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European Standard (Telecommunications series)

Terrestrial Trunked Radio (TETRA);
Voice plus Data (V+D);
Part 10: Supplementary services stage 1;
Sub-part 18: Barring of Outgoing Calls (BOC)

ETSI

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - 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
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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Project Terrestrial Trunked Radio (TETRA).

The present document is part 10, sub-part 18 of a multi-part deliverable covering Voice plus Data (V+D), as identified below:

EN 300 392-1:   "General network design";

EN 300 392-2:   "Air Interface (AI)";

EN 300 392-3:   "Interworking at the Inter-System Interface (ISI)";

ETS 300 392-4:   "Gateways basic operation";

EN 300 392-5:   "Peripheral Equipment Interface (PEI)";

EN 300 392-7:   "Security";

EN 300 392-9:   "General requirements for supplementary services";

EN 300 392-10: "Supplementary services stage 1";

    EN 300 392-10-1:   "Call Identification (CI)";

    ETS 300 392-10-2:   "Call report";

    ETS 300 392-10-3:   "Talking Party Identification (TPI)";

    EN 300 392-10-4:   "Call Forwarding (CF)";

    ETS 300 392-10-5:   "List Search Call (LSC)";

    EN 300 392-10-6:   "Call Authorized by Dispatcher (CAD)";

    ETS 300 392-10-7:   "Short number addressing";

    EN 300 392-10-8:   "Area Selection (AS)";

    ETS 300 392-10-9:   "Access priority";

    EN 300 392-10-10:   "Priority Call (PC)";

    EN 300 392-10-11:   "Call Waiting (CW)";

    EN 300 392-10-12:   "Call Hold (CH)";

    ETS 300 392-10-13:   "Call completion to busy subscriber";

    EN 300 392-10-14:   "Late Entry (LE)";

ETS 300 392-10-15:   "Transfer of control";

EN 300 392-10-16:   "Pre-emptive Priority Call (PC)";

EN 300 392-10-17:   "Include Call (IC)";

EN 300 392-10-18:   "Barring of Outgoing Calls (BOC)";

EN 300 392-10-19:   "Barring of Incoming Calls (BIC)";

ETS 300 392-10-20:   "Discreet Listening (DL)";

EN 300 392-10-21:   "Ambience Listening (AL)";

EN 300 392-10-22:   "Dynamic Group Number Assignment (DGNA)";

ETS 300 392-10-23:   "Call completion on no reply";

ETS 300 392-10-24:   "Call Retention (CRT)";

EN 300 392-11:   "Supplementary services stage 2";

EN 300 392-12:   "Supplementary services stage 3";

ETS 300 392-13: "SDL model of the Air Interface (AI)";

ETS 300 392-14: "Protocol Implementation Conformance Statement (PICS) proforma specification";

TS 100 392-15:   "TETRA frequency bands, duplex spacings and channel numbering";

TS 100 392-16:   "Network Performance Metrics";

TS 100 392-17:   "TETRA V+D and DMO Release 1.1 specifications".

National transposition dates	
Date of adoption of this EN:	3 October 2003
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Date of withdrawal of any conflicting National Standard (dow):	31 July 2004

1   Scope

The present document defines the stage 1 specification of the Barring of Outgoing Call (BOC) supplementary service for the Trans-European Trunked Radio (TETRA). Stage 1 is an overall service description from the users point of view but does not deal with the details of the human interface itself.

The present document specifies the service description of the supplementary service and the procedures to be expected with successful and unsuccessful outcomes. In addition, the present document specifies the interactions with other TETRA supplementary services and interworking considerations.

Charging principles are outside the scope of the present document.

The Barring of Outgoing Call (BOC) supplementary service enables barring restriction for outgoing calls to be set.

2   References

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

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1]   ITU-T Recommendation Z.100: "Specification and Description Language (SDL)".

[2]   ETSI EN 300 392-10-4: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 10: Supplementary services stage 1; Sub-part 4: Call Forwarding (CF)".

3   Definitions and abbreviations

3.1   Definitions

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

affected user: user whose outgoing service or services are barred

authorized user: user who is permitted to bar outgoing calls of defined users

bearer service: type of telecommunication service that provides the capability for the transmission of signals between user-network interfaces

Switching and Management Infrastructure (SwMI): all of the TETRA equipment for a Voice plus Data (V+D) network except for subscriber terminals

   NOTE: The SwMI enables subscriber terminals to communicate with each other via the SwMI.

teleservice: type of telecommunications service that provides the complete capability, including terminal equipment functions, for communication between users according to agreed protocols

3.2 Abbreviations

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

AL	Ambience Listening
AP	Access Priority
AS	Area Selection
BIC	Barring of Incoming Calls
BOC	Barring of Outgoing Calls
CAD	Call Authorized by Dispatcher
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CFB	Call Forwarding on Busy
CFNRc	Call Forwarding on Not Reachable
CFNRy	Call Forwarding on No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identification Presentation
CLIR	Calling/Connected Line Identification Restriction
COLP	COnnected Line identification Presentation
CR	Call Report
CRT	Call ReTention
CW	Call Waiting
DGNA	Dynamic Group Number Assignment
DL	Discreet Listening
GTSI	Group TETRA Subscriber Identity
HOLD	call HOLD
IC	Include Call
ISDN	Integrated Services Digital Network
ITSI	Individual TETRA Subscriber Identity
LE	Late Entry
LSC	List Search Call
PC	Priority Call
PPC	Pre-emptive Priority Call
SDL	(functional) Specification and Description Language
SDS	Short Data Service
SNA	Short Number Addressing
SS	Supplementary Service

NOTE: The abbreviation SS is only used when referring to a specific supplementary service.

SwMI	Switching and Management Infrastructure
TETRA	Trans-European Trunked RAdio
TPI	Talking Party Identification

4 SS-BOC stage 1 specification

4.1 Description

4.1.1 General description

Barring of Outgoing Calls (BOC) is the facility whereby certain outgoing calls shall be barred. The barring can be set up and altered by the service provider. The authorized user may set and remove barring of the affected users.

The barring of outgoing calls is defined as ranges of barred numbers. Barring can be excluded for closed user groups and individual numbers inside the barred ranges of numbers as exceptions.

These ranges and exceptions may be applied independently to each service: circuit mode speech service, circuit mode data service and Short Data Service (SDS).

The service provider may define certain numbers such as "emergency numbers" to remain outside of barring although they are within barred ranges of numbers.

4.1.2   Qualifications on applicability to telecommunication services

Barring of outgoing call may be applicable independently to all TETRA teleservices, bearer services and short data services.

4.2   Procedures

4.2.1   Provision/Withdrawal

This service shall be provided by prior arrangement to affected users by the service provider.

The provision of the service shall be on a per TETRA Individual TETRA Subscriber Identity (ITSI)/Group TETRA Subscriber Identity (GTSI) basis. The authorized user(s) and served users shall be defined upon provision.

The service provider may withdraw this service at any time without a prior announcement.

4.2.2   Normal procedures

4.2.2.1   Activation, deactivation, definition, registration, interrogation and cancellation

4.2.2.1.1   Activation/Deactivation

The authorized user may activate or deactivate the supplementary service by definition process. This service may be permanently activated upon provision and deactivated upon withdrawal.

4.2.2.1.2   Definition

The authorized user may be able to set and remove barring for those affected users defined upon provision.

4.2.2.1.3   Registration

The authorized users shall be registered upon provision.

4.2.2.1.4   Interrogation

The Switching and Management Infrastructure (SwMI) may support interrogation for authorized users on the same affected users as the authorized user is allowed to use definition of barring. If interrogation is provided, SwMI shall support interrogation per affected user number.

4.2.2.1.5   Cancellation

Shall not be applicable.

4.2.2.2   Invocation and operation

This service shall be invoked by the TETRA system when the served user attempts to set up a call to a barred number. The served user shall receive an indication of barring and the call shall be rejected.

> NOTE: The ability of the served user to receive calls is not affected by SS-BOC and he may receive call from numbers he is not allowed to call.

4.2.3   Exceptional procedures

4.2.3.1   Activation, deactivation, definition, registration, interrogation and cancellation

4.2.3.1.1   Activation/Deactivation

Activation and deactivation is performed upon definition and there no additional exceptional procedures for activation nor deactivation.

4.2.3.1.2   Definition

If the infrastructure cannot accept a definition request then the cause shall be returned to the requesting user.

Possible causes may be:

- request failed for any reason;

- accepted, but definition values changed by SwMI;

- user not authorized;

- unknown TETRA identity;

- parameters not valid; or

- insufficient information.

4.2.3.1.3   Registration

Shall not be applicable.

4.2.3.1.4   Interrogation

If the SwMI cannot accept an interrogation request, the interrogating user shall receive a notification that a BOC interrogation was unsuccessful. Possible causes for rejection may be:

- request failed for any reason;

- accepted, but definition values changed by SwMI;

- user not authorized;

- unknown TETRA identity;

- parameters not valid; or

- insufficient information.

4.2.3.1.5   Cancellation

Shall not be applicable.

4.2.3.2   Invocation and operation

If the infrastructure cannot invoke the service, and no cause shall be returned to the calling nor served user.

4.3 Interactions with other supplementary services

4.3.1 Calling Line Identification Restriction (CLIR)

Not applicable as the call set-up is barred.

4.3.2 Connected Line Identification Presentation (CLIP)

Barring of outgoing calls shall not have any interaction with SS-CLIP.

4.3.3 Calling/COnnected Line Identification Presentation (COLP)

Barring of outgoing calls shall not have any interaction with SS-COLP.

4.3.4 Call Report (CR)

Barring of outgoing calls shall not have any interaction with SS-CR. A user cannot invoke CR on a call which is barred.

4.3.5 Talking Party Identification (TPI)

Barring of outgoing calls shall not have any interaction with SS-TPI.

4.3.6 Call Forwarding Unconditional (CFU)

SS-BOC takes precedence to SS-CFU and both SS-BOC and SS-CFU cannot be activated at the same time to the same user, refer to EN 300 392-10-4 [2].

4.3.7 Call Forwarding on Busy (CFB)

SS-BOC takes precedence to SS-CFB and both SS-BOC and SS-CFB cannot be activated at the same time to the same user, refer to EN 300 392-10-4 [2].

4.3.8 Call Forwarding on No Reply (CFNRy)

SS-BOC takes precedence to SS-CFNRy and both SS-BOC and SS-CFNRy cannot be activated at the same time to the same user, refer to EN 300 392-10-4 [2].

4.3.9 Call Forwarding on Not Reachable (CFNRc)

SS-BOC takes precedence to SS-CFNRc and both SS-BOC and SS-CFNRc cannot be activated at the same time to the same user, refer to EN 300 392-10-4 [2].

4.3.10 List Search Call (LSC)

Barring of outgoing calls shall not have any interaction with SS-LSC. Barring of (attendants) of the search list shall not be checked. The list itself may be a barred address.

4.3.11 Call Authorized by Dispatcher (CAD)

Barring of outgoing calls shall not have any interaction with SS-CAD. If both CAD and BOC are activated on the required service then the CAD shall take precedence. The dispatcher number may be a barred number.

4.3.12 Short Number Addressing (SNA)

Barring of outgoing calls shall not have any interaction with SS-SNA. SS-SNA-2 may override SS-BOC.

4.3.13   Area Selection (AS)

BOC shall take precedence over SS-AS.

4.3.14   Access Priority (AP)

Barring of outgoing calls shall not have any interaction with SS-AP.

4.3.15   Priority Call (PC)

Barring of outgoing calls shall not have any interaction with SS-PC. The priority calls may be also barred.

4.3.16   Call Waiting (CW)

Barring of outgoing calls shall not have any interaction with SS-CW.

4.3.17   Call Hold (HOLD)

Barring of outgoing calls shall not have any interaction with SS-HOLD. The affected user's call to a barred address shall not proceed.

4.3.18   Call Completion to Busy Subscriber (CCBS)

Barring of outgoing calls shall not have any interaction with SS-CCBS. The barred call never proceeds to a state where call completion could be invoked.

4.3.19   Late Entry (LE)

Not applicable.

4.3.20   Void

4.3.21   Pre-emptive Priority Call (PPC)

Barring of outgoing calls shall not have any interaction with SS-PPC. Pre-emptive priority calls may also be barred.

4.3.22   Include Call (IC)

Barring of outgoing calls shall not have any interaction with SS-IC. The affected user's inclusion of a barred destination shall not proceed.

4.3.23   Void

4.3.24   Barring of Outgoing Calls (BOC)

Not applicable.

4.3.25   Barring of Incoming Calls (BIC)

Barring of outgoing calls shall not have any interaction with barring of incoming calls.

4.3.26   Discreet Listening (DL)

Barring of outgoing calls shall not have any interaction with SS-DL. DL cannot proceed to a barred address.

4.3.27 Ambience Listening (AL)

Barring of outgoing calls shall not have any interaction with SS-AL. AL cannot proceed to a barred address.

4.3.28 Dynamic Group Number Assignment (DGNA)

Barring of outgoing calls shall not have any interaction with SS-DGNA.

4.3.29 Call Completion on No Reply (CCNR)

Barring of outgoing calls shall not have any interaction with SS-CCNR. The barred call never proceeds to a state where call completion could be invoked.

4.3.30 Call ReTention (CRT) priority

Barring of outgoing calls shall not have any interaction with SS-CRT priority. The barred call never proceeds to a state where call retention would operate.

4.4 Interworking considerations

The barring of outgoing calls may be available upon service provider agreement across the intersystem interface.

4.5   Overall SDL

Figure 1 contains the dynamic description of SS-BOC using the Specification and Description Language (SDL) defined in ITU-T Recommendation Z.100 [1]. The SDL process represents the behaviour of the network in providing SS-BOC.
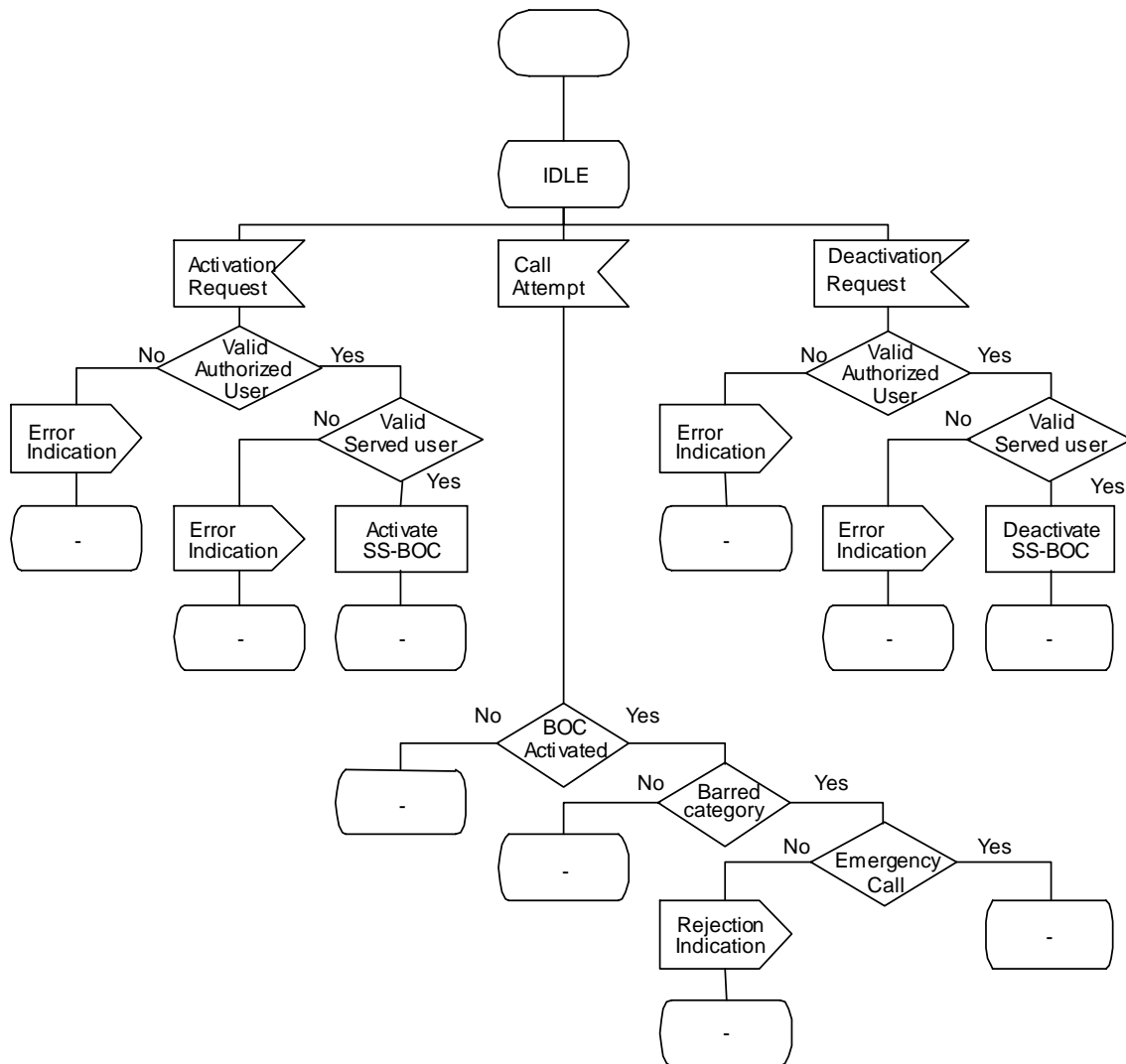

Figure 1: BB-BOC overview SDL

Annex A (informative):
Bibliography

ITU-T Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

Annex B (informative):
Change Requests

The present version of the present document contains change requests as described in table B.1.

Table B.1:   Change requests

No	CR version	Standard version	Clauses affected	Title	CR Status
001	10	V1.2.1	4.3.7, 4.3.8, 4.3.9	Correction of editorial errors in interactions with SS-CF	WG3 approved 030409

History

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V1.2.1	September 2002	Publication
V1.3.0	June 2003	One-step Approval Procedure OAP 20031003: 2003-06-04 to 2003-10-03
V1.3.1	October 2003	Publication