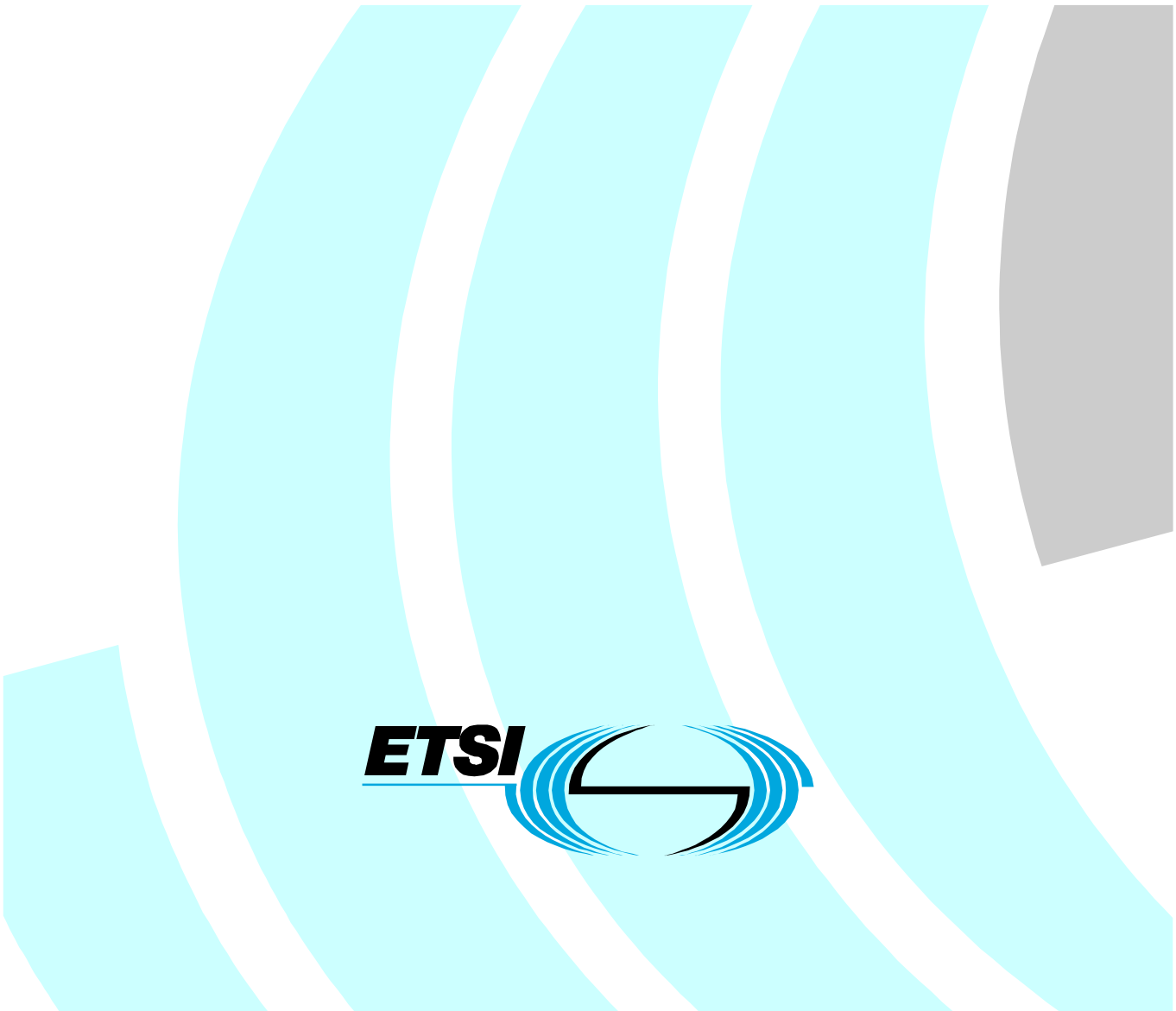
ETSI EN 300 392-10-8 V1.2.1 (2004-02)

European Standard (Telecommunications series)

Terrestrial Trunked Radio (TETRA);
Voice plus Data (V+D);
Part 10: Supplementary services stage 1;
Sub-part 8: Area Selection (AS)



Reference
REN/TETRA-03119

Keywords
area select, data, radio, speech, stage 1,
supplementary service, TETRA, V+D

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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 8 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 (HOLD)";

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";

ETS 300 392-10-16: "Pre-emptive priority call";

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:	6 February 2004
Date of latest announcement of this EN (doa):	31 May 2004
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 November 2004
Date of withdrawal of any conflicting National Standard (dow):	30 November 2004

Introduction

Supplementary services specifications are produced in three stages, according to the method described in ITU-T Recommendation I.210 [1]. The present document contains the stage 1 specification of SS-AS. The stage 1 descriptions specify the supplementary services as seen by users of networks.

1 Scope

The present document defines the stage 1 specifications of the Area Selection (AS) supplementary service for the Terrestrial Trunked Radio (TETRA) system supporting Voice plus Data (V+D). 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.

Area Selection (AS) allows an authorized user to define areas for selection and a served user to choose, on a call by call basis, a selected area to be used for establishing a call.

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 I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".

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

3 Definitions and abbreviations

3.1 Definitions

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

authorized user: user who can define areas

selected area: operator and/or user defined area invoked by a served user to restrict the call set up area

served user: originator of the call who invokes SS-AS for his call to be set-up within a defined area

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.

3.2 Abbreviations

3.2.1 General abbreviations

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

CAD	SS-Call Authorized by Dispatcher
GTSI	Group TETRA Subscriber Identity
ISDN	Integrated Services Digital Network
ITSI	Individual TETRA Subscriber Identity
SDL	(Functional) Specification and Description Language
SS	Supplementary Service

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

SwMI	Switching and Management Infrastructure

3.2.2 Supplementary service abbreviations

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

AS	Area Selection
BOC	Barring of Outgoing Calls
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CR	Call Report

4 SS-AS stage 1 specification

4.1 Description

4.1.1 General description

Area Selection (AS) allows an authorized user to define areas for selection and a served user to choose, on a call by call basis, a selected area to be used for establishing a call. This SS-AS shall not restrict normal roaming (e.g. the call re-establishment facility). SS-AS may also be used to restrict areas for other services.

4.1.2 Qualifications on applicability to telecommunication services

This supplementary service shall be applicable independently to all TETRA teleservices and bearer services, to short data service and to certain supplementary services.

4.2 Procedures

4.2.1 Provision/Withdrawal

SS-AS shall be available to all TETRA users who have subscribed to this service.

The service may be withdrawn by the service provider(s), or by pre-arrangement by the service provider.

As a network option, authorized users may define areas. If this option is supported, authorized users shall be identified upon provision.

A Switching and Management Infrastructure (SwMI) may offer more or less definitions than those specified below:

- all SwMI;
- home SwMI;
- visited SwMI;
- third SwMI (to be specified);
- within the calling party's cell;
- calling party's cell and adjacent cells;
- user specific areas.

4.2.2 Normal procedures

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

4.2.2.1.1 Activation and deactivation

SS-AS shall be activated upon provision and deactivated upon withdrawal.

4.2.2.1.2 Definition

An authorized user shall be able to define areas for later invocation. Areas can also be predefined by the network. One or several user specific areas may be defined using a standardized procedure based on standard geographical co-ordinates.

Restrictions for area definition shall be an operator option.

4.2.2.1.3 Registration

An authorized user shall be required to be registered.

4.2.2.1.4 Interrogation

The served user shall be able to interrogate his/her defined areas with their definitions and the interrogation response shall contain all parameters which are relevant to the served user. These can be:

- service provided;
- areas available for the served user and their corresponding definition.

The authorized user may be able to interrogate areas available for a certain Individual TETRA Subscriber Identity (ITSI)/Group TETRA Subscriber Identity (GTSI) with their definitions and the interrogation response shall contain all parameters which are relevant to the interrogating user. These can be:

- areas available to the authorized user for definition and their corresponding definition.

The authorized user may interrogate SS-AS and the interrogation response shall contain all parameters which are relevant to the interrogating user. These can be:

- list of ITSI/GTSI for which the authorized user has defined areas.

4.2.2.1.5 Cancellation

Not applicable.

4.2.2.2 Invocation and operation

The SS-AS shall be invoked by the served user on a call per call basis. The area selection information shall be sent as part of the call set-up phase.

The AS information is a reference to a defined area. The call shall be set up only in the selected area.

The area used for a call set up shall be either a pre-set area that can be defined upon provision or redefined by an authorized user or an area selected by the calling user upon invocation.

4.2.3 Exceptional procedures

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

4.2.3.1.1 Activation and deactivation

Not applicable.

4.2.3.1.2 Definition

If a definition is not acceptable the TETRA system shall send a rejection response with a suitable cause. Possible causes can be:

- service not provided;
- defined area larger than the provided area;
- not enough or unsuitable information;
- user not authorized to make an area definition for the used ITSI or GTSI.

4.2.3.1.3 Registration

Not applicable.

4.2.3.2 Interrogation

If an interrogation is not acceptable the TETRA system shall send a rejection response with a suitable cause. Possible causes can be:

- service not provided;
- not enough or unsuitable information;
- service not available;
- user not authorized to make area definition interrogation for the used ITSI or GTSI.

4.2.3.2.1 Cancellation

Not applicable.

4.2.3.3 Invocation and operation

When invoking SS-AS, the served user may select an undefined area. In this case the SwMI shall reject the call with an indication to the served user.

4.3 Interactions with other supplementary services

4.3.1 Calling line identification presentation

Area selection shall not have any interaction with calling line identification presentation.

4.3.2 Connected line identification presentation

Area selection shall not have any interaction with calling line identification presentation.

4.3.3 Calling/Connected line identification restriction

Area selection shall not have any interaction with calling/connected line identification restriction.

4.3.4 Call report

The area selection shall take precedence over SS-Call Report (CR). Call report shall not be forwarded to a called party who is outside the selected area until he returns inside the selected area.

4.3.5 Talking party identification

Area selection shall not have any interaction with talking party identification.

4.3.6 Call forwarding unconditional

The call may be forwarded as long as the diverted-to party is within the selected area.

4.3.7 Call forwarding on busy

The call may be forwarded as long as the diverted-to party is within the selected area.

4.3.8 Call forwarding on no reply

The call may be forwarded as long as the diverted-to party is within the selected area.

4.3.9 Call forwarding on not reachable

The call may be forwarded as long as the diverted-to party is within the selected area.

4.3.10 List search call

The area selection shall be applicable to each number in the list.

4.3.11 Call authorized by dispatcher

SS-Call Authorized by Dispatcher (CAD) shall take precedence over area selection. The dispatcher can change the area selected by the user.

4.3.12 Talking party identification

Area selection shall not have any interaction with talking party identification.

4.3.13 Area selection

Not applicable.

4.3.14 Access priority

Area selection shall not have any interaction with access priority.

4.3.15 Priority call

Area selection shall not have any interaction with priority call.

4.3.16 Call waiting

Area selection shall not have any interaction with call waiting.

4.3.17 Call hold

Area selection shall not have any interaction with call hold.

4.3.18 Call completion on busy subscriber

SS-Call Completion to Busy Subscriber (CCBS) may be invoked as long as the called party remains in the selected area. Once the called party moves out the selected area, SS-CCBS shall be automatically cancelled and the call shall not be set up.

4.3.19 Late entry

Area selection shall not have any interaction with late entry.

4.3.20 Transfer of control

Area selection shall not have any interaction with transfer of control.

4.3.21 Pre-emptive priority call

Area selection shall not have any interaction with pre-emptive priority call.

4.3.22 Include call

Area selection shall not have any interaction with include call.

4.3.23 Advice of charge

Area selection shall not have any interaction with advice of charge.

4.3.24 Barring of outgoing calls

SS-BOC shall take precedence over SS-AS. The SS-AS shall be restricted in accordance with SS-Barring of Outgoing Calls (BOC).

4.3.25 Barring of incoming calls

Area selection shall not have any interaction with barring of incoming calls.

4.3.26 Discreet listening

Area selection shall not have any interaction with discreet listening.

4.3.27 Ambience listening

Area selection shall not have any interaction with ambience listening.

4.3.28 Dynamic group number assignment

Area selection shall not have any interaction with dynamic group number assignment.

4.3.29 Call completion on no reply

SS-Call Completion on No reply (CCNR) may be invoked as long as the called party remains in the selected area. Once the called party moves out the selected area, SS-CCNR shall be automatically cancelled and the call shall not be set up.

4.3.30 Call retention priority

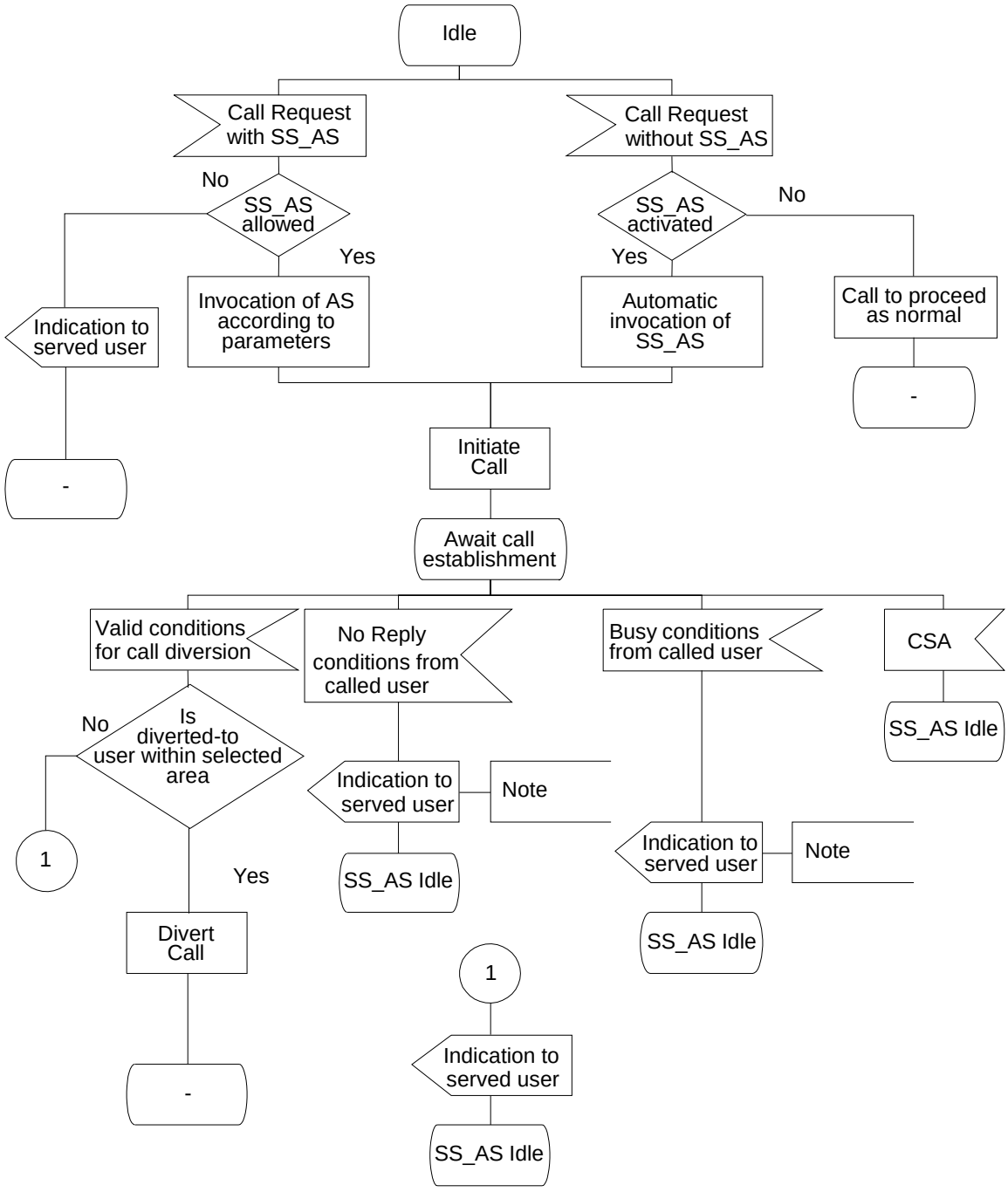
Area selection shall not have any interaction with call retention priority.

4.4 Interworking considerations

The specific area definitions of different networks may be constructed differently, and the area selection may not be possible when a visiting mobile terminal wants to select areas outside of its home network. A mobile visiting another network may still select areas within its own network, or may use the standardized procedure built on geographical co-ordinates.

4.5 Overall SDL

Figure 1 contains the dynamic description of SS-AS using the Specification Description Language (SDL) defined in ITU-T Recommendation Z.100 [2]. The SDL process represents the behaviour of the network in providing SS-AS.



NOTE: After receipt of indication, the served user may invoke other supplementary services, e.g. CCBS.

Figure 1: SS-AS, Overall SDL

Annex A (informative): Change Requests

The present document contains Change Requests as described in table A.1.

Table A.1: Change Requests

No	CR vers.	Standard Version	Clause affected	Title	CR Status
001	01	Ed. 1	4.3.24	SS-BOC takes precedence over SS-AS	Proposal
002					

Annex B (informative): Bibliography

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

History

Document history		
Edition 1	April 1996	Publication as ETS 300 392-10-8
V1.2.1	October 2003	One-step Approval Procedure OAP 20040206: 2003-10-08 to 2004-02-06
V1.2.1	February 2004	Publication