIN shall be started and the DISCONNECT request shall be discarded at the destination interface. At the expiry of the timer T\_MCID\_FIN the call shall be cleared with the cause value #102.

The network stops the T\_MCID\_FIN when the CONNECT message is received from the called user and sends DISCONNECT to the called user. Further procedure is as described in EN 300 130-1.

NOTE: The call shall be handled as a non-answered call (not charged) even if the called party enters the state N10.

Timer. T\_MCID\_FIN

Time-out value: 30 s

State of call: Call Present, Overlap receiving, Incoming call proceeding, Call received or Connect request

Cause for start: DISCONNECT request received from originating side

Normal stop: Timeout or CONNECT message received

At the first expiry: Clear the call with cause value #102

At the second expiry: Timer is not restarted

Cross reference: Recommended when MCID implemented

## **11 CLOSED USER GROUP (CUG)**

### **11.1 Definition**

The CUG supplementary service enables users to form groups to and from which access is restricted. A specific user may be a member of one or more closed user groups. Members of a specific closed user group can communicate among themselves but not, in general, with users outside the group.

### **11.2 Service description**

The service description (stage 1 description) for the CUG supplementary service is contained in the standard SFS-ETS 300 136. The following gives the recommended guidelines for the implementation of the CUG supplementary service in the Finnish networks

subclause 6.1

The maximum number of closed user groups which can be allocated to an individual user is 100.

All the subscription options defined in this subclause are supported.

### **11.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the CUG supplementary service are contained in the standard SFS-ETS 300 137. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **11.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the CUG supplementary service is contained in the standard SFS-EN 300 138-1. The following gives the recommended guidelines for the implementation of the CUG supplementary service in the Finnish networks

subclause 6.1

All the subscription options defined in this subclause are supported.

subclause 9.2.4.1 b)

The return error component shall be retained along with the SFS-ETS 300 403-1 cause.

□

## **12 CALL HOLD (HOLD)**

### **12.1 Definition**

The HOLD supplementary service allows a user to interrupt communications on an existing call and then subsequently, if desired, re-establish communications.

### **12.2 Service description**

The service description (stage 1 description) for the HOLD supplementary service is contained in the standard SFS-ETS 300 139. The following gives the recommended guidelines for the implementation of the HOLD supplementary service in the Finnish networks

clause 5

The HOLD supplementary service on the primary rate access is supported.

subclause 6.2.3.1

The network is not required to support the option: A call can be placed on hold after the call has been offered to the called user.

The sending of notifications to the remote user is supported.

subclause 6.2.3.2

The sending of notifications to the remote user is supported.

subclause 7.1

**NOTE:** If a remote user is a PSTN user, the notifications about the hold request or retrieve request of the call to that user are not supported. The last sentence of the NOTE is not applicable.

### **12.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the HOLD supplementary service are contained in the standard SFS-ETS 300 140. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **12.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the HOLD supplementary service is contained in the standard SFS-EN 300 141-1. The following gives the recommended guidelines for the implementation of the HOLD supplementary service in the Finnish networks

clause 9 and subclauses 9.1.1, 9.2.1 and 9.4.1

The user A at the originating side can not hold a call in the Call Delivered state (U4).

## **13 MEET-ME CONFERENCE (MMC)**

### **13.1 Definition**

The Meet-Me Conference supplementary service enables a user to arrange for a call between more than two participants. During the period the conference is active, participants use a special number to access the conference.

### **13.2 Service description**

The service description (stage 1 description) for the MMC supplementary service is contained in the standard SFS-ETS 300 164. The following gives the recommended guidelines for the implementation of the MMC supplementary service in the Finnish networks

#### subclause 6.2.1.3

The maximum number of simultaneous participants in a conference is 16.

The temporary allocation of the supplementary service "Closed User Group without incoming access" to the special number is supported.

#### subclause 6.2.3.4

An operator connection at any time to the conference in progress or individually to each participant for administrative reasons is supported.

#### subclause 8.4

Transferring a meet-me conference connection to another user is not prevented.

#### subclause 8.8.1

Adding a meet-me conference connection to an add-on conference is not prevented.

#### subclause 8.16

Joining a meet-me conference call with another call into a three-way conversation is not prevented.

### **13.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the MMC supplementary service are contained in the standard SFS-ETS 300 165. The stage 2 description can be taken as informative. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 description.

### **13.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The individual calls in an MMC are each basic calls with no special signalling functions, therefore no stage three standard is provided.

## 14 ADVICE OF CHARGE (AOC)

### 14.1 Definition

Advice of Charge (AOC) is a group of supplementary services allowing the served user to be informed of usage-based charging information.

The AOC group of supplementary services include the following:

AOC-S	Charging information at call set-up time;
AOC-D	Charging information during the call;
AOC-E	Charging information at the end of a call.

### 14.2 Service description

#### 14.2.1 AOC-S

The service description (stage 1 description) for the AOC-S supplementary service is contained in the standard SFS-ETS 300 178. The following gives the recommended guidelines for the implementation of the AOC-S supplementary service in the Finnish networks

clause 5

The AOC-S supplementary service is applicable only in relation to time tariff setting at call establishment and time tariff changes.

subclause 8.8.1.1

Only part of the charging information, in conjunction with the conference call, add-on supplementary service, can be given.

subclause 8.16

No charging information for the use of the Three-Party supplementary service can be sent to the served user.

#### 14.2.2 AOC-D

The service description (stage 1 description) for the AOC-D supplementary service is contained in the standard SFS-ETS 300 179. The following gives the recommended guidelines for the implementation of the AOC-D supplementary service in the Finnish networks

subclause 6.2.3

The value of the timer t shall be 10 seconds.

subclause 8.8.1.1

Only part of the charging information, in conjunction with the conference call, add-on supplementary service, can be given.

## subclause 8.15

The cumulative charging information is given in all the described cases: at the suspension request, on the resumption of the call, and if the call is terminated while the call is suspended at the calling user's access and the calling user attempts to resume the call within the timer.

## subclause 8.16

No charging information for the use of the Three-Party supplementary service can be sent to the served user.

## Annex A, subclause A.2.1

The Finnish networks may not include some charges, e.g. charges incurred by the use of some supplementary services, in the subtotal charges and/or the total charges.

## Annex A, clause A.3

Charging information (AOC) can be given in currency units or metering pulses according to access arrangements.

## 14.2.3 AOC-E

The service description (stage 1 description) for the AOC-E supplementary service is contained in the standard SFS-ETS 300 180. The following gives the recommended guidelines for the implementation of the AOC-E supplementary service in the Finnish networks

## subclause 8.4

After a call has been transferred and the transferring user is charged for that transferred part of the call, and the AOC-E supplementary service has been invoked for that call, then the charging information shall be sent to the transferring user when the call is terminated.

## subclause 8.8.1.1

Only part of the charging information, in conjunction with the conference call, add-on supplementary service, can be given.

## subclauses 8.10.1 - 8.10.3

## Forwarding user:

When a call is forwarded and the forwarding user is charged for the forwarded part of the call, then the charging information shall be sent 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".

## subclause 8.10.4

## Deflecting user:

When a call is deflected and the deflecting user is charged for the deflected part of the call, then the charging information shall be sent 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".

#### subclause 8.15

If the call is terminated 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 advice of charge information shall be given to that user at the time of the resume attempt.

#### subclause 8.16

No charging information for the use of the Three-Party supplementary service can be sent to the served user.

#### Annex A, subclause A.2.1

The Finnish networks may not include some charges, e.g. charges incurred by the use of some supplementary services, in the subtotal charges and/or the total charges.

#### Annex A, clause A.3

Charging information (AOC) can be given in currency units or metering pulses according to access arrangements.

### 14.3 Functional capabilities and information flows

The functional capabilities and information flows (stage 2 description) for the AOC supplementary service is contained in the standard SFS-ETS 300 181. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### 14.4 Digital Subscriber Signalling System No. one (DSS1) protocol

The DSS1 protocol (stage 3 description) for the AOC supplementary service is contained in the standard SFS-EN 300 182-1. The following gives the recommended guidelines for the implementation of the AOC supplementary service in the Finnish networks

#### subclause 5.1

The following subscription options (5.1, table 1) are applicable:

Table 1:

Subscription option	Values:
Provision of service	For all calls; On request on a per call basis.

#### subclause 5.2 and figures 6,7 and 9

If the served user suspends a call, then the originating network shall retain the charging information for the suspended call as long as the network retains the call identity of the suspended call of the served user.

subclause 7.2

The IA5\_string used in the Currency coding is defined in the GFI9303, part IV, Appendix A.

subclauses 8.3.2.1 and 8.4.2.1

If the AOC-D supplementary service is provided, the network shall give charging information either based on currency units or on charging units. Only the charged items that affect the charging applied to that call shall be covered.

## **15 CONFERENCE CALL ADD-ON (CONF)**

### **15.1 Definition**

The CONF supplementary service enables a user to participate in, and control, a simultaneous communication involving a number of users.

### **15.2 Service description**

The service description (stage 1 description) for the CONF supplementary service is contained in the standard SFS-ETS 300 183. The following gives the recommended guidelines for the implementation of the CONF supplementary service in the Finnish networks

clause 5 and subclause 6.2.3.2

The served user who has an active call with a user is allowed to invoke the conference call.

subclause 6.1

The maximum number of parties allowed in a conference is 16.

subclause 8.1.1.1

The advice of charge; charging information at call setup time supplementary service is not supported in conjunction with the CONF supplementary service.

subclause 8.1.2.1

The advice of charge; charging information during the call supplementary service is not supported in conjunction with the CONF supplementary service.

subclause 8.1.3.1

The advice of charge; charging information at the end of a call supplementary service is not supported in conjunction with the CONF supplementary service.

subclause 8.8.1

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.

subclause 8.8.2

Adding a (meet me) conference connection to a (add on) conference is not prevented.

subclause 8.16

A user in a three-way conversation, but who is not the served user of the three party supplementary service, is not prevented from adding the connection to the three-way conversation to a conference which is controlled by that user.

### **15.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the CONF supplementary service are contained in the standard SFS-ETS 300 184. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **15.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the CONF supplementary service is contained in the standard SFS-EN 300 185-1. The following gives the recommended guidelines for the implementation of the CONF supplementary service in the Finnish networks.

clause 5

The CONF supplementary service can be invoked from the Null call state (N0, U0) and additionally from an existing call in the Active call state (N10, U10).

subclause 9.2.2.1

The network will accept a request for a conference from an active call.

## **16 THREE-PARTY (3PTY)**

### **16.1 Definition**

The 3PTY supplementary service enables a user to establish, participate in and control, a three-way conversation, i.e. a simultaneous communication involving the served user and two remote parties.

### **16.2 Service description**

The service description (stage 1 description) for the 3PTY supplementary service is contained in the standard SFS-ETS 300 186. The following gives the recommended guidelines for the implementation of the 3PTY supplementary service in the Finnish networks

subclause 6.2.3.1

Establishing a three-way conversation that would include calls which are not intended for speech communication is not prevented.

subclauses 8.1.1, 8.1.2 and 8.1.3

No charging information for the use of the Three-Party supplementary service can be sent to the served user.

subclause 8.8.1

A user in a three-way conversation, 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.

subclause 8.8.2

Joining a meet-me conference call with another call into three-way conversation is not prevented.

subclause 8.16

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.

### **16.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the 3PTY supplementary service is contained in the standard SFS-ETS 300 187. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **16.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the 3PTY supplementary service is contained in the standard SFS-EN 300 188-1. The 3PTY supplementary service is implemented in the Finnish networks without national definitions or exceptions.

## **17 CALL DIVERSION (CFB, CFU, CFNR, SCFU, SCFB, SCFNR, CD)**

### **17.1 Definition**

The Diversion supplementary services comprise the following services:

- Call Forwarding Busy (CFB)
- Call Forwarding Unconditional (CFU)
- Call Forwarding No Reply (CFNR)
- Selective Call Forwarding Unconditional (SCFU)
- Selective Call Forwarding Busy (SCFB)
- Selective Call Forwarding No Reply (SCFNR)
- Call Deflection (CD)

The CFB supplementary service enables a served user to have the network redirect to another user calls which are addressed to the served user's ISDN number and meet busy.

The CFU supplementary service enables a served user to have the network redirect to another user calls which are addressed to the served user's ISDN number.

The CFNR supplementary service enables a served user to have the network redirect to another user calls which are addressed to the served user's ISDN number, and for which the connection is not established within a defined period of time.

The SCF supplementary service enables a served user to specify the forwarding of their incoming calls to a selected destination subject to certain conditions or circumstances e.g. the calling line identity of the calling user. The SCF supplementary service is an incoming call management feature to the defined Call Forwarding supplementary services that allows the served user to define one or more screening lists.

The CD supplementary service enables the served user to respond to an incoming call by requesting redirection of that call to another user.

### **17.2 Service description**

#### **17.2.1 CFB**

The service description (stage 1 description) for the CFB supplementary service is contained in the standard SFS-ETS 300 199. The following gives the recommended guidelines for the implementation of the CFB supplementary service in the Finnish networks

clause 5 and subclause 6.2.3

The maximum number for call diversions is 5 for each call.

#### subclause 7.1

Once a call has been forwarded to a non-ISDN network the indication call forwarded is used.

Once a call arrives at an ISDN network from a non-ISDN network with the indication forwarded call the call forwarding counter will be set to one, if no other value for the call forwarding counter is supplied.

#### subclause 8.7

In case of the arrival of the completion of calls to busy subscriber call after the CFB supplementary service has been activated, the call shall be forwarded as a normal call.

#### subclause 8.11

If the freephone service is implemented according to SFS-ETS 300 208 the following service provider option is used:

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.

#### subclause 8.17

Forwarding any UUI or request for UUS may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

#### 17.2.2 CFU

The service description (stage 1 description) for the CFU supplementary service is contained in the standard SFS-ETS 300 200. The following gives the recommended guidelines for the implementation of the CFU supplementary service in the Finnish networks

#### clause 5 and subclause 6.2.3

The maximum number for call diversions is 5 for each call.

#### subclause 7.1

Once a call has been forwarded to a non-ISDN network the indication call forwarded is used.

Once a call arrives at an ISDN network from a non-ISDN network with the indication forwarded call the call forwarding counter will be set to one, if no other value for the call forwarding counter is supplied.

#### subclause 8.11

If the freephone service is implemented according to SFS-ETS 300 208 the following service provider option is used:

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.

#### subclause 8.17

Forwarding any UUI or request for UUS may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

#### 17.2.3 CFNR

The service description (stage 1 description) for the CFNR supplementary service is contained in the standard SFS-EN 300 201. The following gives the recommended guidelines for the implementation of the CFNR supplementary service in the Finnish networks

#### clause 4 and subclause 5.2.3

The maximum number for call diversions is 5 for each call.

#### subclause 5.1

The value 15...30 seconds for the no reply timer will be used.

The subscriber procedure, by which the value of the no reply timer can be changed by the served user, is not supported.

#### subclauses 5.2.3.1 and 5.3.3

The method b) is used. The call to the served user will be cleared when the CFNR supplementary service is invoked. If the forwarded call cannot be completed the call shall be terminated.

#### subclause 6.1

Once a call has been forwarded to a non-ISDN network the indication call forwarded is used.

Once a call arrives at an ISDN network from a non-ISDN network with the indication forwarded call the call forwarding counter will be set to one, if no other value for the call forwarding counter is supplied.

#### subclause 7.11

If the freephone service is implemented according to SFS-ETS 300 208 the following service provider option is used:

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.

#### subclause 7.17

Forwarding any UUI or request for UUS may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

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, the request for the call forwarding no reply supplementary service will be rejected and the call shall not be forwarded.

#### Annex A

The following service provider option in NOTE is supported: the request for the call forwarding no reply supplementary service will be rejected and the call will not be forwarded.

#### 17.2.4 CD

The service description (stage 1 description) for the CD supplementary service is contained in the standard SFS-ETS 300 202. The following gives the recommended guidelines for the implementation of the CD supplementary service in the Finnish networks

clause 5 and subclause 6.2.3

The maximum number for call diversions is 5 for each call.

subclauses 6.2.3.1 and 6.3.3

The method b) is used. The call to the served user will be cleared on acceptance of the call deflection request. If the call to the deflected-to user cannot be completed the call shall be terminated.

subclause 7.1

Once a call has been forwarded to a non-ISDN network the indication call forwarded is used.

Once a call arrives at an ISDN network from a non-ISDN network with the indication forwarded call the call forwarding counter will be set to one, if no other value for the call forwarding counter is supplied.

subclause 8.11

If the freephone service is implemented according to SFS-ETS 300 208 the following service provider option is used:

Freephone calls which are allocated to a user shall be subject to the CD 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.

subclause 8.17

Forwarding any UUI or request for UUS may be restricted to deflecting users who subscribe to the relevant parts of the UUS supplementary service.

subclause 8.17.2

Forwarding any UUI or request for UUS may be restricted to deflecting users who subscribe to the relevant parts of the UUS supplementary service.

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, the request for the call deflection supplementary service will be rejected and the call shall not be deflected.

## Annex A

The following service provider option in NOTE is supported: the request for the call deflection supplementary service will be rejected and the call will not be deflected.

### 17.2.5 SCF

The service description (stage 1 description) for the SCF supplementary service is contained in the standard SFS-EN 301 133. The following gives the recommended guidelines for the implementation of the SCF supplementary service in the Finnish networks

#### subclause 5.1

The service can be offered with the following subscription options giving:

- the number of screening lists per access / number (maximum value 15);
- the number of entries per screening list (maximum value 20).

#### subclause 5.2.1.3

The served user does not need to be given the option to modify, add or delete entries to the screening list or add or delete the lists.

## 17.3 Functional capabilities and information flows

### 17.3.1 CFB

The functional capabilities and information flows (stage 2 description) for the CFB supplementary service is contained in the standard SFS-ETS 300 203. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### 17.3.2 CFU

The functional capabilities and information flows (stage 2 description) for the CFU supplementary service is contained in the standard SFS-ETS 300 204. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### 17.3.3 CFNR

The functional capabilities and information flows (stage 2 description) for the CFNR supplementary service is contained in the standard SFS-ETS 300 205. The stage 2

description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

#### 17.3.4 CD

The functional capabilities and information flows (stage 2 description) for the CD supplementary service is contained in the standard SFS-ETS 300 206. The stage 2 description can be taken as informative. The implementation in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

#### 17.3.5 SCF

The functional capabilities and information flows (stage 2 description) for the SCF supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **17.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the Diversion supplementary services is contained in the standard SFS-EN 300 207-1. The following gives the recommended guidelines for the implementation of the Diversion supplementary services in the Finnish networks

#### clause 5

The diversion supplementary services are provided both on a per ISDN number basis and on the whole access base.

The call forwarding services may be subscribed to for each basic service to which the user(s) of the number subscribes.

#### subclause 6.1

The subscription options listed in the table 1 are provided.

In the table 2 the following network provider option values are applicable

- served user call is cleared on invocation of diversion
- maximum number of diversions for a single call is 5
- call forwarding on no reply timer value is 15-30 s
- the subscriber procedure, by which the value of the no reply timer can be changed by the served user, is not supported
- partial rerouting is provided at the T reference point
- the call-by-call indication overrides the value of the subscription option "Diverting number is released to the diverted-to user"

- maximum number of active screening lists per access/number/DDI range is 15
- maximum number of entries per screening list is 20

#### subclause 9.1.1.1

The forwarding exchange shall verify the forwarded-to number only for a limited set of numbers, the minimum requirement is that emergency numbers are not accepted as forwarded-to numbers

#### subclause 9.1.1.3

The network shall verify the forwarded-to number only for a limited set of numbers, the minimum requirement is that emergency numbers are not accepted as forwarded-to numbers

#### subclauses 9.2.3.1, 9.2.5.1

The type of the number shall be set to "unknown" and the number is organised according to the network dialling plan.

#### subclause 9.2.4.4.1 and clause 13

The value of T-CFNR is 15-30 s.

The subscriber procedure, by which the value of the no reply timer can be changed by the served user, is not supported.

#### subclauses 9.2.4.4.1, 9.2.4.5.1

The network provider option "served user call retention on invocation of diversion" is "clear call on invocation"

#### subclause 9.2.4.5.1

The call-by-call indication overrides the value of the subscription option "Diverting number is released to the diverted-to user"

#### subclauses 10.4.1, 10.5.1

If a diverted call is presented from a private network to the public network, then the public network is required to check the redirecting number from the SETUP message (divertingNr parameter) or from the FACILITY message (lastReroutingNr parameter). The number shall be checked against the numbering space of the private network. In case of a mismatch the redirecting number shall be replaced by the default number associated with the private network.

It is recommended for the coding of the redirecting number information sent by the private network:

- The "numbering plan identification" field shall be coded "ISDN/Telephony numbering plan".

In case DDI is not activated for the same access:

- The "type of number" field shall be coded "subscriber number" and the full ISDN subscriber number shall be sent.

In case DDI is activated for the same access:

- The "type of number" field shall be coded "unknown" and only the extension number of the redirecting number shall be sent. The network then completes the redirecting number by adding the national number of the access to the redirecting number information.

subclause 10.5.1

The public network shall clear the call towards the private network on acceptance of the call rerouting request.

## **18 FREEPHONE (FPH)**

### **18.1 Definition**

The FPH supplementary service allows the served user having one or several installations to be reached from all or part of the country, or internationally as appropriate, with a Freephone number and to be charged for this kind of call.

### **18.2 Service description**

The service description (stage 1 description) for the FPH supplementary service is contained in the standard SFS-ETS 300 208. No national definitions or exceptions are specified.

### **18.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the FPH supplementary service is contained in the technical report ETR 209. The stage 2 description can be taken as informative.

### **18.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the FPH supplementary service is contained in the standard SFS-EN 300 210-1. No national definitions or exceptions are specified.

## 19 USER-TO-USER SIGNALLING (UUS)

### 19.1 Definition

The UUS supplementary service enables a user to send/receive a limited amount of information to/from another user over the signalling channel in association with a call to the other user. This information shall be passed transparently (i.e. without modification of contents) through the network. The network shall not interpret or act upon this information.

The user can transfer UUI in different phases of the call depending on the service(s) to which the user subscribes. These services are:

- a) Service 1 - User-to-user information exchanged during the set-up and clearing phases of a call/connection, by transporting the User-to-user information element within call/connection control messages
- b) Service 2 - User-to user information exchanged from the sender's point of view during call/connection establishment, between the ALERTING and CONNECT messages, within USER INFORMATION messages; and
- c) Service 3 - User-to-user information exchanged while a call/connection is in the Active state, within USER INFORMATION messages.

### 19.2 Service description

The service description (stage 1 description) for the UUS supplementary service is contained in the standard SFS-ETS 300 284. The following gives the recommended guidelines for the implementation of the UUS supplementary service in the Finnish networks

clause 5

Service provider option for service 2, UUI sent by the calling user prior to receiving the acceptance of the call by the called user may be delivered to the called user after the call has been established, is supported.

Note on limitation of UUI to only 32 octets during an interim period of time is not applicable for the Finnish network.

subclause 6.1

Service provider option about provision of one or any combination of services is supported.

NOTE: Services UUS2 and UUS3 can be taken into use provided that the operators involved have agreed upon it (SFS 5868, subclause 4.17).

Service provider option about withdrawal separately per service is supported.

subclause 6.2.1.3

Service provider option about activation of service 3 by the called user after the connection has been established is supported.

subclause 6.3.3

In case of excessive UUI length the sending user shall be informed.

clause 7

Service provider option about explicit acceptance, if the remote user replies with UUI to explicit request sent to an ISDN only supporting implicit requests, is supported.

subclauses 8.10.1, 8.10.2, 8.10.3 and 8.10.4

Forwarding any UUI or request for UUS may be restricted to forwarding users who subscribe to the relevant parts of the UUS supplementary service.

subclause 8.10.3

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, the request for the call forwarding no reply supplementary service will be rejected and the call shall not be forwarded.

subclause 8.10.4.2

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, the request for the call deflection supplementary service will be rejected and the call shall not be deflected.

Annex A

The following service provider option in NOTE is supported: the request for the call forwarding no reply or the call deflection supplementary service will be rejected and the call will not be forwarded or deflected.

### **19.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the UUS supplementary service are contained in the technical report ETR 285. The stage 2 description can be taken as informative. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **19.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the UUS supplementary service is contained in the standard SFS-EN 300 286-1. The following gives the recommended guidelines for the implementation of the UUS supplementary service in Finnish networks

subclause 6.1

Any combination of the following possibilities can be provided separately or globally:

- service 1 implicit, or service 1 implicit together with service 1 explicit;
- service 2;
- service 3.

subclause 9.2.2.1 and 9.2.2.2

The calling network shall accept the first two USER INFORMATION messages from the calling user and the calling network shall deliver them to the called user after the calling and called network have entered the Active (N10) call state.

subclause 9.2.2.2

The calling network shall send a STATUS message with cause #43 to the calling user when discarding the USER INFORMATION message.

The called network shall send a STATUS message with cause #43 to the called user when discarding the USER INFORMATION message.

subclause 9.3.1.2.1

During the Active (U10) call state, the calling user or the called user can activate service 3.

subclause 9.3.2.2

The sending network shall send a STATUS message with cause #43 to the sending user when discarding the USER INFORMATION message.

## **20 EXPLICIT CALL TRANSFER (ECT)**

### **20.1 Definition**

The ECT supplementary service enables a user (user A) to transform two of that user's calls (an active call and a held call), each of which can be an incoming call or an outgoing call, into a new call between user B and user C.

### **20.2 Service description**

The service description (stage 1 description) for the ECT supplementary service is contained in the standard SFS-ETS 300 367. The following gives the recommended guidelines for the implementation of the ECT supplementary service in the Finnish networks

subclause 6.2.3

The service provider option, that the ECT supplementary service can be invoked after user C has been informed of the call (i.e. an outgoing call from A to user C, where the connection has not yet been established), is supported.

subclause 8.1.3

When the call is transferred and the transferring user is charged for the transferred part of the call, then the charging information shall be sent to the transferring user when the transferred call is terminated provided that the served user has activated the AOC-E supplementary service for that call.

### **20.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the ECT supplementary service are contained in the standard SFS-ETS 300 368. The stage 2 description can be taken as informative. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **20.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the ECT supplementary service is contained in the standard SFS-EN 300 369-1. The following gives the recommended guidelines for the implementation of the ECT supplementary service in Finnish networks

clause 5 and subclause 9.2.5

The network option to allow the invocation of the ECT service when one of the calls is an outgoing call in the Call delivered (alerting) state is supported.

subclause 9.2

The explicit linkage procedure is supported.

subclause 10.3

The “mechanism to avoid looping of uncontrolled circuits” is supported by the public network.

If the loop prevention procedure cannot decide whether the resulting connection would result in a loop, the call transfer is completed.

The time supervision for the loop prevention procedure is 2 seconds.

## **21 COMPLETION OF CALLS TO BUSY SUBSCRIBER (CCBS)**

### **21.1 Definition**

The CCBS supplementary service enables user A, encountering a busy destination B, to have the call completed without having to make a new call attempt when the destination B becomes not busy.

### **21.2 Service description**

The service description (stage 1 description) for the CCBS supplementary service is contained in the standard SFS-EN 300 357. The following gives the recommended guidelines for the implementation of the CCBS supplementary service in the Finnish networks

subclause 5.1

The subscription option of recall mode described in Table 1 is supported by the network.

subclause 5.2.1.1

The value of the CCBS service duration timer is 45 minutes.

User A can have five CCBS requests outstanding.

Network option on CCBS request with the same service requirements as an outstanding request is not supported, user A is informed that the request has not been accepted.

Destination B can have five incoming CCBS requests outstanding.

The option of reducing the destination B CCBS queue size for individual users is supported by the network.

subclause 5.3.3.1 b)

If destination B is again busy when the network attempts to make the CCBS call, then the original CCBS request shall retain its position in the queue, and the CCBS service duration timer shall not be restarted. If user A attempts to activate the CCBS supplementary service again, this shall be treated as described in subclause 6.3.3.2 c).

subclause 5.3.3.2 c)

The network shall check if an identical request already exists. If so, the original request shall be retained and the current request discarded and user A shall be informed that the request has not been accepted.

subclause 5.3.3.3

Reducing the probability of the network congestion on the CCBS call is not supported by the network.

## subclause 7.10.2

If user B has activated the call forwarding busy supplementary service and is busy upon the arrival of a call resulting from the CCBS supplementary service, then the call shall be forwarded as a normal call.

## subclause 7.13

The maximum number of entries in the combined destination B CCBS queue for the access is not limited by the network.

## Annex A

The network does not take any measures to identify if there is a compatible terminal present at destination B.

**21.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the CCBS supplementary service are contained in the standard SFS-ETS 300 358. The stage 2 description can be taken as informative. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

**21.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the CCBS supplementary service is contained in the standard SFS-EN 300 359-1. The following gives the recommended guidelines for the implementation of the CCBS supplementary service in Finnish networks.

## subclause 6.1

The following subscription options (6.1, table 1) are applicable:

Table 1:

Subscription option	Values:
Recall mode	Global recall Specific recall

The following network options (in the table 2) are applicable

Table 2:

Network option	Values:
Check for identical calls	Yes
CCBS request retention	Yes

## subclause 9.5.2.1

The limit of the number of CCBS requests to the given destination in the Finnish network is 5.

clause 13

CCBS service duration timer T-CCBS2:

the maximum time the service will be active within the network. The value of the timer is 45 minutes.

## 22 MESSAGE WAITING INDICATION (MWI)

### 22.1 Definition

The MWI supplementary service enables the network, upon request of a controlling user to indicate to the receiving user, that there is at least one message waiting.

NOTE: The MWI supplementary service is typically used between a mailbox service provider (controlling user) and a user (receiving user) of the mailbox service provided.

### 22.2 Service description

The service description (stage 1 description) for the MWI supplementary service is contained in the standard SFS-EN 300 650. The following gives the recommended guidelines for the implementation of the MWI supplementary service in the Finnish networks

subclause 5.1

The network option, where the receiving user can have a subscription option to register the controlling user numbers that can activate and deactivate the MWI supplementary service, is supported.

The maximum number of ISDN numbers that can be registered for a receiving user is 10.

Maximum number of active instances per receiving user is 10.

subclause 5.2.3

The network option to provide additional information during deferred invocation is supported.

### 22.3 Functional capabilities and information flows

The stage 2 aspects of the MWI supplementary service have not been specified. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### 22.4 Digital Subscriber Signalling System No. one (DSS1) protocol

The DSS1 protocol (stage 3 description) for the MWI supplementary service is contained in the standard SFS-EN 300 745-1. The following gives the recommended guidelines for the implementation of the MWI supplementary service in the Finnish networks.

subclause 6.1

The following subscription options (6.1, table 1) are applicable:

Network options	Values
Support of subscriber option for registration of the ISDN number(s) of the controlling user(s)	yes

Provide additional information during deferred invocation	no
Maximum number of controlling users' ISDN numbers registered by the network	10
Maximum number of active instances per receiving user	10

## 23 SECURITY TOOLS (SET)

### 23.1 Definition

The SET procedures allow a served user to be provided with a PIN. The PIN is used when accessing a telecommunication service to ensure that this service is used with an appropriate level of security. The served user can change the PIN at any time after initial provision.

### 23.2 Service description

The service description (stage 1 description) for the SET procedures for the use within ISDN telecommunications services from the user's point of view is contained in the standard SFS-EN 301 132. The following gives the recommended guidelines for the implementation of the SET supplementary service in the Finnish networks

subclause 5.1

The number of the alphanumerical characters of the PIN (Personal Identification Number) is recommended to be 4.

subclause 5.1.4.1

A registration procedure shall be blocked after three unsuccessful registration attempts (N=3).

subclause 5.2

Option selections in subclause 5.2 are for further study.

### 23.3 Functional capabilities and information flows

The functional capabilities and information flows (stage 2 description) for the MWI supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### 23.4 Digital Subscriber Signalling System No. one (DSS1) protocol

The DSS1 protocol (stage 3 description) for the SET procedures is contained in the standard SFS-EN 301 002-1. The following gives the recommended guidelines for the implementation of the SET procedures in the Finnish networks.

subclause 6.1

The following values are used in Finland for network options for the SET procedures

Network option	Value
Notification of possible fraudulent use	yes
Maximum number of PIN characters	4
Blocking limit N	3

## **24 OUTGOING CALL BARRING (OCB)**

### **24.1 Definition**

The outgoing call barring supplementary services comprise the following services:

- Outgoing Call Barring-Fixed (OCB-F) supplementary service;
- Outgoing Call Barring-User Controlled (OCB-UC) supplementary service.

The OCB-F supplementary service enables calls belonging to certain types to be rejected when they are originated by the served user. The served user's ability to receive incoming calls is unaffected by the OCB-F supplementary service. The OCB-F supplementary service operates according to the requirements specified by the user on provision and it cannot be activated or deactivated under the control of the user.

The OCB-UC supplementary service enables calls belonging to certain types to be rejected when they are originated by the served user. The served user's ability to receive incoming calls is unaffected by the OCB-UC supplementary service. The served user can select the barring program, activate and later deactivate it.

### **24.2 Service description**

#### **24.2.1 OCB-F**

The service description (stage 1 description) for the OCB-F supplementary service is contained in the standard SFS-EN 301 082. The following gives the recommended guidelines for the implementation of the OCB-F supplementary service in the Finnish networks

subclause 5.1

The OCB-F supplementary service can be provided on a per ISDN number basis.

At least 15 barring programs must be provided. The available barring programs shall comply with the regulation TAC 35B/1999 M "Barring Categories for Telecommunications" published by Telecommunications Administration Centre.

More than one barring program must be able to be active at a given time for each basic service.

The OCB-F does not need to be activated for specific period of the day or days of the week.

#### **24.2.2 OCB-UC**

The service description (stage 1 description) for the OCB-UC supplementary service is contained in the standard SFS-EN 301 084. The following gives the recommended guidelines for the implementation of the OCB-UC supplementary service in the Finnish networks

subclause 5.1

The OCB-UC supplementary service can be provided on a per ISDN number basis. At least 15 barring programs must be provided. The available barring programs shall comply with the regulation TAC 35B/1999 M "Barring Categories for Telecommunications" published by Telecommunications Administration Centre.

More than one barring program must be able to be active at a given time for each basic service.

When the OCB-UC supplementary service is provided on a per ISDN number basis, and more than one ISDN number is allocated to the served user's access, the served user can be given the capability to indicate whether activation or deactivation applies to an indicated number or to all ISDN numbers on the access.

#### subclause 5.2.2.1

The served user may indicate that the activation of the OCB-UC supplementary service shall apply for all ISDN numbers for which the OCB-UC supplementary service is subscribed to.

#### subclause 5.2.4

The user does not need to be provided with a per call procedure to make outgoing calls barred by the OCB-UC supplementary service without restrictions.

#### subclause 5.2.5

The served user may interrogate for all ISDN numbers in order to determine the status of the OCB-UC supplementary service.

### **24.3 Functional capabilities and information flows**

#### 24.3.1 OCB-F

The functional capabilities and information flows (stage 2 description) for the OCB-F supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

#### 24.3.2 OCB-UC

The functional capabilities and information flows (stage 2 description) for the OCB-UC supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **24.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the OCB supplementary service is contained in the standard SFS-EN 301 001-1. The following gives the recommended guidelines for the implementation of the OCB supplementary service in the Finnish networks.

subclause 5.1, 8.1.1, 8.1.2, 8.1.3 and 8.2.1, 9

The following subscription options (5.1, table 1) are applicable:

Table 1:

<b>Subscription option</b>	<b>Value</b>	<b>Applicability</b>
OCB provision on access/ number basis (note 1)	No Yes	OCB-UC and OCB-F
Activation, deactivation and interrogation for all ISDN numbers on the same access (in case of provision on a per ISDN number basis) (note 2)	No Yes	OCB-UC

NOTE 1: This option applies only if the value for the network option "OCB provision with relation to served user numbers" is "both".

NOTE 2: This option applies to all the instances of the supplementary service, subscribed to on the access of the served user.

clause 4 and subclauses 5.1, 8.1.1, 8.1.2, 8.1.3, 8.2.1 and 8.2.2

The following network options (5.1, table 2) are applicable:

Table 2:

<b>Network option</b>	<b>Value</b>	<b>Applicability</b>
Disabling procedure allowed	No	OCB-UC
	Yes	
Maximum number of barring programs (note)	1 to 256	OCB-UC and OCB-F
OCB provision with relation to basic services	for all subscribed basic services	OCB-UC and OCB-F
	for particular basic service(s)	
OCB provision with relation to served user numbers	on access basis	OCB-UC and OCB-F
	on ISDN number basis	
	both	
Multiple active barring programmes allowed	No	OCB-UC and OCB-F
	Yes	

NOTE: At least 15 barring programs must be provided.

## **25 COMPLETION OF CALLS ON NO REPLY (CCNR)**

### **25.1 Definition**

The CCNR supplementary service enables user A, encountering a destination B, which does not answer the call (No Reply), to have the call completed without having to make a new call attempt when the destination B becomes not busy after having initiated an activity .

### **25.2 Service description**

The service description (stage 1 description) for the CCNR supplementary service is contained in the standard SFS-EN 301 134 . The following gives the recommended guidelines for the implementation of the CCNR supplementary service in the Finnish networks

#### subclause 5.1

The subscription option of recall mode described in Table 1 is supported by the network.

#### subclause 5.2.1.1

The value of the CCNR service duration timer is 180 minutes.

User A can have five CCNR requests outstanding.

Network option on CCNR request with the same service requirements as an outstanding request is not supported, user A is informed that the request has not been accepted.

Destination B can have five incoming CCNR requests outstanding.

The option of reducing the destination B CCNR queue size for individual users is supported by the network.

#### subclause 5.3.3.1 b)

If destination B is busy when the network attempts to make the CCNR call, then the original CCNR request shall retain its position in the queue, and the CCNR service duration timer shall not be restarted. If user A attempts to activate the CCNR supplementary service again, this shall be treated as described in subclause 5.3.3.2 c).

#### subclause 5.3.3.2 c)

The network shall check if an identical request already exists. If so, the original request shall be retained and the current request discarded and user A shall be informed that the request has not been accepted.

#### subclause 7.10.3

If user B has activated the call forwarding on no reply supplementary service and does not answer the call (No Reply) upon the arrival of the CCNR call, then the call shall be forwarded as a normal call.

subclause 7.11

A request for the CCNR supplementary service on a call to a freephone number shall be rejected.

Freephone calls shall take precedence over requests for the CCNR supplementary service.

### 25.3 Functional capabilities and information flows

The functional capabilities and information flows (stage 2 description) for the CCNR supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### 25.4 Digital Subscriber Signalling System No. one (DSS1) protocol

The DSS1 protocol (stage 3 description) for the CCNR supplementary service is contained in the standard SFS-EN 301 065-1. The following gives the recommended guidelines for the implementation of the CCNR supplementary service in the Finnish networks.

subclause 6.1

The following subscription options (6.1, table 1) are applicable:

Table 1:

Subscription option	Values:
Recall mode	Global recall Specific recall

Reference in subclauses 9.1.1, 9.3.1.1, 9.3.2.1, 9.4.1.1, 9.4.6.1

The following network options (in the table 2) are applicable:

Table 2:

Network option	Values:
Check for identical calls	Yes
CCNR request retention	Yes

Reference in subclauses 9.1.2, 10.1.2.1, 10.2.2.1, 14: figures 8.3, 9.3, 11.3, 12.3, Annex A: figures A.1, A.3

subclause 9.5.2

The limit of the number of CCNR requests to the given destination in the Finnish network is 5.

clause 13

CCNR service duration timer T-CCNR2:

The maximum time the service will be active within the network. The value of the timer is 180 minutes.

## **26 LINE HUNTING (LH)**

### **26.1 Definition**

The LH supplementary service enables call to a single ISDN number to be offered to a free access in a group of accesses to which terminals are connected to an and-user's multiple access group (S/T reference point).

### **26.2 Service description**

The service description (stage 1 description) for the LH supplementary service is contained in the standard EN 301 479. No national definitions or exceptions are specified.

### **26.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the LH supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **26.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the LH supplementary service is contained in the standard SFS-EN 301 484-1. The following gives the recommended guidelines for the implementation of the CCNR supplementary service in the Finnish networks.

subclause 6.1

The network options in tables 1 and 2 are applicable, i.e. it is defined by the operator if it offers the service in primary rate access and if it uses sequential hunting or cyclic hunting as a selection method.

The subscription options in table 3 are applicable.

## **27 ANONYMOUS CALL REJECTION (ACR)**

### **27.1 Definition**

The Anonymous Call Rejection (ACR) supplementary service allows the served user to reject incoming calls from users or subscribers who have restricted the presentation of their calling line identity according to the CLIR supplementary service.

### **27.2 Service description**

The service description (stage 1 description) for the ACR supplementary service is contained in the standard EN 301 798. The following gives the recommended guidelines for the implementation of the PSTN ACR supplementary service in the Finnish networks

clause 1

The service is realized in Finland as a network based solution. The user based solution is also allowed as a supplementary solution.

### **27.3 Functional capabilities and information flows**

The functional capabilities and information flows (stage 2 description) for the ACR supplementary service has not been produced by ETSI. The implementation of this supplementary service in the Finnish networks should be based on the stage 1 and stage 3 descriptions.

### **27.4 Digital Subscriber Signalling System No. one (DSS1) protocol**

The DSS1 protocol (stage 3 description) for the ACR supplementary service has not been produced by ETSI. The DSS1 protocol specification for the service is included in the protocol specification of the CLIP service. The implementation (activation, deactivation, interrogation) is based on the keypad protocol.

**28 GENERIC FUNCTIONAL PROTOCOL (GFP)**

The DSS1 specification of the functional protocol (GFP) for the support of supplementary services is contained in the standard EN 300 196-1. The specification is applicable in Finland as such.

## 29 SUPPLEMENTARY SERVICES INTERACTIONS

The stage 1 description for supplementary services interactions is included in the individual specification for each supplementary service.

The stage 3 description for supplementary services interactions is contained in the standard SFS-EN 300 195-1. The following gives the recommended guidelines for the implementation of the supplementary services interactions in the Finnish networks

### 5.2 AOC-E and ECT supplementary services

#### subclause 5.2.2.1.1

The network shall send AOC-E type charging information pertaining to a transferred call, after the call is released, according to the subclause 5.2.2.1.1.

The network shall send AOCEBillingId within an AOCECurrency or AOCEChargingUnit invoke component if the bearer independent transfer is used.

### 5.4 AOC-E and CD supplementary services

#### subclauses 5.4.2, 5.4.2.1.1, 5.4.3.1

The network shall send charging information to the deflecting user when a deflected call is released, according to the subclauses 5.4.2 and 5.4.2.1.1 and as specified in the service description section of AOC-E in this document.

#### subclauses 5.4.2.1.1, 5.4.3.2.1

The network shall send AOCEBillingId within an AOCECurrency or AOCEChargingUnit invoke component if the bearer independent transfer is used.

#### subclause 5.4.3.2

The network shall send charging information to the deflecting user when a deflected call is released, if the AOC-E supplementary service is activated for all calls, according to the Subclauses 5.4.2 and 5.4.2.1.1 and as specified in the service description section of AOC-E in this document. Sending charging information when the service is activated on a per-call basis is not supported.

### 5.5 AOC-E and CFB supplementary services

#### subclauses 5.5.2, 5.5.2.1.1, 5.5.3.1

The network shall send charging information to the forwarding user when a forwarded call is released, according to the subclauses 5.5.2, 5.5.2.1.1 and 5.5.3.1 and as specified in the service description section of AOC-E in this document.

#### subclause 5.5.2.1.1

The network shall send AOCEBillingId within an AOCECurrency or AOCEChargingUnit invoke component if the bearer independent transfer is used.

### 5.6 AOC-E and CFNR supplementary services

The procedures of subclause 5.5 shall apply with the exception that the network shall set the AOCEBillingId = "CallForwardingNoReply".

### 5.7 AOC-E and CFU supplementary services

The procedures of subclause 5.5 shall apply with the exception that the network shall set the AOCEBillingId = "CallForwardingUnconditional".

#### 5.8 AOC-E and 3PTY supplementary services

##### subclause 5.8.2.1

The network option to indicate charges for the use of conference bridge is not supported.

#### 5.10 AOC-E and TP supplementary services

##### subclause 5.10.2.1.1

The network shall send charging information to the served user in a SUSPEND ACKNOWLEDGE message, according to the subclause 5.10.2.1.1 and as specified in the service description section of TP in this document.

##### subclause 5.10.2.2.1

The network shall support the network option to send charging information to the served user in a RESUME ACKNOWLEDGE message, according to the subclause 5.10.2.2.1 and as specified in the service description section of TP in this document.

The network shall support the network option to send charging information to the served user even though the network cannot resume a suspended call, in a RESUME REJECT message according to the subclause 5.10.2.2.1 and as specified in the service description section

#### 5.20 CD and UUS supplementary service

##### subclauses 5.20.2.1.1, 5.20.2.2.1.1, 5.20.2.2.2.1, 5.20.2.2.4.1

The deflection of the UUI and/or UUS supplementary service request can be restricted to deflecting users who subscribe to the relevant UUS supplementary service.

##### subclause 5.20.2.2.2.1

If the service is requested as preferred, and the served user accepts the service request in the Alerting message, then the CD supplementary service shall not be invoked for this call.

#### 5.23 CFB and UUS supplementary service

##### subclause 5.23.2.1

The forwarding of the UUI and/or UUS supplementary service request can be restricted to forwarding users who subscribe to the relevant UUS supplementary service.

##### subclause 5.23.3.2.1

The rerouting of the UUI and/or UUS supplementary service can be restricted to users who subscribe to the relevant UUS supplementary service.

#### 5.26 CFNR and UUS supplementary service

##### subclauses 5.26.2.1.1, 5.26.2.2.1, 5.26.2.4.1

The forwarding of the UUI and/or UUS supplementary service request can be restricted to forwarding users who subscribe to the relevant UUS supplementary service.

subclause 5.26.2.2.1

If the service is requested as preferred, and the served user accepts the service request in the Alerting message, then the CFNR supplementary service shall not be invoked for this call.

5.29 CFU and UUS supplementary service

subclause 5.29.2.1

The forwarding of the UUI and/or UUS supplementary service request can be restricted to forwarding users who subscribe to the relevant UUS supplementary service.