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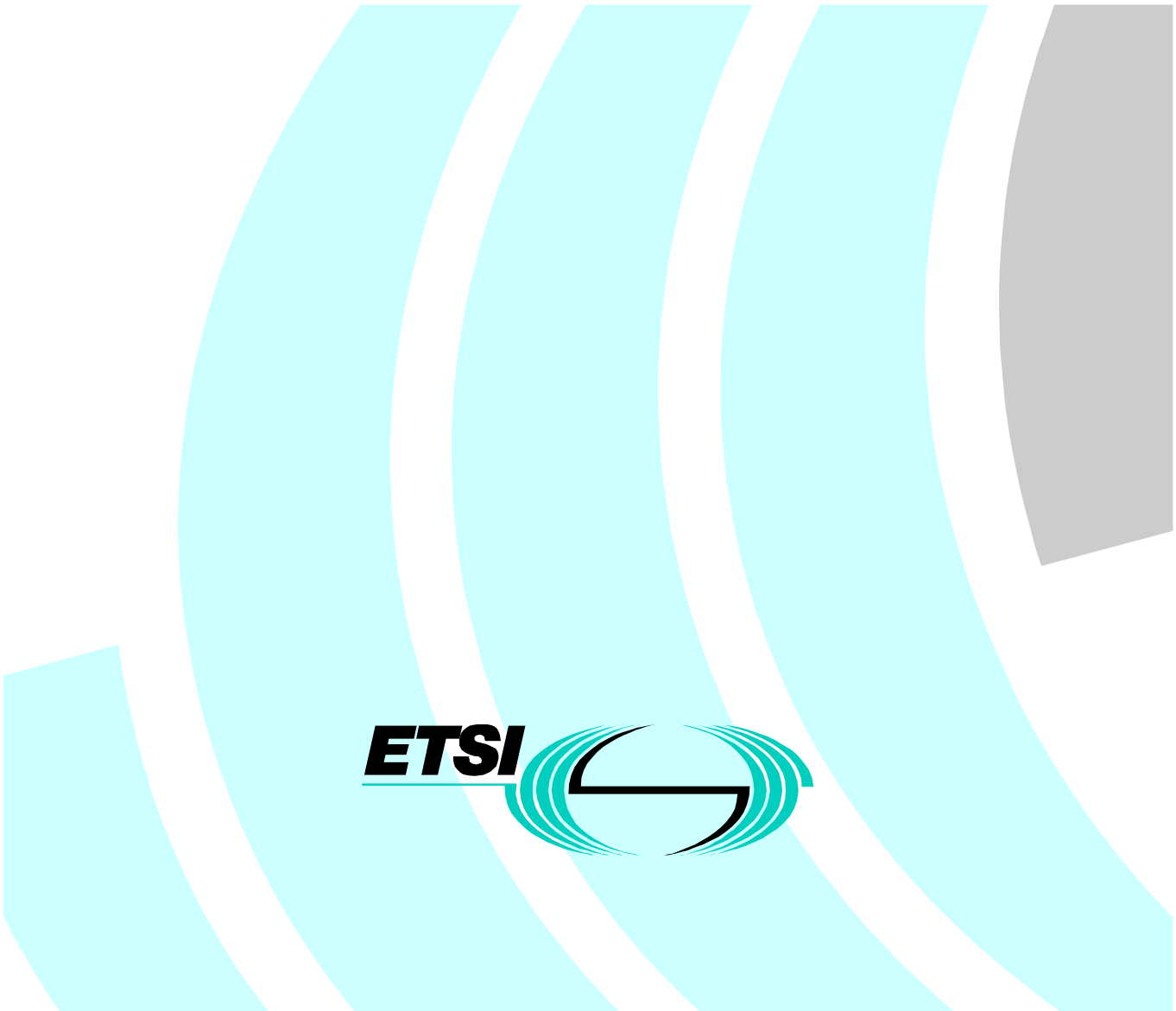
European Standard (Telecommunications series)

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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ETSI

Postal address
F-06921 Sophia Antipolis Cedex - FRANCE

Office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16
Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Internet
secretariat@etsi.fr
http://www.etsi.fr
http://www.etsi.org

Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS), and is now submitted for the Voting phase of the ETSI standards Two-step Approval Procedure.

The present document is part 1 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Outgoing Call Barring (OCB) supplementary services, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";

Part 5: "Test Suite Structure & Test Purposes (TSS&TP) specification for the network";

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

In accordance with CCITT Recommendation I.130 [11], the following three level structure is used to describe the supplementary telecommunication services as provided by European public telecommunications operators under the pan-European ISDN:

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

The present document details the stage 3 aspects (signalling system protocols and switching functions) needed to support the OCB supplementary services. The stage 1 aspects are detailed in EN 301 082 [7] and EN 301 084 [8]. The stage 2 aspects of the OCB supplementary services have not been specified.

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

1 Scope

This first part of EN 301 001 specifies the stage three of the OCB supplementary services for the pan-European Integrated Services Digital Network (ISDN) as provided by the European public telecommunications operators at the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [9]) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol. Stage three identifies the protocol procedures and switching functions needed to support a telecommunication service (see CCITT Recommendation I.130 [11]).

In addition, the present document specifies the protocol requirements at the T reference point where the service is provided to the user via an intermediate private ISDN.

The present document does not specify the additional protocol requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

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 a served user to have the network reject calls belonging to certain types, when they are originated by the served user. The served user's ability to receive calls is unaffected by the OCB-F supplementary service. The OCB-F supplementary service may operate on all calls belonging to certain types, or just on those calls associated with specified basic services. The OCB-F supplementary service operates according to the requirements specified by the served user on provision and cannot be activated or deactivated under the control of the served user.

The OCB-UC supplementary service enables a served user to have the network reject calls belonging to certain types, when they are originated by the served user. The served user's ability to receive calls is unaffected by the OCB-UC supplementary service. The OCB-UC supplementary service may operate on all calls belonging to certain types, or just on those calls associated with specified basic services. The served user can select the barring program(s), activate and later deactivate them.

The OCB supplementary services are applicable to all circuit-switched telecommunications services.

Further parts of the present document specify the method of testing required to identify conformance to the present document.

The present document is applicable to equipment supporting at least one of the OCB supplementary services, to be attached at either side of a T reference point or coincident S and T reference point when used as an access to the public ISDN.

2 References

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or

b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

2.1 Normative references

[1] CCITT Recommendation X.208 (1988): "Specification of Abstract Syntax Notation One (ASN.1)".

[2] CCITT Recommendation X.219 (1988): "Remote operations: Model, notation and service definition".

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

[4] EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[5] EN 300 403-1: "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 [ITU-T Recommendation Q.931, modified]".

[6] EN 301 002-1 (V1.1): "Integrated Services Digital Network (ISDN); Security tools procedures; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[7] EN 301 082: "Network Aspects (NA); Integrated Services Digital Network (ISDN); Outgoing Call Barring-Fixed (OCB-F) supplementary service; Service description".

[8] EN 301 084: "Network Aspects (NA); Integrated Services Digital Network (ISDN); Outgoing Call Barring-User Controlled (OCB-UC) supplementary service; Service description".

[9] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - reference configurations".

[10] ITU-T Recommendation Z.100 (1993): "CCITT specification and description language (SDL)".

2.2 Informative references

[11] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[12] ETR 232 (1995): "Security Techniques Advisory Group (STAG); Glossary of security terminology".

[13] ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".

[14] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".

[15] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".

3 Definitions and abbreviations

3.1 Definitions

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

all services: If for the control of the OCB-UC supplementary service the parameter basicService is set to "allServices" then all basic services are affected that the served user is subscribed to, and for which the OCB-UC supplementary service applies and is subscribed to, at the point in time that the request is received in the network.

barring program: See EN 301 082 [7] or EN 301 084 [8].

basic service: A bearer service or teleservice. In the present document, refers only to circuit-switched basic services.

Bearer Capability (BC): The type of transmission media provided by the network, and thus the type of the overall connection, and also the set of lower layer protocols required on the connection.

bearer service: See ITU-T Recommendation I.112 [14], definition 202.

call reference: See EN 300 196-1 [4], subclause 3.1.

default ISDN number: An agreed ISDN number between the user, at the calling side, and the network provider.

disabling: See EN 301 084 [8], clause 3.

High layer compatibility (HLC): The set of higher layer protocols required for the call; this information may also be used to define the basic service as a particular teleservice.

Integrated Services Digital Network (ISDN): See ITU-T Recommendation I.112 [14], definition 308.

ISDN number: A number conforming to the numbering plan and structure specified in ITU-T Recommendation E.164 [13].

invoke component: See EN 300 196-1 [4], subclause 8.2.2.1. Where reference is made to an "xxxx" invoke component, an invoke component is meant with its operation value set to the value of the operation "xxxx".

network: The Digital Subscriber Signalling System No. one (DSS1) protocol entity at the network side of the user-network interface.

Personal Identification Number (PIN): See ETR 232 [12].

point-to-point terminal configuration: A terminal configuration in which there is one user signalling entity.

reject component: See EN 300 196-1 [4], subclause 8.2.2.4.

return error component: See EN 300 196-1 [4], subclause 8.2.2.3. Where reference is made to a "xxxx" return error component, a return error component is meant which is related to a "xxxx" invoke component.

return result component: See EN 300 196-1 [4], subclause 8.2.2.2. Where reference is made to a "xxxx" return result component, a return result component is meant which is related to a "xxxx" invoke component.

served user: The user who subscribes to, activates, deactivates or interrogates an OCB supplementary service.

service; telecommunication service: See ITU-T Recommendation I.112 [14], definition 201.

supplementary service: See ITU-T Recommendation I.210 [15], subclause 2.4.

teleservice: See ITU-T Recommendation I.112 [14], definition 203.

user: The DSS1 protocol entity at the user side of the user-network interface.

3.2 Abbreviations

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

ASN.1	Abstract Syntax Notation one
BC	Bearer Capability
DSS1	Digital Subscriber Signalling System No. one
HLC	High Layer compatibility
ISDN	Integrated Services Digital Network
MSN	Multiple Subscriber Number
OCB	Outgoing Call Barring
OCB-F	Outgoing Call Barring-Fixed
OCB-UC	Outgoing Call Barring-User Controlled
PIN	Personal Identification Number
SDL	Specification and Description Language

4 Description

The OCB supplementary services shall be available to users who are connected to the network via the basic access or the primary rate access.

Outgoing calls from the served user's termination shall be barred according to the barring program(s) which is (are) active for the served user's access or Integrated Services Digital Network (ISDN) number, and for the basic service associated with the call.

The network provider shall define the number of barring programs and shall define the contents of each barring program (i.e. types of call) available for, and to be shared by the OCB supplementary services. The maximum number of barring programs is a network option within the range of 1 to 256. A barring program can contain one type of call, or a combination of different types of call to be barred. The defined barring programs are available to all the served users of the OCB supplementary service.

Unauthorized control of the OCB-UC supplementary service by the served user is protected by the use of a Personal Identification Number (PIN).

5 Operational requirements

5.1 Provision and withdrawal

Each OCB supplementary service shall be provided after prior arrangement with the network provider. Provision of the OCB-UC supplementary service shall include the provision of a PIN.

Each OCB supplementary service can be withdrawn separately by the network provider at the subscriber's request, or for network provider reasons.

The OCB-F and OCB-UC supplementary services can be provided for all basic services subscribed to by the user, or as a network option, the user can identify particular basic services for which the supplementary service shall be provided.

As a network option, the OCB-F and OCB-UC supplementary services can be provided on a per ISDN number basis, or can be provided to the whole access. The network provider offers both provision options, it shall be a subscription option to choose which of these options applies.

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, then, as a network option, the served user may be given the capability to indicate whether activation or deactivation applies to an indicated number or to all ISDN numbers on the access. This capability is to be provided by means of a subscription option.

As a network option, the served users of the OCB-UC and OCB-F supplementary services shall be able to have more than one barring program for a given basic service and ISDN number active simultaneously.

As a network option, the served users of the OCB-UC supplementary service shall be able, by using the disabling procedure, to indicate per call that for this call the network shall disregard any activated barring program.

The subscription options are summarized in table 1.

Table 1: Subscription options for the OCB supplementary services

Subscription option	Value	Applicability
OCB provision on access/number basis (note 1)	on access basis on ISDN number basis	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.		

The network options are summarized in table 2.

Table 2: Network options for the OCB supplementary services

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

5.2 Requirements on the originating network side

The procedures at the coincident S and T reference point in EN 300 403-1 [5], subclause 5.1 and the procedures of clause 8 in the present document shall apply.

5.3 Requirements on the destination network side

Not applicable.

6 Coding requirements

6.1 Coding of the Facility information element components

Table 3 shows the definitions of the operations and errors required for the OCB-UC supplementary service using Abstract Syntax Notation one (ASN.1) as specified in CCITT Recommendation X.208 [1] and using the OPERATION and ERROR macro as defined in figure 4 of CCITT Recommendation X.219 [2].

The formal definition of the component types to encode these operations and errors is provided in clause D.1 of EN 300 196-1 [4].

The inclusion of components in Facility information elements is defined in subclause 11.2.2.1 of EN 300 196-1 [4].

All components (invoke, return result, return error and reject) shall be included within a Facility information element. This Facility information element may be included in any appropriate message as specified in subclause 11.2.2.1 of EN 300 196-1 [4], unless a more restrictive specification is given in clause 9.

Table 3: Definition of operations and errors for the OCB supplementary services

```
Outgoing-Call-Barring-Operations-and-Errors {ccitt identified-organization etsi(0) 1001
                                             operations-and-errors(1)}

DEFINITIONS EXPLICIT TAGS ::=

BEGIN

EXPORTS
        ActivationOcb,
        ActivationStatusNotificationOcb,
        DeactivationOcb,
        DeactivationStatusNotificationOcb,
        InterrogationOcb,
        DisableOcb,
        OcbInvoked,
        InvalidBarringProgram,
        NoBarringProgram
;

IMPORTS
        OPERATION, ERROR
        FROM Remote-Operation-Notation
            {joint-iso-ccitt remote-operations(4) notation(0)}

        PartyNumber
        FROM Addressing-Data-Elements
            {ccitt identified-organization etsi(0) 196 addressing-data-elements(6)}

        BasicService
        FROM Basic-Service-Elements
            {ccitt identified-organization etsi(0) 196 basic-service-elements(8)}

        notSubscribed, notAvailable, basicServiceNotProvided, invalidServedUserNr,
        resourceUnavailable, notImplemented, supplementaryServiceInteractionNotAllowed
        FROM General-Errors
            {ccitt identified-organization etsi(0) 196 general-errors(2)}

        NotActivated
        FROM Diversion-Operations
            {ccitt identified-organization etsi(0) 207 operations-and errors(1)}

        Pin, invalidPin, userControlBlocked, changeOfPinRequired
        FROM Pin-Set-Operations-and-Errors
            {ccitt identified-organization etsi(0) 1002 operations-and-errors(1)}
;
```

(continued)

Table 3 (continued): Definition of operations and errors for the OCB supplementary services

```
ActivationOcb                       ::= OPERATION
                                            ARGUMENT    ActivationOcbArgument
                                            RESULT
                                            ERRORS     {notSubscribed,
                                                        notAvailable,
                                                        basicServiceNotProvided,
                                                        invalidServedUserNr,
                                                        invalidPin,
                                                        InvalidBarringProgram,
                                                        NoBarringProgram,
                                                        userControlBlocked,
                                                        changeOfPinRequired,
                                                        supplementaryServiceInteractionNotAllowed,
                                                        resourceUnavailable}

DeactivationOcb                     ::= OPERATION
                                            ARGUMENT    DeactivationOcbArgument
                                            RESULT
                                            ERRORS     {notSubscribed,
                                                        notAvailable,
                                                        basicServiceNotProvided,
                                                        invalidServedUserNr,
                                                        notActivated,
                                                        invalidPin,
                                                        changeOfPinRequired,
                                                        userControlBlocked}

InterrogationOcb                    ::= OPERATION
                                            ARGUMENT    InterrogationOcbArgument
                                            RESULT      intOcbResultList    IntOcbResultList
                                            ERRORS     {notSubscribed,
                                                        notAvailable,
                                                        basicServiceNotProvided,
                                                        invalidServedUserNr}

ActivationStatusNotificationOcb     ::= OPERATION
                                            ARGUMENT ActStatusNotificationOcbArg

DeactivationStatusNotificationOcb   ::= OPERATION
                                            ARGUMENT DeactStatusNotificationOcbArg

DisableOcb                          ::= OPERATION
                                            ARGUMENT    pin                 Pin
                                            ERRORS     {notImplemented,
                                                        invalidPin,
                                                        changeOfPinRequired,
                                                        userControlBlocked}

OcbInvoked                          ::= OPERATION

ActivationOcbArgument               ::=  SEQUENCE {
                                            basicService        BasicService,
                                            pin                 Pin,
                                            barringProgram      BarringProgram  OPTIONAL,
                                            servedUserNr        ServedUserNr    OPTIONAL}

DeactivationOcbArgument             ::= SEQUENCE {
                                            basicService        BasicService,
                                            pin                 Pin,
                                            barringProgram      BarringProgram  OPTIONAL,
                                            servedUserNr        ServedUserNr    OPTIONAL}

InterrogationOcbArgument            ::= SEQUENCE {
                                            basicService        BasicService,
                                            servedUserNr        ServedUserNr        OPTIONAL}

ActStatusNotificationOcbArg         ::= SEQUENCE {
                                            basicService        BasicService,
                                            barringProgram      BarringProgram,
                                            servedUserNr        ServedUserNr}

DeactStatusNotificationOcbArg       ::= SEQUENCE {
                                            basicService        BasicService,
                                            barringProgram      BarringProgram  OPTIONAL,
                                            servedUserNr        ServedUserNr}

ServedUserNr                        ::= CHOICE {
                                            individualNumber    PartyNumber,
                                            allNumbers          NULL}
```

(continued)

Table 3 (concluded): Definition of operations and errors for the OCB supplementary services

```
IntOcbResultList                    ::= SET SIZE(0..30) OF IntOcbResult

IntOcbResult                        ::= SEQUENCE {
                                            servedUserNr        ServedUserNr,
                                            basicService        BasicService,
                                            barringProgramList  BarringProgramList}

BarringProgram                      ::= INTEGER (0..255)
BarringProgramList                  ::= SET SIZE(0…255) OF BarringProgram

InvalidBarringProgram               ::= ERROR
NoBarringProgram                    ::= ERROR

oCBOID OBJECT IDENTIFIER ::= {ccitt identified-organization etsi(0) 1001 operations-and-errors(1)}

activationOcb                       ActivationOcb                       ::= globalValue {oCBOID  1}
deactivationOcb                     DeactivationOcb                     ::= globalValue {oCBOID  2}
activationStatusNotificationOcb     ActivationStatusNotificationOcb     ::= globalValue {oCBOID  3}
deactivationStatusNotificationOcb   DeactivationStatusNotificationOcb   ::= globalValue {oCBOID  4}
interrogationOcb                    InterrogationOcb                    ::= globalValue {oCBOID  5}
disableOcb                          DisableOcb                          ::= globalValue {oCBOID  6}
ocbInvoked                          OcbInvoked                          ::= globalValue {oCBOID  7}
invalidBarringProgram               InvalidBarringProgram               ::= globalValue {oCBOID 10}
noBarringProgram                    NoBarringProgram                    ::= globalValue {oCBOID 11}

notActivated                        NotActivated                        ::= localValue 46

END -- of Outgoing-Call-Barring-Operations-and-Errors
```

6.2 Coding of the information elements

Not applicable.

7 State definitions

Table 4 defines the states for the OCB supplementary services.

Table 4: States for the OCB supplementary services

User states	
Idle	The OCB supplementary service is idle
Wait Activation	The user has requested activation and is waiting for a response
Wait Deactivation	The user has requested deactivation and is waiting for a response
Wait Interrogation	The user has requested interrogation and is waiting for a response
Network states	
Idle	The OCB supplementary service is idle
Wait Activation	The network has received an activation request
Wait Deactivation	The network has received a deactivation request
Wait Interrogation	The network has received an interrogation request

8 Signalling procedures at the coincident S and T reference point

8.1 Activation, deactivation and interrogation

The procedures for activation, deactivation and interrogation only apply to the OCB-UC supplementary service.

The OCB-F supplementary service is activated on provision and deactivated on withdrawal by the network provider. No activation, deactivation and interrogation procedures are defined for the user-network interface.

8.1.1 Activation

8.1.1.1 Normal operation

Having subscribed to the OCB-UC supplementary service, in order to activate that supplementary service, the served user shall send an ActivationOcb invoke component to the network using the procedure described in subclause 10.2.2.1 of EN 300 196-1 [4].

The served user shall include the following information in this invoke component:

a) the served user shall indicate the instance(s) of the supplementary service by use of the following parameters:

1) in the basicService parameter, the basic service(s) for which the activation applies. If the OCB-UC supplementary service is subscribed to for only one basic service then the served user shall set this parameter to either "allServices" or shall indicate that basic service. If the OCB-UC supplementary service is subscribed to for more than one basic service, the served user shall either indicate the particular basic service for which the activation applies, or shall set the parameter to "allServices" if the activation has to apply to all basic services for which the OCB-UC supplementary service is subscribed to by the served user;

2) in the servedUserNr parameter, the ISDN number(s) for which the activation applies. Dependant on the applied provision option, inclusion of this parameter shall be mandatory or optional as follows:

- if the value of the network option "OCB provision with relation to served user numbers" is "on access basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on access basis", the served user does not need to include this parameter. The network shall ignore the value of the servedUserNr parameter (if present) and shall activate the OCB-UC supplementary service for the whole access;

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the Multiple Subscriber Number (MSN) supplementary service is not provided to the access, the served user does not need to include this parameter. The network shall ignore the value of the servedUserNr parameter (if present) and shall activate the OCB-UC supplementary service for the single number of the access;

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, then the served user shall indicate in this parameter the ISDN number(s) for which the activation applies. The network shall act as follows, dependant on the subscription option "activation, deactivation and interrogation for all ISDN numbers on the same access":

  - if the value of the subscription option is "no" and:

    - the servedUserNr parameter is set to "individualNumber", the network shall activate the instance(s) of the OCB-UC supplementary service relating to the single number; or

    - the servedUserNr parameter is set to "allNumbers", the network shall reject the activation and send an ActivationOcb return error component indicating "invalidServedUserNr" to the served user;

  - if the value of the subscription is "yes" and:

    - the servedUserNr parameter is set to "individualNumber", the network shall activate the instance(s) of the OCB-UC supplementary service relating to the single number; or

    - the servedUserNr parameter is set to "allNumbers", the network shall activate the instance(s) of the OCB-UC supplementary service relating to the number(s) that are subscribed to this supplementary service;

b) the served user shall indicate the OCB-UC specific data in the following parameters:

1) in the pin parameter, the PIN provided to the served user together with the provision of the OCB-UC supplementary service. Dependant on the applied provision option, the served user shall set this parameter as follows:

   - the served user shall include the PIN, registered for the single ISDN number of the access in the following cases:

     - the value of the network option "OCB provision with relation to served user numbers" is "on access basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on access basis"; or

     - the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is not provided to the access;

   - if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, and activation is requested for a particular ISDN number, then the served user shall include the PIN, registered for the indicated ISDN number;

   - if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, and activation is requested for all ISDN numbers, then the served user shall include the PIN, registered for the default ISDN number on the access;

2) in the barringProgram parameter, the barring program to be activated. Inclusion of this parameter is optional if only one barring program has been defined by the network provider.

On receipt of an ActivationOcb invoke component, the network shall use the basicService and servedUserNr parameters to decide which instance(s) of the OCB-UC supplementary service are to be activated. For the whole access or for each ISDN number, indicated by the served user, the network shall activate multiple instances of the OCB-UC supplementary service if the basicService parameter is set to "allServices" and the OCB-UC supplementary service has been subscribed for several basic services.

If one of more instances are successfully activated, the network shall:

- send an ActivationOcb return result component using the procedure as described in subclause 10.2.2.1 of EN 300 196-1 [4]; and

- unless a point-to-point terminal configuration is known to exist at the user-network interface, send to all users at the access an ActivationStatusNotificationOcb invoke component using the procedure for status notification described in subclause 10.2.5 of EN 300 196-1 [4]. A Called party number information element shall not be included.

  The network shall provide the following information in the parameters of this invoke component:

  - the network shall indicate the instance(s) of the supplementary service by use of the following parameters:

    - in the basicService parameter, the basic service(s) as indicated in the ActivationOcb invoke component;

    - in the servedUserNr parameter, the ISDN number(s) for which the activation applies. This can be either an individual ISDN number (specified by choosing "individualNumber") or all numbers on the access (specified by choosing "allNumbers");

  - the network shall indicate in the barringProgram parameter the activated barring program for these instance(s) of the OCB-UC supplementary service.

Subsequent procedures for terminating the transaction are as specified in subclause 10.2.2.1 of EN 300 196-1 [4].

If the network option multiple active barring programs is not supported, an activation can be modified by a subsequent activation (reactivation) procedure. The barring program, indicated in the reactivation request, shall deactivate and replace the already active barring program. If the network option multiple active barring programs is supported, a subsequent activation procedure shall activate a new active barring program without affecting the existing activated barring programs.

The basicService parameter set to "allServices" or the servedUserNr parameter set to "allNumbers" within the ActivationOcb invoke component indicates one or multiple instances of the supplementary service. A single ActivationOcb return result component indicates the result, no matter how many instances can be activated. Only if all requested instances can be activated, or reactivated, shall an ActivationOcb return result component be given.

An activation request covering multiple instances shall apply even if each instance was previously deactivated with a single deactivation request. An activation request covering a single instance shall apply even if that instance was previously deactivated with a multiple deactivation request.

A reactivation request covering multiple instances shall apply even if each instance was previously activated with a single activation request. A reactivation request covering a single instance shall apply even if that instance was previously activated with a multiple activation request.

When the served user receives a correctly encoded ActivationOcb return result component, and delivered as specified in subclause 10.2.2.1 of EN 300 196-1 [4], the served user shall accept the provided information and not respond to the network.

8.1.1.2 Exceptional procedures

If the network is unable to activate the OCB-UC supplementary service, the network shall send an ActivationOcb return error component to the served user within a Facility information element, using the procedure in subclause 10.2.2.2 of EN 300 196-1 [4], indicating one of the following error values:

- "basicServiceNotProvided", if the served user has not subscribed to the indicated basic service;
- "notAvailable", if the OCB-UC supplementary service is not available for the indicated basic service i.e. the indicated basic service is not a circuit-switched telecommunication service;
- "notSubscribed", if (for a given ISDN number or for the whole access) the OCB-UC supplementary service has either not been subscribed to for the indicated, single basic service, or has not been subscribed to for any basic service if the value "allServices" is indicated in the basicService parameter;
- "invalidServedUserNr", if the servedUserNr parameter is mandatory according to subclause 8.1.1.1 of the present document, and either the ISDN number provided to identify the served user is not a valid number, the served user does not include the servedUserNr parameter, or the served user uses the value "allNumbers" while having the value "no" for the subscription option "activation, deactivation and interrogation for all ISDN numbers on the same access";
- "invalidPin", if the indicated PIN does not match the registered PIN;
- "changeOfPinRequired", if the indicated PIN matches the registered PIN but it is marked in the network as being expired;
- "userControlBlocked", if the activation request cannot be accepted due to the fact that the served user has exceeded the number of times an invalid PIN can be entered;

NOTE: See EN 301 002-1 [6] for the procedures related to the use of a PIN.

- "InvalidBarringProgram", if the indicated barring program is not available to the served user;
- "NoBarringProgram", if the served user does not specify a barring program when more than one barring program is available;
- "resourceUnavailable", if the resources required to perform adequately the OCB-UC supplementary service are not available;
- "supplementaryServiceInteractionNotAllowed", if the provision of the OCB-UC supplementary service activation is precluded by a procedure within EN 300 195-1 [3], clause 5.

Subsequent procedures for the network and the user are as specified in subclause 10.2.2.2 of EN 300 196-1 [4] for terminating the transaction.

When activation of multiple instances of the OCB-UC supplementary service is requested, and if any instance cannot be activated, or reactivated, then none of the requested instances shall be activated. The error value shall be related to an instance that could not be activated or reactivated.

On expiration of timer T-ACTIVATE and the served user not having received any response to the ActivationOcb invoke component, the served user shall perform the action as specified in subclause 10.2.2.2 of EN 300 196-1 [4], and shall consider this attempt to activate the OCB-UC supplementary service to have failed.

The served user, on receiving a reject component, shall stop timer T-ACTIVATE, and return to the same state as before the ActivationOcb invoke component was sent.

If the network receives a reject component from the served user, it needs not correlate it to the procedure in this subclause and it shall have no impact on the OCB-UC supplementary service.

8.1.2 Deactivation

8.1.2.1 Normal operation

In order to deactivate the OCB-UC supplementary service, the served user shall send a DeactivationOcb invoke component to the network using the procedure described in subclause 10.2.3.1 of EN 300 196-1 [4].

The served user shall include the following information in this invoke component:

a) the served user shall indicate the instance(s) of the supplementary service by use of the following parameters:

1) in the basicService parameter, the basic service(s) for which the deactivation applies. If the OCB-UC supplementary service is subscribed to for only one basic service then the served user shall set this parameter to either "allServices" or shall indicate that basic service. If the OCB-UC supplementary service is subscribed to for more than one basic service, the served user shall either indicate the particular basic service for which the deactivation applies, or shall set the parameter to "allServices" if the deactivation has to apply to all basic services for which the OCB-UC supplementary service is subscribed to by the served user;

2) in the servedUserNr parameter, the ISDN number(s) for which the deactivation applies. Dependant on the applied provision option, inclusion of this parameter shall be mandatory or optional as follows:

- if the value of the network option "OCB provision with relation to served user numbers" is "on access basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on access basis", the served user does not need to include this parameter. The network shall ignore the value of the servedUserNr parameter (if present) and shall deactivate the OCB-UC supplementary service for the whole access;

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is not provided to the access, the served user does not need to include this parameter. The network shall ignore the value of the servedUserNr parameter (if present) and shall deactivate the OCB-UC supplementary service for the single number of the access;

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, then the served user shall indicate in this parameter the ISDN number(s) for which the deactivation applies. The network shall act as follows, dependant on the subscription option "activation, deactivation and interrogation for all ISDN numbers on the same access":

  - if the value of the subscription option is "no" and:

    - the servedUserNr parameter is set to "individualNumber", the network shall deactivate the instance(s) of the OCB-UC supplementary service relating to the single number; or

    - the servedUserNr parameter is set to "allNumbers", the network shall reject the deactivation and send a DeactivationOcb return error component indicating "invalidServedUserNr" to the served user;

  - if the value of the subscription is "yes" and:

    - the servedUserNr parameter is set to "individualNumber", the network shall deactivate the instance(s) of the OCB-UC supplementary service relating to the single number; or

    - the servedUserNr parameter is set to "allNumbers", the network shall deactivate the instance(s) of the OCB-UC supplementary service relating to the number(s) that are subscribed to this supplementary service;

b) the served user shall indicate the OCB-UC specific data in the following parameters:

1) in the pin parameter, the PIN provided to the served user together with the provision of the OCB-UC supplementary service. Dependant on the applied provision option, the served user shall set this parameter as follows:

- the served user shall include the PIN, registered for the single ISDN number of the access in the following cases:

- the value of the network option "OCB provision with relation to served user numbers" is "on access basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on access basis"; or

- the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is not provided to the access;

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, and deactivation is requested for a particular ISDN number, then the served user shall include the PIN, registered for the indicated ISDN number;

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, and deactivation is requested for all ISDN numbers, then the served user shall include the PIN, registered for the default ISDN number on the access.

2) optionally, in the barringProgram parameter, the barring program to be deactivated. If no barring program is indicated, the network shall deactivate all activated barring programs for that instance.

On receipt of a DeactivationOcb invoke component, the network shall use the basicService and servedUserNr parameters to decide which instance(s) of the OCB-UC supplementary service is to be deactivated. For the whole access or for each ISDN number, indicated by the served user, the network shall deactivate multiple instances of the OCB-UC supplementary service if the basicService parameter is set to "allServices" and the OCB-UC supplementary service has been activated for several basic services.

If one or more instances are successfully deactivated, the network shall:

- send a DeactivationOcb return result component using the procedure as described in subclause 10.2.3.1 of EN 300 196-1 [4]; and

- unless a point-to-point terminal configuration is known to exist at the user-network interface, send to all users at the access a DeactivationStatusNotificationOcb invoke component using the procedure for status notification described in subclause 10.2.5 of EN 300 196-1 [4]. A Called party number information element shall not be included.

  The network shall provide the following information in the parameters of this invoke component:

  - the network shall indicate the instance(s) of the supplementary service by use of the following parameters:

    - in the basicService parameter, the basic service(s) as indicated in the DeactivationOcb invoke component;

    - in the servedUserNr parameter, the ISDN number(s) for which the deactivation applies. This can be either an individual ISDN number (specified by choosing "individualNumber") or all numbers on the access (specified by choosing "allNumbers").

  - if the network option multiple active barring programs allowed is supported, and only one barring program has been deactivated, the network shall indicate this deactivated barring program in the barringProgram parameter.

Subsequent procedures for terminating the transaction are as specified in subclause 10.2.3.1 of EN 300 196-1 [4].

The basicService parameter set to "allServices" or the servedUserNr parameter set to "allNumbers" within the DeactivationOcb invoke component indicates one or multiple instances of the supplementary service. A single DeactivationOcb return result component indicates the result no matter how many instances can be deactivated. Only if all requested instances can be deactivated a DeactivationOcb return result component shall be given.

A deactivation request covering multiple instances shall apply even if each instance was previously activated with a single activation request. A deactivation request covering a single instance shall apply even if that instance was previously activated with a multiple activation request.

When the served user receives a correctly encoded DeactivationOcb return result component, and delivered as specified in subclause 10.2.3.1 of EN 300 196-1 [4], then the served user shall accept the provided information and not respond to the network.

8.1.2.2 Exceptional procedures

If the network is unable to deactivate the OCB-UC supplementary service, the network shall send a DeactivationOcb return error component to the served user within a Facility information element, using the procedure in subclause 10.2.3.2 of EN 300 196-1 [4], indicating one of the following error values:

- "basicServiceNotProvided", if the served user has not subscribed to the indicated basic service;
- "notAvailable", if the OCB-UC supplementary service is not available for the indicated basic service i.e. the indicated basic service is not a circuit-switched telecommunication service;
- "notSubscribed", if (for a given ISDN number or for the whole access) the OCB-UC supplementary service has either not been subscribed to for the indicated, single basic service, or has not been subscribed to for any basic service if the value "allServices" is indicated in the basicService parameter;
- "invalidServedUserNr", if the servedUserNr parameter is mandatory according to subclause 8.1.2.1 of the present document, and either the ISDN number provided to identify the served user is not a valid number, the served user does not include the servedUserNr parameter, or the served user uses the value "allNumbers" while having the value "no" for the subscription option "activation, deactivation and interrogation for all ISDN numbers on the same access";
- "invalidPin", if the indicated PIN does not match the registered PIN;
- "changeOfPinRequired", if the indicated PIN matches the registered PIN but it is marked in the network as being expired;
- "userControlBlocked", if the deactivation request cannot be accepted due to the fact that the served user has exceeded the number of times an invalid PIN can be entered;

NOTE: See EN 301 002-1 [6] for the procedures related to the use of a PIN.

- "notActivated", if none of the requested instances of the OCB-UC supplementary service is activated.

Subsequent procedures for the network and the user are as specified in subclause 10.2.3.2 of EN 300 196-1 [4] for terminating the transaction.

When deactivation of multiple instances of the OCB-UC supplementary service is requested, and if any instance cannot be deactivated, then none of the requested instances shall be deactivated. The error value shall be related to an instance that could not be deactivated.

On expiration of timer T-DEACTIVATE and the served user not having received any response to the DeactivationOcb invoke component, the served user shall perform the action as specified in subclause 10.2.3.2 of EN 300 196-1 [4], and shall consider that this attempt to deactivate the OCB-UC supplementary service has failed and that the OCB-UC supplementary service may still be activated.

The served user, on receiving a reject component, shall stop timer T-DEACTIVATE, and return to the same state as before the DeactivationOcb invoke component was sent.

If the network receives a reject component from the served user, it need not correlate it to the procedure in this subclause and it shall have no impact on the OCB-UC supplementary service.

8.1.3 Interrogation

8.1.3.1 Normal operation

In order to interrogate the OCB-UC supplementary service to determine the status of the OCB-UC supplementary service, the served user shall send an InterrogationOcb invoke component to the network using the procedure described in subclause 10.2.4.1 of EN 300 196-1 [4].

The served user shall include the following information in this invoke component:

- in the basicService parameter, the value "allServices" or an individual basic service;
- in the servedUserNr parameter, the ISDN number(s) for which the interrogation applies. Dependant on the applied provision option, inclusion of this parameter shall be mandatory or optional as follows:
  - if the value of the network option "OCB provision with relation to served user numbers" is "on access basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on access basis", the served user does not need to include this parameter. The network shall ignore the value of the servedUserNr parameter (if present) and shall collect data of the OCB-UC supplementary service for the whole access;
  - if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is not provided to the access, the served user does not need to include this parameter. The network shall ignore the value of the servedUserNr parameter (if present) and shall collect data of the OCB-UC supplementary service for the single number of the access;
  - if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access, then the served user shall indicate in this parameter the ISDN number for which the interrogation applies. The network shall act as follows, dependant on the subscription option "activation, deactivation and interrogation for all ISDN numbers on the same access":
    - if the value of the subscription option is "no" and:
      - the servedUserNr parameter is set to "individualNumber", the network shall collect data of the instance(s) of the OCB-UC supplementary service relating to the single number; or
      - the servedUserNr parameter is set to "allNumbers", the network shall reject the interrogation and send an InterrogationOcb return error component indicating "invalidServedUserNr" to the served user;
    - if the value of the subscription is "yes" and:
      - the servedUserNr parameter is set to "individualNumber", the network shall collect data of the instance(s) of the OCB-UC supplementary service relating to the single number; or
      - the servedUserNr parameter is set to "allNumbers", the network shall collect data of the instance(s) of the OCB-UC supplementary service relating to the number(s) that are subscribed to this supplementary service;

Multiple instances may be addressed when at least one of the values "allServices" or "allNumbers" is used in the interrogation request. For each ISDN number, or for the whole access, the network shall collect data of multiple instances of the OCB-UC supplementary service if the basicService parameter is set to "allServices" and the OCB-UC supplementary service has been activated for several basic services.

The collected data shall be included within one or more IntOcbResult parameters of the InterrogationOcb return result component sent to the served user using the procedure described in subclause 10.2.4.1 of EN 300 196-1 [4].

For each activated instance that exists, an IntOcbResult parameter shall be provided, containing:

- the basicService parameter which shall indicate the basic service for which the instance applies;
- the servedUserNr parameter which shall indicate the number for which the instance applies. Its value shall be identical to the value contained in the invoke component unless:
  - the value "allNumbers" has been received and the OCB-UC supplementary service has been subscribed on a per ISDN number basis. In this case, the related individual number is provided;
  - this value has been ignored by the network (subscription applies for the whole access or the MSN supplementary service is not provided to the access). In these cases, the value "allNumbers" is systematically used;
- the barringProgramList parameter which shall indicate the active barring program(s) for the instance.

If no activated instance exists, the intOcbResultList parameter shall have size zero.

Subsequent procedures are as specified in subclause 10.2.4.1 of EN 300 196-1 [4] for terminating the transaction.

When the served user receives a correctly encoded InterrogationOcb return result component, and delivered as specified in subclause 10.2.4.1 of EN 300 196-1 [4], then the user shall accept the provided information and not respond to the network.

8.1.3.2 Exceptional procedures

If the network is unable to provide the requested information, the network shall send an InterrogationOcb return error component to the served user within a Facility information element, using the procedure in subclause 10.2.4.2 of EN 300 196-1 [4], indicating one of the following error values:

- "basicServiceNotProvided", if the served user has not subscribed to the indicated basic service;
- "notAvailable", if the OCB-UC supplementary service is not available for the indicated basic service i.e. the indicated basic service is not a circuit-switched telecommunication service, or if the requested information is not available, or if the data provided by the network exceeds the maximum length allowed for a message;
- "notSubscribed", if (for the given ISDN number or for the whole access) the OCB-UC supplementary service has either not been subscribed to for the indicated, single basic service, or has not been subscribed to for any basic service if the value "allServices" is indicated in the basicService parameter;
- "invalidServedUserNr", if the servedUserNr parameter is mandatory according to subclause 8.1.3.1 of the present document, and either the ISDN number provided to identify the served user is not a valid number, or the served user does not include the servedUserNr parameter.

Subsequent procedures for the network and the user are as specified in subclause 10.2.4.2 of EN 300 196-1 [4] for terminating the transaction.

On expiration of timer T-INTERROGATE and the served user not having received any response to the InterrogationOcb invoke component, the served user shall perform the action as specified in subclause 10.2.4.2 of EN 300 196-1 [4], and shall consider this attempt to interrogate the OCB-UC supplementary service to have failed.

The served user, on receiving a reject component, shall stop timer T-INTERROGATE and return to the same state as before the InterrogationOcb invoke component was sent.

If the network receives a reject component from the served user, it need not correlate it to the procedure in this subclause and it shall have no impact on the OCB-UC supplementary service.

8.2 Invocation and operation

8.2.1 Normal operation

When the served user originates a call according to the procedures in subclause 5.1 of EN 300 403-1 [5] the network shall proceed as follows:

- if the value of the network option "OCB provision with relation to served user numbers" is "on access basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on access basis", the network shall check if the OCB-F or OCB-UC supplementary service is activated for the basic service, determined from the Bearer Capability (BC) and High Layer Compatibility (HLC) information element values in the SETUP message according to the definition in annex D of EN 300 196-1 [4] and subclause 5.10 of EN 300 403-1 [5]; or

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is not provided to the access of the served user, the network shall check if the OCB-F or OCB-UC supplementary service is activated for the combination of the single number of the access and the basic service, determined from the BC and HL compatibility information element values in the SETUP message according to the definition in annex D of EN 300 196-1 [4] and subclause 5.10 of EN 300 403-1 [5]; or

- if the value of the network option "OCB provision with relation to served user numbers" is "on ISDN number basis", or "both" and the value of the subscription option "OCB provision on access/number basis" is "on ISDN number basis", and the MSN supplementary service is provided to the access of the served user, the network shall check if the OCB-F or OCB-UC supplementary service is activated for the combination of the ISDN number, and the basic service, determined from the BC and HL compatibility information element values in the SETUP message according to the definition in annex D of EN 300 196-1 [4] and subclause 5.10 of EN 300 403-1 [5].

If, as a result of this check, the network determines that the OCB-UC or OCB-F supplementary service is not activated, normal call establishment shall continue according to the procedures in subclause 5.1 of EN 300 403-1 [5].

If, as a result of this check, the network determines that the OCB-UC or OCB-F supplementary service is activated, the network shall check the call with respect to the activated barring program(s), and shall proceed as follows:

- if the call is not to be barred according to the activated barring program(s), normal call establishment shall continue according to the procedures in subclause 5.1 of EN 300 403-1 [5]; or

- if the call is to be barred according to the activated barring program(s), the network shall proceed as follows:

  - if the OCB-F supplementary service is activated, the network shall fail the call attempt and initiate call clearing according to the procedures in subclause 5.1.4 of EN 300 403-1 [5]. The network shall include in the clearing message cause #31 "normal, unspecified" and an OcbInvoked invoke component using the procedure described in subclause 8.3.1.1 of EN 300 196-1 [4]; or

  - if the OCB-UC supplementary service is activated, and if the served user does not include a DisableOcb invoke component in a Facility information element in the SETUP message, then the network shall fail the call attempt and initiate call clearing according to the procedures in subclause 5.1.4 of EN 300 403-1 [5]. The network shall include in the clearing message cause #31 "normal, unspecified" and an OcbInvoked invoke component using the procedure described in subclause 8.3.1.1 of EN 300 196-1 [4]; or

  - if the OCB-UC supplementary service is activated, and if the served user does include in the SETUP message a DisableOcb invoke component in a Facility information element containing in the pin parameter the PIN registered for the ISDN number against which the OCB-UC checks have been performed, and if the value of the network option "Disabling procedure allowed" is "yes", then normal call establishment shall continue according to the procedure in subclause 5.1 of EN 300 403-1 [5].

8.2.2 Exceptional procedures

If the value of the network option "Disabling procedure allowed" is "no", and if the served user includes a DisableOcb invoke component in a Facility information element in the SETUP message, then the network shall return in the first call control message a Facility information element with a DisableOcb return error component indicating the error value "notImplemented". Furthermore, if the call is barred, the procedures in subclause 8.2.1 of the present document shall apply.

If the value of the network option "Disabling procedure allowed" is "yes", and if the served user includes a DisableOcb invoke component in a Facility information element in the SETUP message while the OCB-UC supplementary service is not active or is active but the call is not to be barred, then the network shall ignore the DisableOcb invoke component.

If the value of the network option "Disabling procedure allowed" is "yes", and if the served user includes a DisableOcb invoke component with an invalid PIN in a Facility information element in the SETUP message while the OCB-UC supplementary service is active and the call is to be barred, then the network shall return a Facility information element with a DisableOcb return error component indicating the error value "invalidPin" in the clearing message failing the call attempt according to the procedures in subclause 8.2.1 of the present document.

If the value of the network option "Disabling procedure allowed" is "yes", and if the served user includes a DisableOcb invoke component with a valid PIN being marked in the network as expired, in a Facility information element in the SETUP message while the OCB-UC supplementary service is active and the call is to be barred, then the network shall return a Facility information element with a DisableOcb return error component indicating the error value "changeOfPinRequired" in the clearing message failing the call attempt according to the procedures in subclause 8.2.1 of the present document.

If the value of the network option "Disabling procedure allowed" is "yes", and if the served user includes a DisableOcb invoke component in a Facility information element in the SETUP message while the procedures using a PIN are blocked, the OCB-UC supplementary service is active and the call is to be barred, then the network shall return a Facility information element with a DisableOcb return error component indicating the error value "userControlBlocked" in the clearing message failing the call attempt according to the procedures in subclause 8.2.1 of the present document.

9 Procedures for interworking with private ISDNs

The OCB-UC or OCB-F supplementary service shall be provided to the whole private ISDN access. The subscription option "OCB provision on access/number basis" does not apply.

For activation, deactivation and interrogation of the OCB-UC supplementary service at the T reference point, the procedures in subclause 8.1 of the present document shall apply except that the request shall always be applicable to the whole private ISDN access. A servedUserNr parameter in the invoke component for an activation, deactivation or interrogation shall always be ignored.

For invocation and operation of the OCB-UC or OCB-F supplementary service at the T reference point, the procedures in subclause 8.2 of the present document shall apply for the case where provision is on access basis.

10 Interaction with other networks

Not applicable.

11 Interaction with other supplementary services

The interaction of the OCB supplementary services with other supplementary services shall be as specified in EN 300 195-1 [3].

12 Parameter values (timers)

The following values of timers shall be used by this application when using the procedures in subclause 10.2 of EN 300 196-1 [4]:

T-ACTIVATE: the duration of the timer shall be 10 s.

T-DEACTIVATE: the duration of the timer shall be 10 s.

T-INTERROGATE: the duration of the timer shall be 10 s.

13 Dynamic description (SDL diagrams)

The Specification and Description Language (SDL) diagrams are specified in figures 1 to 2 according to ITU-T Recommendation Z.100 [10]. These SDL diagrams show the interaction between internal user or network events and the resulting protocol messages.

SDL input and output symbols with direction entering and leaving to the left indicate internal events.

SDL input and output symbols with direction entering or leaving to the right indicate a protocol message exchange.

NOTE: Reject components are not shown in the SDL diagrams.

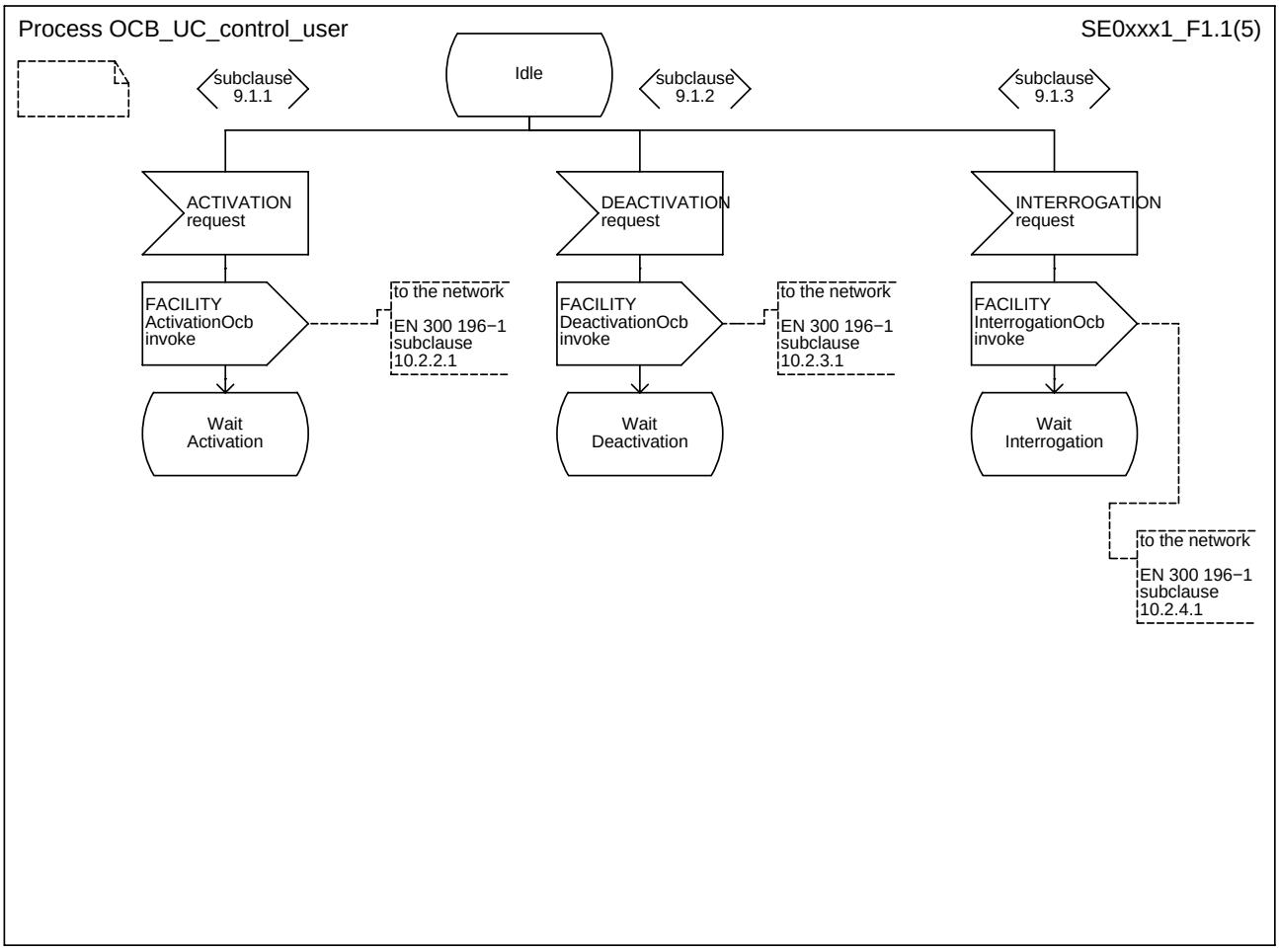


Figure 1 (sheet 1 of 5): OCB-UC management procedures - user side

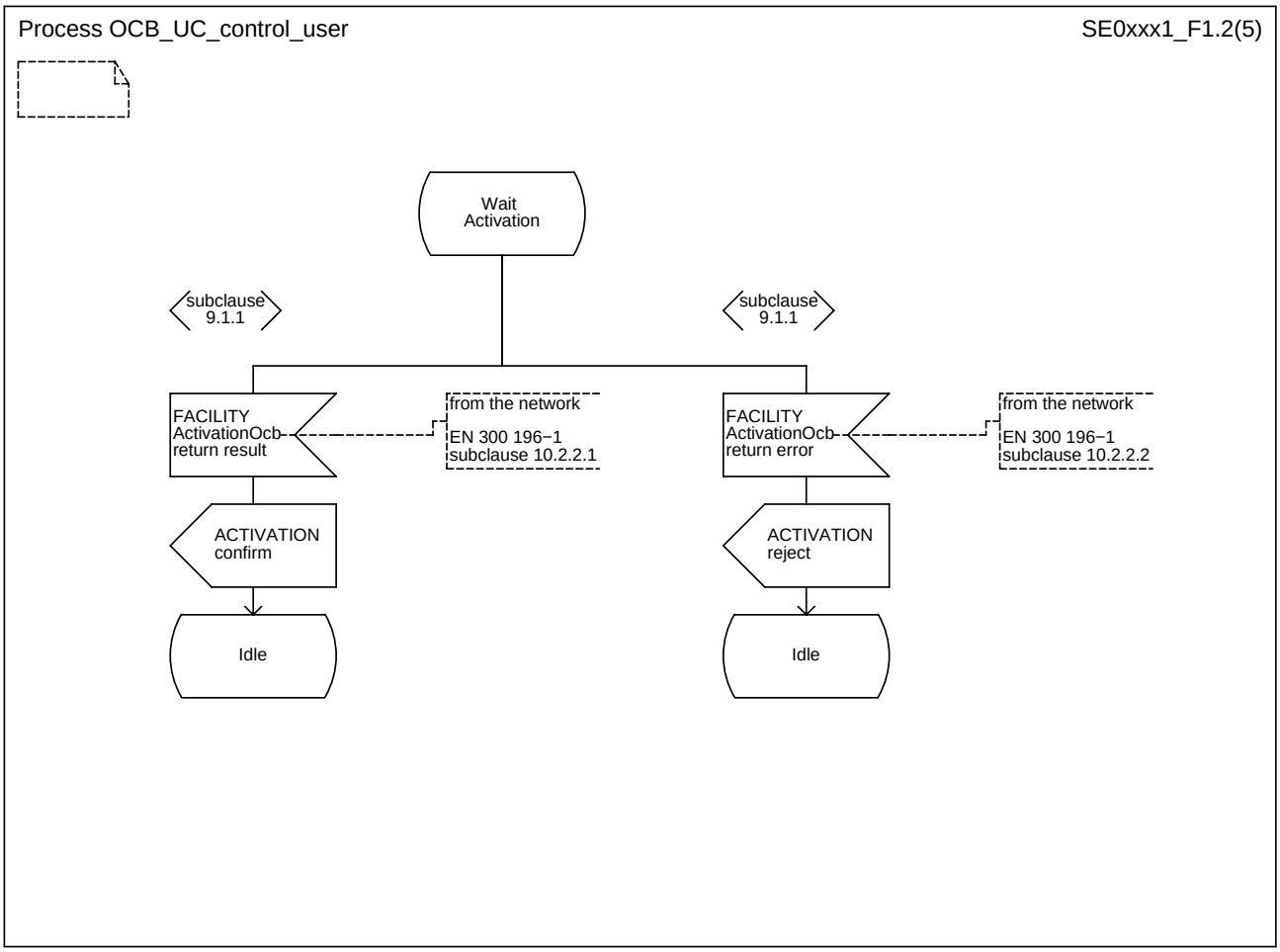


Figure 1 (sheet 2 of 5): OCB-UC management procedures - user side

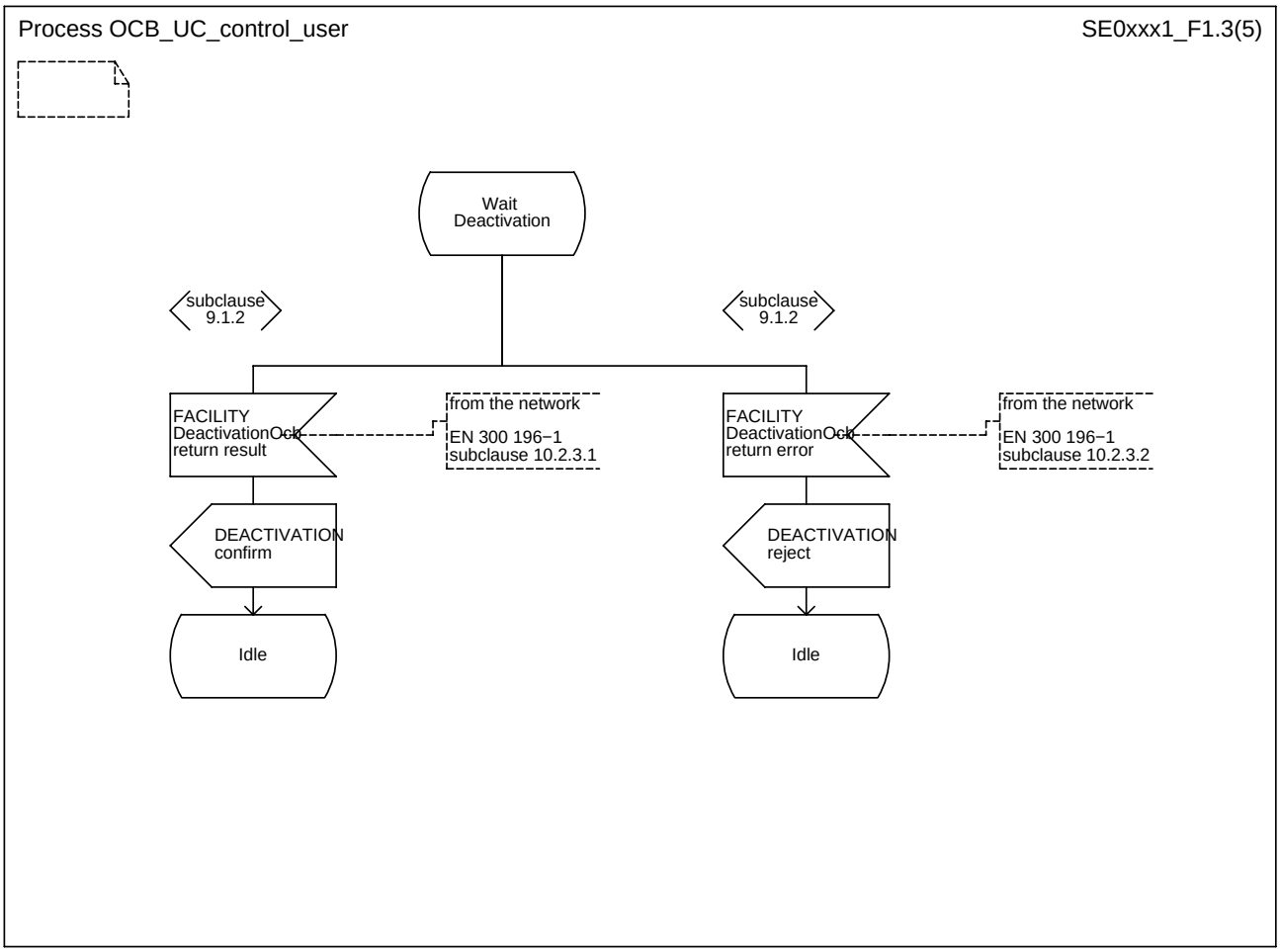


Figure 1 (sheet 3 of 5): OCB-UC management procedures - user side

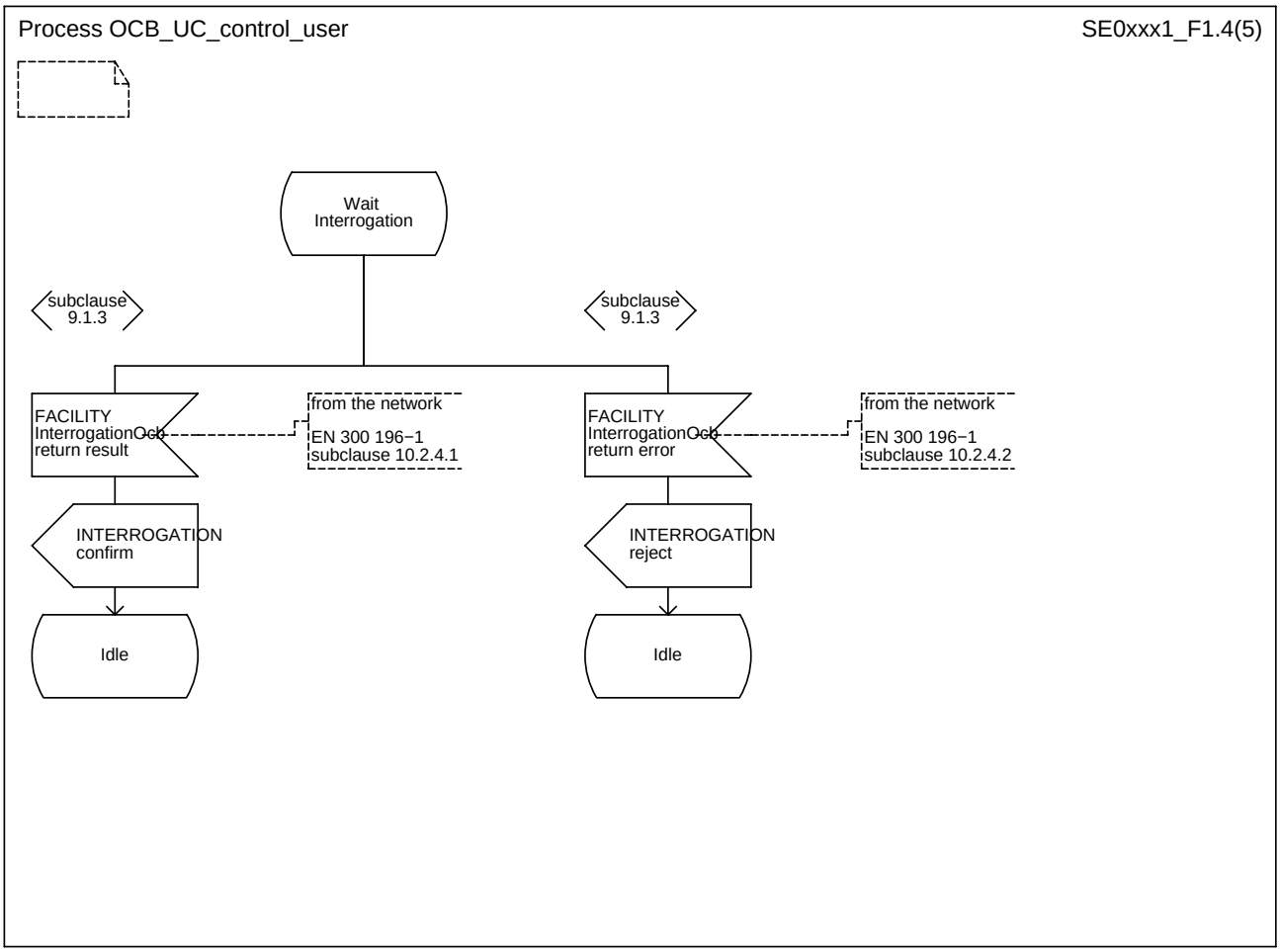


Figure 1 (sheet 4 of 5): OCB-UC management procedures - user side

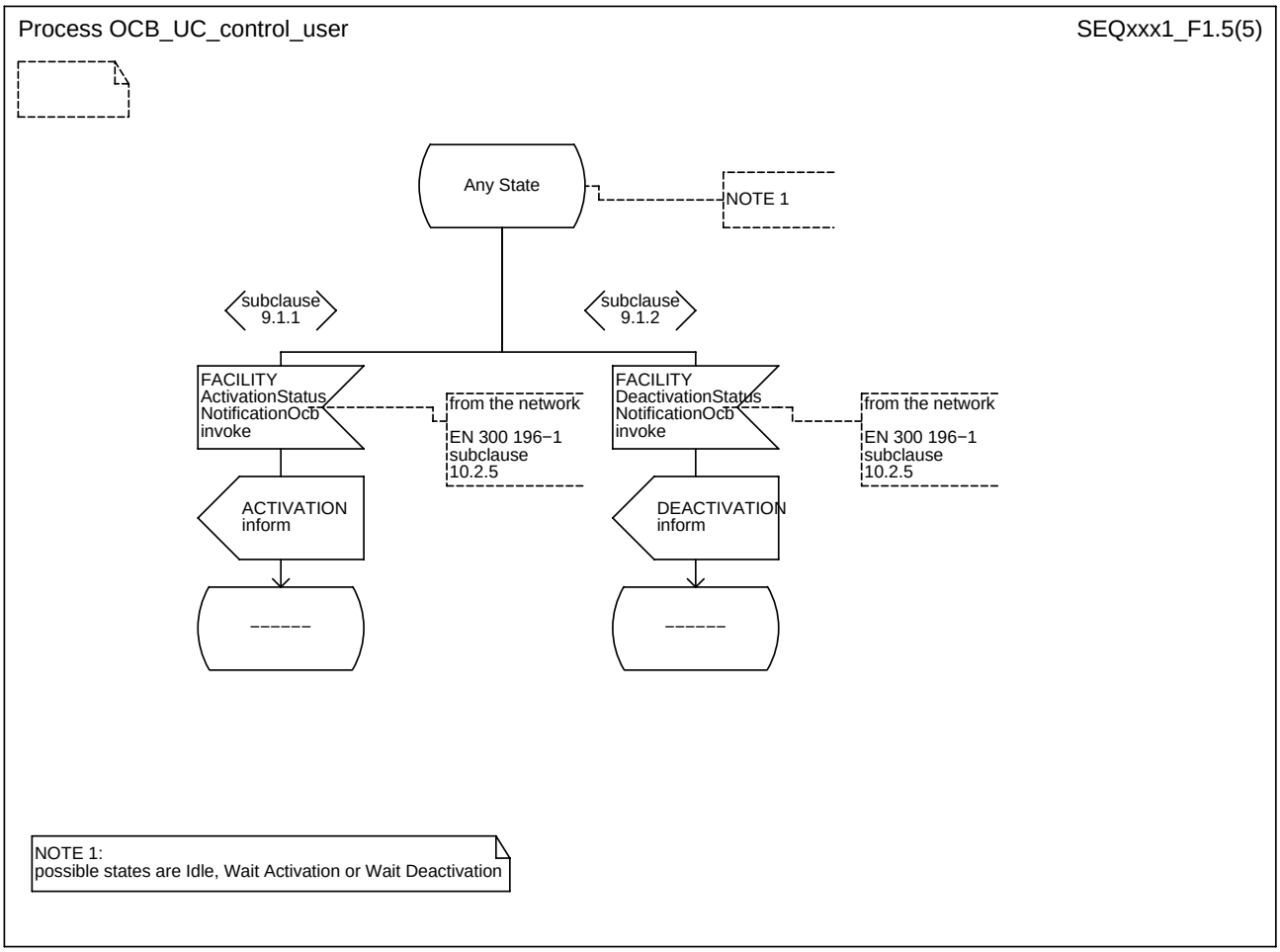


Figure 1 (sheet 5 of 5): OCB-UC management procedures - user side

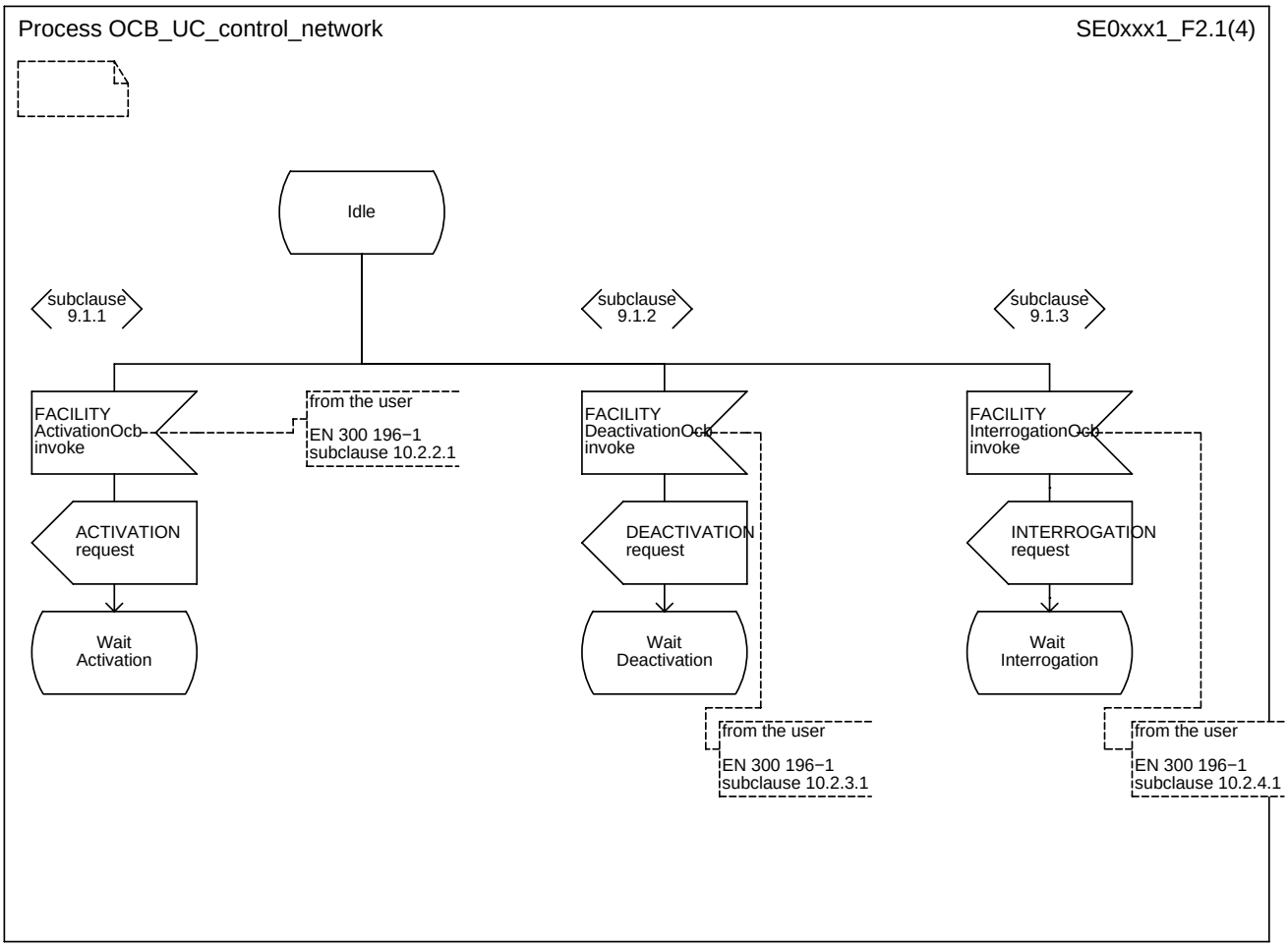


Figure 2 (sheet 1 of 4): OCB-UC management procedures - network side

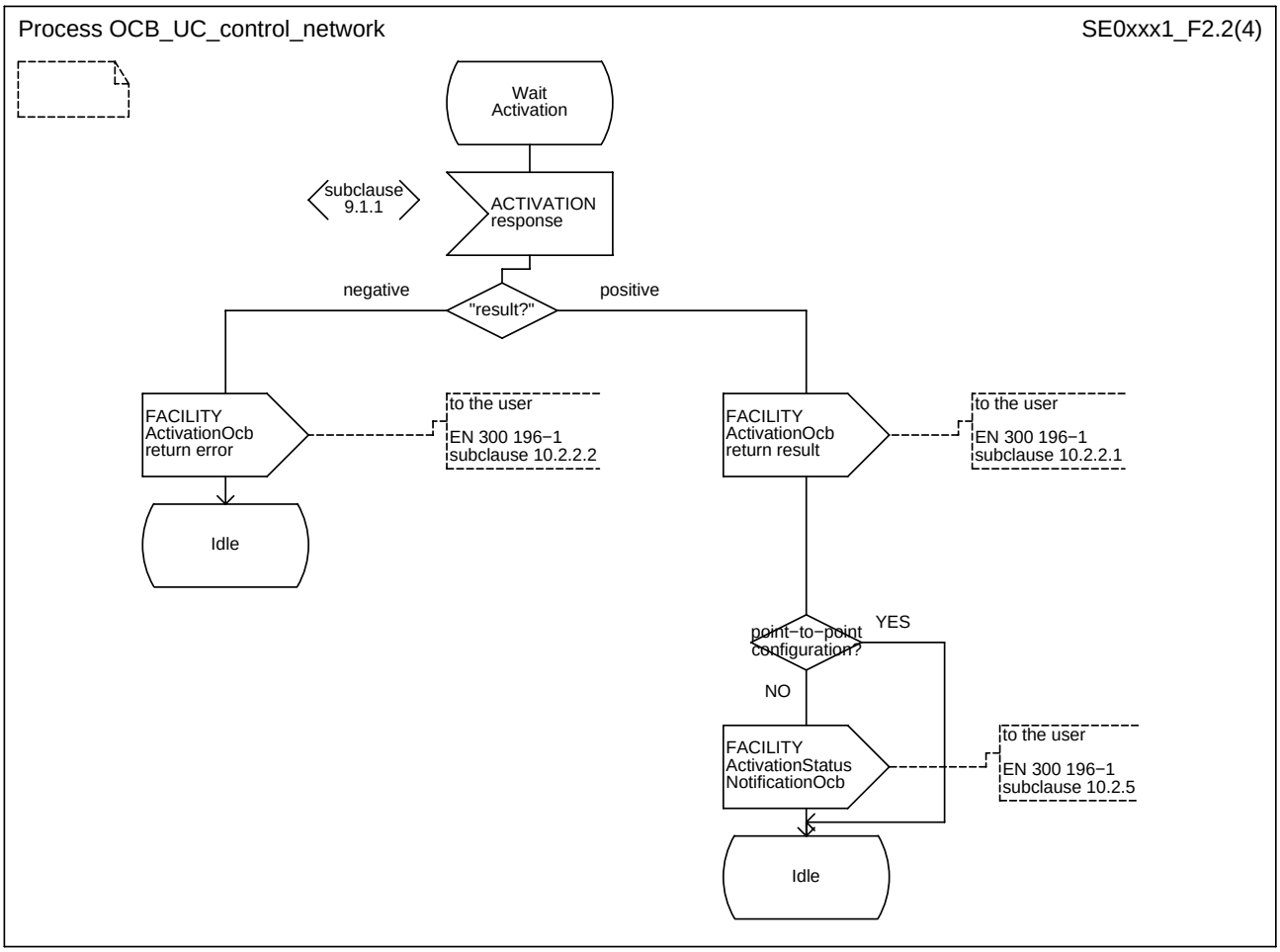


Figure 2 (sheet 2 of 4): OCB-UC management procedures - network side

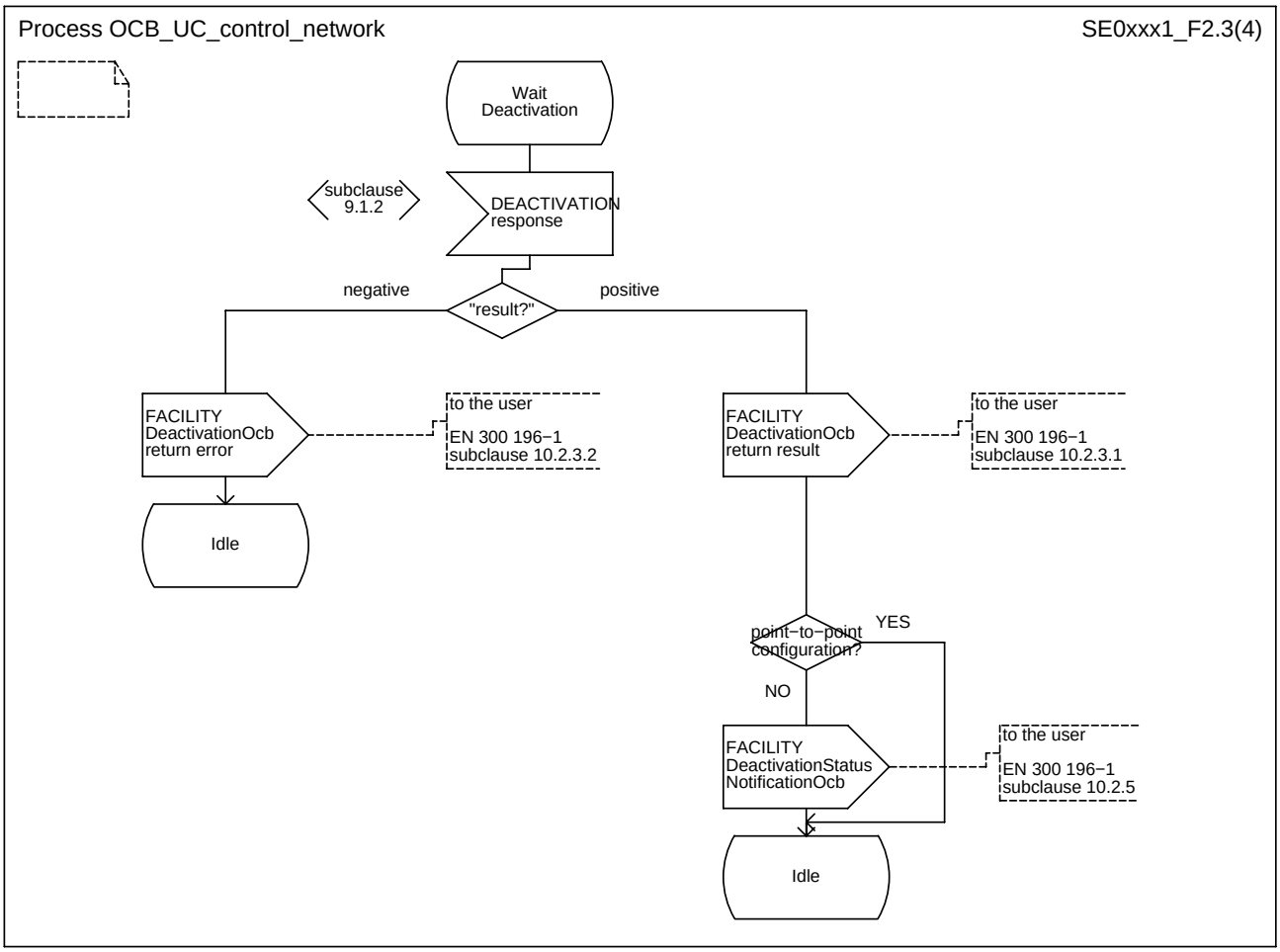


Figure 2 (sheet 3 of 4): OCB-UC management procedures - network side

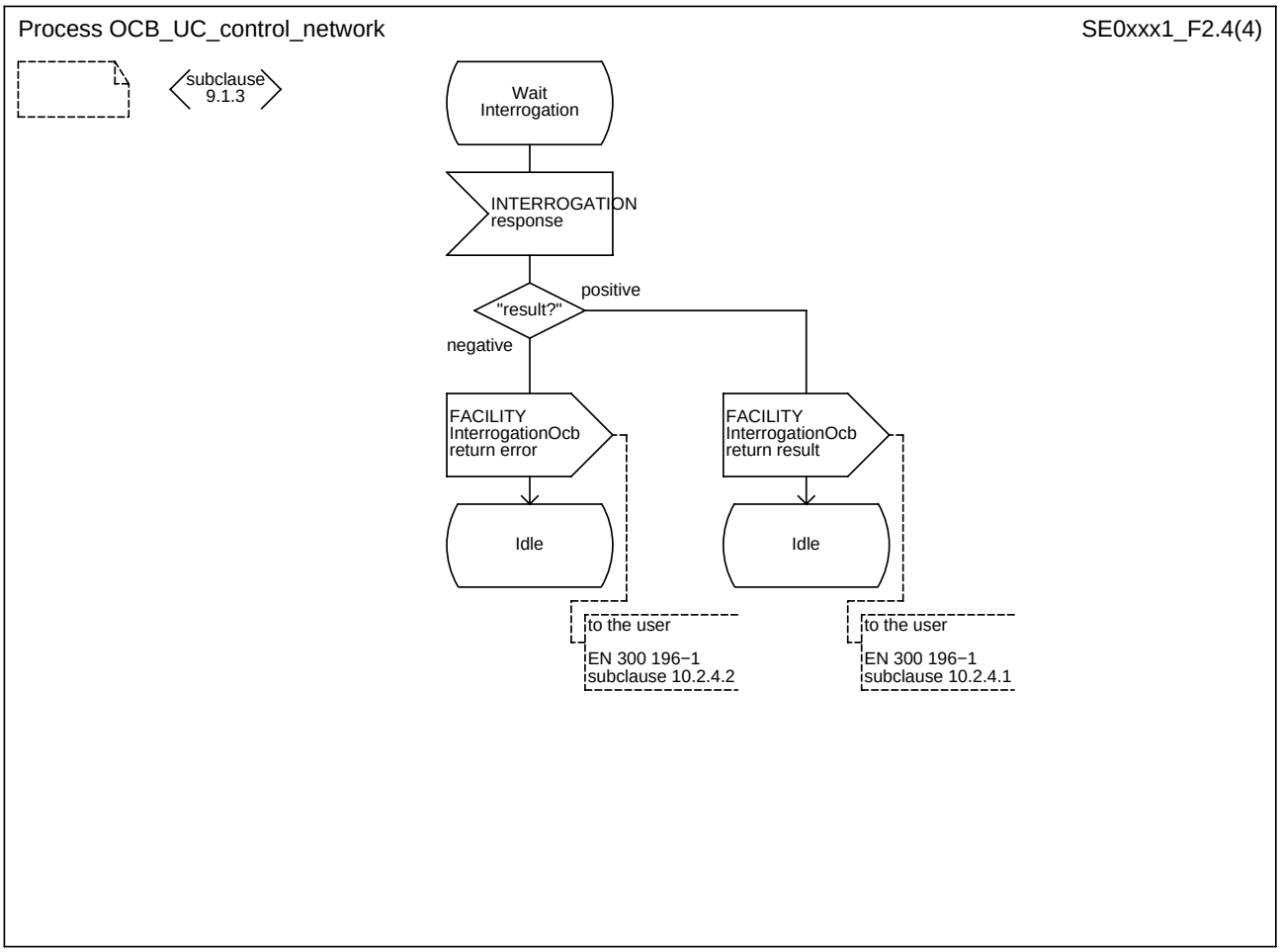


Figure 2 (sheet 4 of 4): OCB-UC management procedures - network side

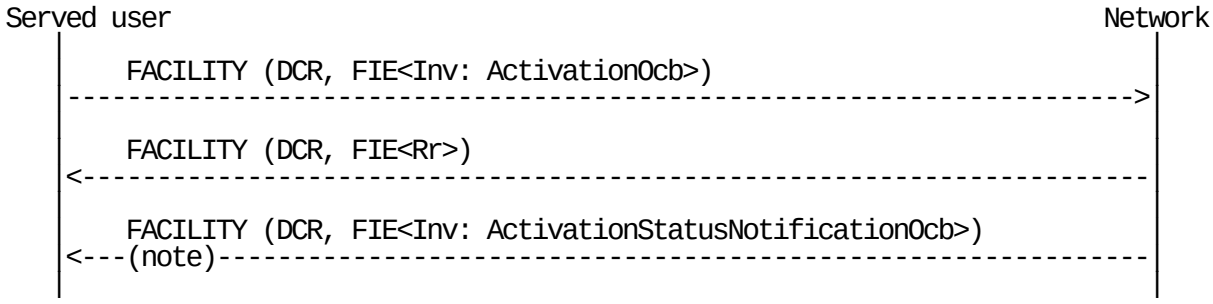
Annex A (informative): Signalling flows

This annex contains examples of signalling flows for the following OCB procedures:

Figure A.1: OCB-UC activation by the served user;
Figure A.2: OCB-UC deactivation by the served user;
Figure A.3: OCB-UC interrogation by the served user;
Figure A.4: OCB-F or OCB-UC invocation in case of en-bloc sending;
Figure A.5: OCB-F or OCB-UC invocation in case of overlap sending;
Figure A.6: OCB-UC invocation with disabling.

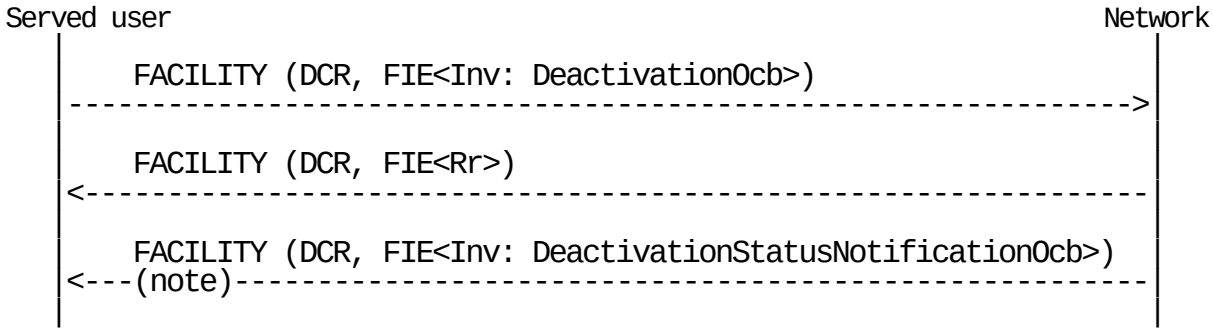
The following symbols are used in figures A.1 to A.6:

DCR	Dummy Call Reference
FIE	Facility Information Element
Inv	Invoke component
Rr	Return result component
ARG	Argument
CdPN	Called Party Number information element
CR	Call Reference information element



NOTE: At the coincident S and T reference point, this message is broadcast to all users on the served user's access. At the T reference point, this message is not sent.

Figure A.1: OCB-UC activation procedure



NOTE: At the coincident S and T reference point, this message is broadcast to all users on the served user's access. At the T reference point, this message is not sent.

Figure A.2: OCB-UC deactivation procedure

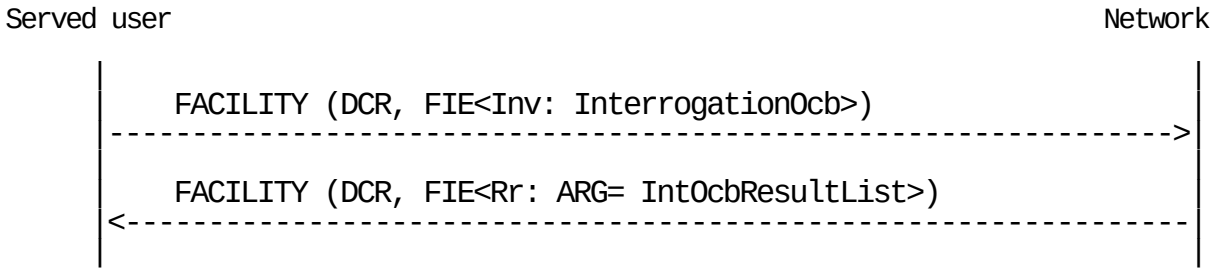
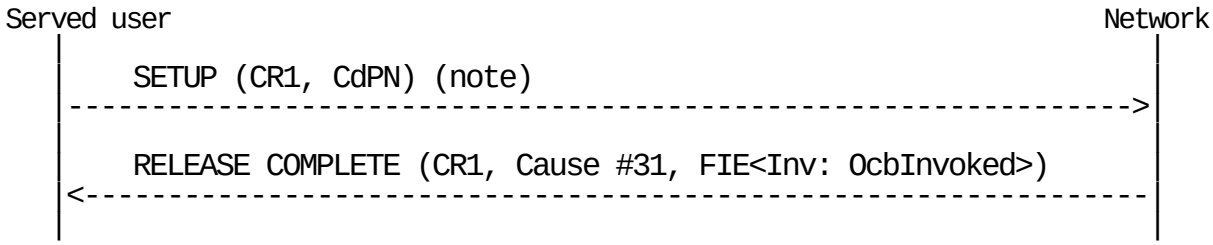
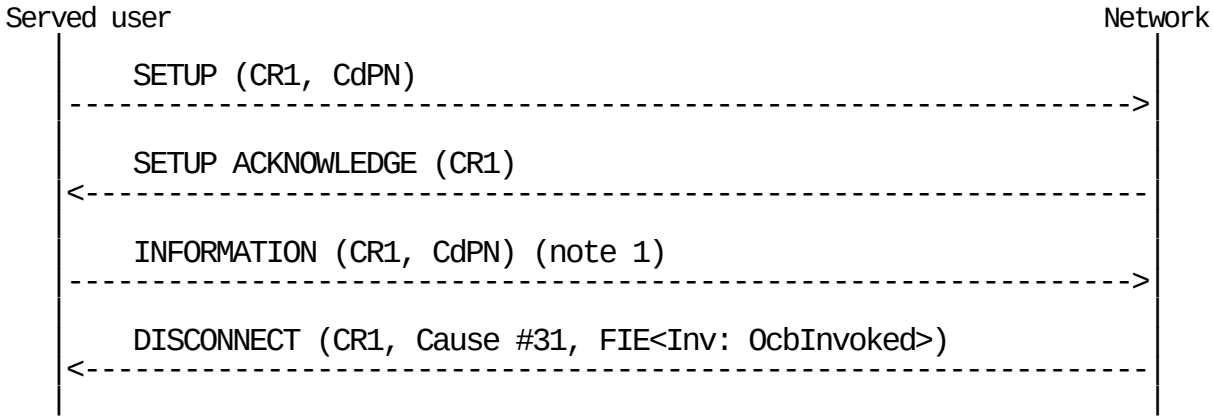


Figure A.3: OCB-UC interrogation



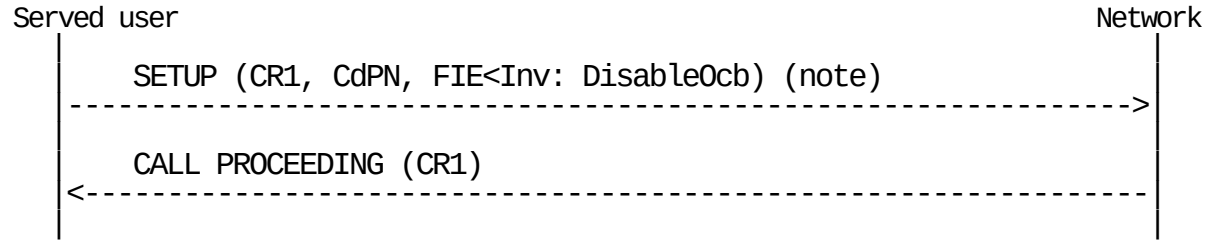
NOTE: The destination, identified by the Called party number, is to be barred according to the activated barring program.

Figure A.4: OCB-F or OCB-UC invocation in case of en-bloc sending



NOTE 1: During overlap sending the network determines that the destination, identified by the Called party number, is to be barred according to the activated barring program.
NOTE 2: The case is shown where the tone option is not required.

Figure A.5: OCB-F or OCB-UC invocation in case of overlap sending



NOTE: The destination, identified by the Called party number, is normally to be barred according to the activated barring program.

Figure A.6: OCB-UC invocation with disabling

Annex B (informative): Assignment of object identifier values

The following object identifier values are assigned in the present document:

```
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  1}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  2}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  3}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  4}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  5}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  6}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1)  7}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1) 10}
{ccitt identified-organization etsi(0) 1001 operations-and-errors(1) 11}
```

History

Document history				
V1.1.1	October 1997	Public Enquiry	PE 9805:	1997-10-03 to 1998-01-30
V1.2.1	May 1998	Vote	V 9830:	1998-05-18 to 1998-07-31