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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terrestrial Trunked Radio (TETRA) Project 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: "Interworking at the Inter-System Interface (ISI)";

Part 4: "Gateways basic operation";

Part 5: "Peripheral Equipment Interface (PEI)";

Part 6: "Line connected Station (LS)";

Part 7: "Security";

Part 9: "General requirements for supplementary services";

Part 10: "Supplementary services stage 1";

Part 11: "Supplementary services stage 2";

Part 12: "Supplementary services stage 3";

Part 13: "SDL model of the Air Interface (AI)";

Part 14: "Protocol Implementation Conformance Statement (PICS) proforma specification".

Transposition dates	
Date of adoption of this ETS:	18 February 2000
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1 Scope

This European Telecommunication Standard (ETS) defines the stage 1 description of the call hold supplementary service (SS-HOLD) for the Terrestrial Trunked RAdio (TETRA) as provided by European operators. The stage 1 description is an overall service description from the user point of view but does not deal with the details of the human interface itself (see CCITT Recommendation I.130 [1]).

SS-HOLD enables a user to interrupt communication on an existing individual call and then subsequently, if desired, re-establish communication.

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

Charging principles are outside the scope of this ETS.

2 Normative references

This ETS incorporates by dated and 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): "CCITT Specification and description language (SDL)".

[3] ETSI ETS 300 392-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".

[4] ETSI ETS 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".

[5] ETSI ETS 300 392-4-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 4: Gateways basic operation; Sub-part 2: Integrated Services Digital Network (ISDN) gateway".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions of ETS 300 392-9 [4] apply, except for those of affected user and served user, which are given below:

affected user: after SS-HOLD has been invoked by one of the two parties in an individual call, the other party in that call.

NOTE: If both parties in an individual call invoke SS-HOLD, both will be affected user for SS-HOLD invocation by the other party.

served user: user who may invoke the supplementary service (i.e. request that a call be put on hold).

3.2 Abbreviations

For the purposes of this ETS, the following general abbreviations apply:

HOLD	Call Hold
ISDN	Integrated Services Digital Network
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.

TETRA	Terrestrial Trunked RAdio

4 SS-HOLD stage 1 specification

4.1 Description

4.1.1 General description

The call hold supplementary service (SS-HOLD) enables a user to interrupt an existing individual call and then subsequently retrieve that call (in re-establishing communication), unless it has been cleared.

4.1.2 Qualifications on applicability to telecommunication services

This supplementary service shall be applicable to all TETRA circuit mode individual teleservices and bearer services.

4.2 Procedures

4.2.1 Provision/Withdrawal

The provision of SS-HOLD shall be either general for all (TETRA) individual subscribers or on a per individual subscriber basis.

The supplementary service shall be withdrawn by the service provider:

- for administrative purposes; or
- at the request of the served user, if individually provided.

No specific information shall then be given to the subscribers by the network.

4.2.2 Normal procedures

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

4.2.2.1.1 Activation/Deactivation

The service shall be activated upon provision and deactivated upon withdrawal.

4.2.2.1.2 Definition

Void.

4.2.2.1.3 Registration

Void.

4.2.2.1.4 Cancellation

Void.

4.2.2.1.5 Interrogation

The network and the served user may support the interrogation procedure, initiated by the served user to inform him about:

- the number of calls put on hold by that user;
- the calls presently on hold.

4.2.2.2 Invocation and operation

4.2.2.2.1 Hold request

When the served user invokes SS-HOLD during an individual call, after it has been established, and the network accepts that invocation, the call shall be interrupted. The network shall inform the served user about the success of that invocation. It shall also notify the affected user about it.

If the served user uses a radio access to the network (i.e. he is equipped with mobile terminal equipment), the corresponding air interface resource used for the call traffic may be released. If the affected user uses a radio access to the network, it is an implementation matter whether the network releases or not the corresponding air interface resource used for the call traffic (on the affected user side).

The served user may be either of the two users participating in the individual call. If the supplementary service is provided to both users, each one can put the call on hold independently of the other.

The served user may be able to invoke SS-HOLD for more than one individual call. However the maximum number of held calls at any one time per subscriber shall be a network option.

4.2.2.2.2 Follow-up

When the served user has successfully invoked SS-HOLD he shall still be considered by the network as being in the basic call state: call active. The same shall apply for the affected user.

NOTE 1: More generally, except if the network releases the air interface resource used for the call traffic on the affected user side, no change happens in the basic (individual) call for the affected user when it is put on hold for the served user.

After he has successfully invoked SS-HOLD, the served user shall be able to make another request to the network in order to:

- retrieve that call from hold or any other call which is on hold;
- originate a new call;
- establish connection to an incoming call, e.g. a waiting call.

If the network can satisfy the request (i.e., in the case of mobile terminal equipment, air interface and other necessary resources are available), it shall re-establish the call and acknowledge that request in indicating that the call has been (successfully) retrieved; if it cannot, it shall reject the request and inform the served user whether or not the call on hold is retrievable, i.e. whether or not a new retrieval request sent later may be successful. If the call on hold is retrievable but cannot be retrieved, e.g. because resources are not available at this time, such reject may be delayed for some pre-defined time. The served user may then subsequently ask for another retrieve request for the call on hold.