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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is a multi-part standard and will consist of the following parts:

- Part 1: "General network design".
- Part 2: "Air Interface (AI)".
- Part 3: "Inter-working", (DE/RES-06001-3).
- Part 4: "Gateways", (DE/RES-06001-4).
- Part 5: "Terminal equipment interface", (DE/RES-06001-5).
- Part 6: "Line connected stations", (DE/RES-06001-6).
- Part 7: "Security", (DE/RES-06001-7).
- Part 8: "Management services", (DE/RES-06001-8).
- Part 9: "Performance objectives", (DE/RES-06001-9).
- Part 10: "Supplementary services stage 1".**
- Part 11: "Supplementary services stage 2", (DE/RES-06001-11).
- Part 12: "Supplementary services stage 3", (DE/RES-06001-12).
- Part 13: "SDL Model of the Air Interface", (DE/RES-06001-13).
- Part 14: "PICS Proforma", (DE/RES-06001-14).
- Part 15: "Inter-working - Extended Operations", (DE/RES-06001-15).
- Part 16: "Gateways for Supplementary Services", (DE/RES-06001-16).

<b>Transposition dates</b>	
Date of adoption of this ETS:	1 March 1996
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## 1 Scope

This European Telecommunication Standard (ETS) defines the stage 1 specifications of the Ambience Listening (AL) supplementary service for the Trans-European Trunked RAdio (TETRA) as provided by European operators. 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.

This ETS specifies the service description of the supplementary service and the procedures to be expected with successful and unsuccessful outcomes. In addition this ETS specifies the interactions with other TETRA supplementary services and inter-working considerations.

Charging principles are outside the scope of this ETS.

The AL supplementary service enables a control point to place a TETRA Mobile Station (MS) (or Line Station (LS)) into a special type of individual voice call teleservice whereby the called MS (or LS) shall transmit without any action from, or indication to, the called user.

## 2 Normative references

This ETS incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation Z.100 (1993): "Specification and Description Language (SDL)".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of this ETS, the following definitions apply:

**Mobile Station (MS):** A physical grouping that contains all of the mobile equipment that is used to obtain TETRA services. By definition, a mobile station contains at least one Mobile Radio Stack (MRS).

**monitoring party:** The served user who is invoking the supplementary service.

**Switching And Management Infrastructure (SwMI):** All of the TETRA equipment for a Voice plus Data (V+D) network except for subscriber terminals. 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 this ETS, the following general abbreviations apply:

GTSI	Group TETRA Subscriber Identity
ISDN	Integrated Services Digital Network
ITSI	Individual TETRA Subscriber Identity
LS	Line Station
MS	Mobile Station
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  
TETRA Trans-European Trunked RAdio

### 3.2.2 Supplementary service abbreviations

For the purposes of this ETS, the following supplementary service abbreviations apply:

AL	Ambience Listening
AoC	Advice of Charge
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
CFNRy	Call Forwarding on No Reply
CFNRc	Call Forwarding on Not Reachable
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identification Presentation
CLIR	Calling/Connected Line Identification Restriction
COLP	COConnected Line identification Presentation
CR	Call Report
CRT	Call ReTention
CW	Call Waiting
DGNA	Dynamic Group Number Assignment
DL	Discreet Listening
HOLD	Call HOLD
IC	Include Call
LE	Late Entry
LSC	List Search Call
PC	Priority Call
PPC	Pre-emptive Priority Call
SNA	Short Number Addressing
TC	Transfer of Control
TPI	Talking Party Identification

## 4 SS-AL stage 1 specification

### 4.1 Description

#### 4.1.1 General description

Ambience listening shall be defined as the facility whereby a control point may place a TETRA MS (or LS) into a special type of individual voice call teleservice so that the called MS (or LS) shall transmit without any action from, or indication to, the called user. Ambience listening shall only be set-up if the called unit is not already engaged in a call. This ETS shall not preclude that during ambience listening the called mobile may make and receive calls as normal.

NOTE: A user can ask for SS-AL to be invoked on himself/herself by sending a pre-defined short data status to another user.

#### 4.1.2 Qualifications on applicability to telecommunications services

Ambience listening shall be a special TETRA speech service.



## **4.2 Procedures**

### **4.2.1 Provision/Withdrawal**

This service shall be provided by prior arrangement with the service provider. The service provider shall be able to provide this service on a selective basis to individual TETRA users whilst barring it from others.

To provide AL, the served user shall supply to the operator:

- the Individual TETRA Subscriber Identity (ITSI)s of MSs (and/or LSs) that may be monitored.

Verification of the MS (LS) ITSIs shall be accomplished before completing the ambience listening provision. This verification shall be done by a check on the MS (LS) numbers to ascertain if they are within the jurisdiction of the user, and within the allowed number range.

When the monitoring party is provided with SS-AL, the service provider shall return notification of acceptance or rejection of the request.

This service may be withdrawn by the service provider.

### **4.2.2 Normal procedures**

#### **4.2.2.1 Activation/Deactivation, Definition, Registration, Interrogation, Cancellation**

##### **4.2.2.1.1 Activation/Deactivation**

The supplementary service shall be permanently activated by the service provider as a result of the provision. SS-AL shall be deactivated by the service provider as a result of withdrawal.

##### **4.2.2.1.2 Definition**

This procedure shall not be applicable.

##### **4.2.2.1.3 Registration**

The registration procedure shall be carried out at the provision stage, and shall include the determination by the network as to whether the user has the authority to use the service and MSs (LSs) ITSIs to be monitored.

##### **4.2.2.1.4 Interrogation**

The TETRA response to an interrogation request shall provide the following information to the user:

- activated or deactivated state of the supplementary service;
- the ITSIs that may be monitored;
- if invoked, the MS (or LS) being monitored.

##### **4.2.2.1.5 Cancellation**

This procedure shall not be applicable.

#### **4.2.2.2 Invocation and operation**

##### **4.2.2.2.1 Invocation and operation**

The supplementary service shall be invoked for a teleservice by the appropriate procedures being used by the monitoring party and only if the supplementary service is activated. The invocation of the supplementary service shall constitute an individual call set up.

To invoke AL, the served user shall supply:

- the MS (or LS) to be monitored;
- whether the transmission shall be clear or encrypted or unprotected speech;
- a password, may be required as an implementation option.

When the served user so invokes AL, the service provider shall return notification of acceptance or rejection of the request.

When the request is accepted the network shall continue the call set up attempt with the called MS or LS. If the called MS or LS is not reachable it shall be possible to lodge a request with the network to complete the call using the call completion supplementary service when the called party is reachable.

If available the called MS or LS shall acknowledge the call set up request and the call shall be established.

Once the call is established, the called MS or LS shall enter a transmit mode, opening the microphone. This state shall remain until such time as the monitoring party clears the call down or another call to or from the called MS or LS intervenes. The called MS or LS shall not show any indication to the user that it has entered the ambient listening mode.

**NOTE:** If the called party is busy, the monitoring party may invoke discreet listening.

If the called party is already being ambience listened-to, then the served user shall receive an indication, and, depending on the implementation option, may be given an opportunity to join the AL call (otherwise the served user shall receive a busy indication). If the user joins the ongoing AL call, an indication shall be given to all ongoing ambient listeners that another ambient listener has joined in.

#### **4.2.2.2 Completion**

The supplementary service call shall be completed either by the call being cleared down by the calling party, or by the called party making or receiving a call.

It is possible that depending on the implementation option offered, that the new call may not clear down the ambience listening service.

### **4.2.3 Exceptional procedures**

#### **4.2.3.1 Activation, Deactivation, Definition, Registration, Interrogation, Cancellation**

##### **4.2.3.1.1 Activation**

If the system cannot accept an activation request, the monitoring party shall receive a notification that the ambience listening activation was not successful. Possible causes can be:

- called MS/LS not authorized;
- called MS/LS is the monitoring party's number;
- insufficient information.

##### **4.2.3.1.2 Deactivation**

If the service provider cannot accept the monitoring party's request for deactivation, the cause shall be returned to the subscriber, such as:

- service not subscribed to;
- insufficient, incorrect or inconsistent information.

If the service provider deactivates ambience listening without the monitoring party having requested deactivation (e.g. when an exceptional condition occurs), the monitoring party shall receive notification accompanied by the cause. This notification shall only be sent when a dedicated resource is available.

#### **4.2.3.1.3 Definition**

Shall not be applicable

#### **4.2.3.1.4 Registration**

If the system cannot accept a registration request, the monitoring party shall receive a notification that ambience listening registration was not successful. Possible causes can be:

- service not subscribed to;
- insufficient information.

#### **4.2.3.1.5 Interrogation**

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

- service not subscribed to;
- insufficient information.

#### **4.2.3.1.6 Cancellation**

Shall not be applicable

#### **4.2.3.1.7 Invocation and operation**

If the SwMI cannot invoke the service, the cause shall be returned to the subscriber, such as:

- called unit is busy;
- resources not available;
- not activated;
- called MS/LS not reachable.

### **4.3 Interactions with other supplementary services**

#### **4.3.1 Calling Line Identification Presentation (CLIP)**

If the called MS (or LS) subscriber has subscribed to SS-CLIP, the called MS (or LS) shall not display the identity of the ambient listener.

#### **4.3.2 Connected Line Identification Presentation (COLP)**

Ambience listening shall not have any interaction with SS-COLP.

If the monitoring party has SS-COLP, they shall receive the identity of the subscriber that they are ambient listening to.

#### **4.3.3 Calling/Connected Line Identification Restriction (CLIR)**

In the case where the monitoring party has been connected to the called subscriber and the latter has subscribed to SS-CLIR, then the ambient listening supplementary service shall take precedence and the called subscribers line shall be presented to the monitoring party.

#### **4.3.4 Call Report (CR)**

The ambient listening supplementary service shall ensure that no CR shall be left at the called party's terminal.

#### **4.3.5 Talking Party Identification (TPI)**

Ambience listening shall not have any interaction with SS-TPI.

Monitoring party has subscribed to service: After the monitoring subscriber has been connected, they shall receive an indication of the identity of the party that they are ambient listening to.

#### **4.3.6 Call Forwarding Unconditional (CFU)**

The ambient listening shall override SS-CFU and shall not be diverted to another MS (or LS) but shall connect directly onto the called user.

#### **4.3.7 Call Forwarding on Busy (CFB)**

If this supplementary service is activated by the called user, the ambient listener shall not have the call forwarded and he shall receive an indication that the called user is busy.

An implementation option may allow the ambient listener to override SS-CFB and connect directly to the called user.

#### **4.3.8 Call Forwarding on No Reply (CFNRy)**

Not applicable. (The AL call shall not be invoked).

#### **4.3.9 Call Forwarding on Not Reachable (CFNR)**

If this supplementary service is activated by the called user, the ambient listener shall not have the call forwarded and he shall receive an indication that the called user is not reachable.

#### **4.3.10 List Search Call (LSC)**

Not applicable.

#### **4.3.11 Call Authorized by Dispatcher (CAD)**

Ambience listening shall not have any interaction with SS-CAD.

If the monitoring party is a restricted user of this supplementary service then it shall be necessary to seek approval for the call before the ambient listening supplementary service shall be invoked.

#### **4.3.12 Short Number Addressing (SNA)**

Ambience listening shall not have any interaction with SS-SNA.

#### **4.3.13 Area Selection (AS)**

Ambience listening shall not have any interaction with SS-AS.

#### **4.3.14 Access Priority (AP)**

Ambience listening shall not have any interaction with SS-AP.

#### **4.3.15 Priority Call (PC)**

Ambience listening shall not have any interaction with SS-PC.

**4.3.16 Call Waiting (CW)**

Ambience listening shall not have any interaction with SS-CW.

During the time that ambient listening is invoked the monitoring party should be informed of any calls waiting.

**4.3.17 Call Hold (HOLD)**

Ambience listening shall not have any interaction with SS-HOLD.

A monitoring party may put a call, that he is ambient listening to, on SS-HOLD. The indication to the called party that the call has been placed on hold shall not be given.

**4.3.18 Call Completion to Busy Subscriber (CCBS)**

Ambience listening shall not have any interaction with SS-CCBS.

**4.3.19 Late Entry (LE)**

Ambience listening shall not have any interaction with SS-LE.

**4.3.20 Transfer of Control (TC)**

Shall not be applicable.

**4.3.21 Pre-emptive Priority Call (PPC)**

Ambience listening shall not have any interaction with SS-PPC.

**4.3.22 Include Call (IC)**

Shall not be applicable.

**4.3.23 Advice of Charge (AC)**

Ambience listening shall not have any interaction with SS-AC.

**4.3.24 Barring of Outgoing Calls (BOC)**

Ambience listening shall not have any interaction with SS-BOC.

The monitoring party shall be unable to invoke the ambient listening supplementary service if this supplementary service is activated at the monitoring party.

**4.3.25 Barring of Incoming Calls (BIC)**

If the called MS (or LS) has this supplementary service invoked then ambient listening shall override it.

**4.3.26 Discreet Listening (DL)**

Ambience listening shall not have any interaction with SS-DL.

**4.3.27 Ambience Listening (AL)**

If the call to be listened to is already being ambience listened to by another user, then the request for SS-AL shall be rejected and the ambient listener shall be returned a busy indication.

An implementation may allow any number of authorized users to invoke SS-AL to the same ITSI.

**4.3.28 Dynamic Group Number Assignment (DGNA)**

Shall not be applicable.

**4.3.29 Call Completion on No Reply (CCNR)**

Shall not be applicable.

**4.3.30 Call Retention (CRT)**

Ambience listening shall not have any interaction with SS-CRT.

**4.4 Inter-working considerations**

Ambience listening shall be available across the intersystem interface.

Ambience listening shall not be available from non-TETRA terminals.

4.5 Overall SDL

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

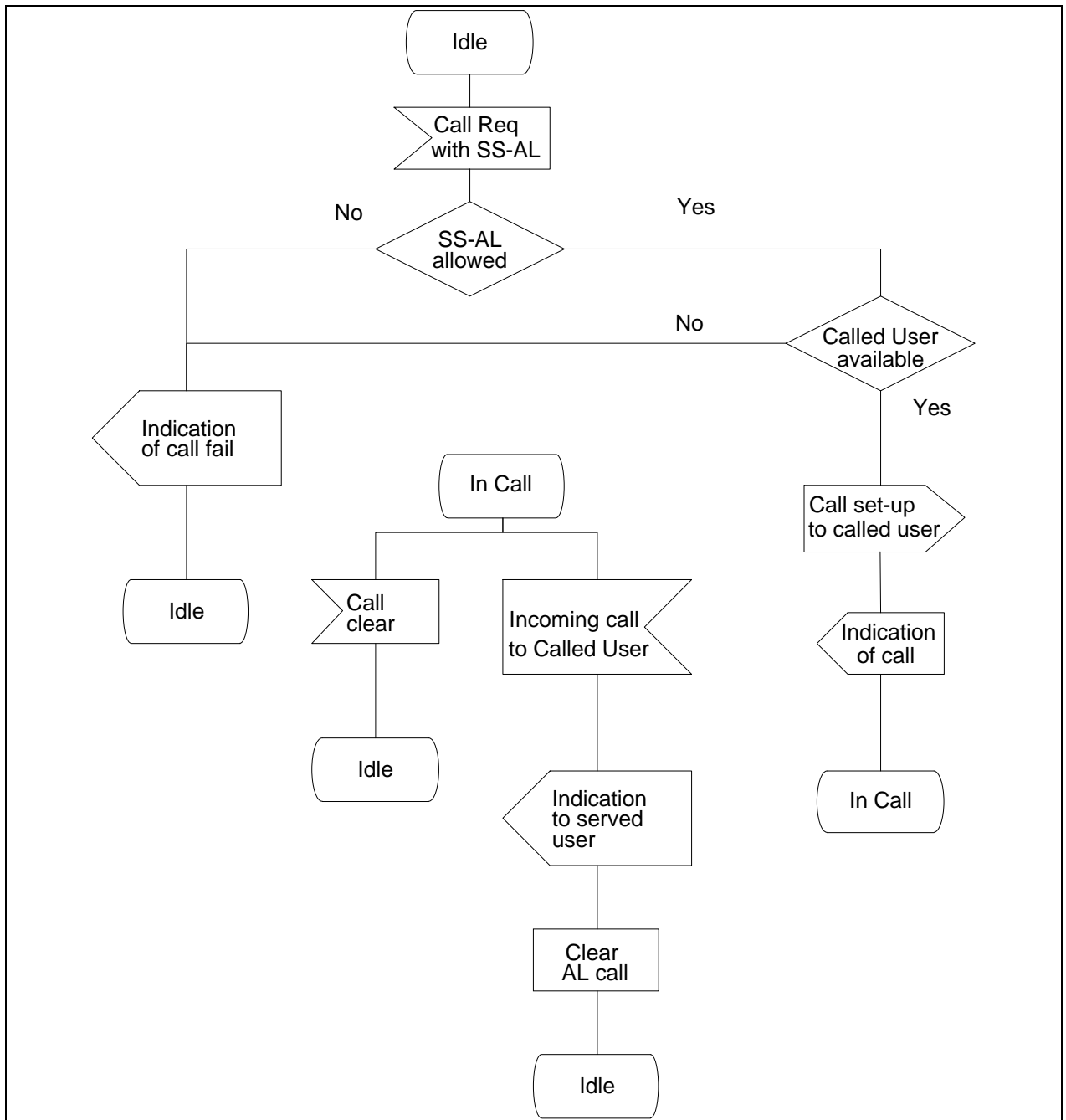


Figure 1: SS-AL, overall SDL

## History

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November 1994	Public Enquiry	PE 73:	1994-11-07 to 1995-03-03
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