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Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 10: Supplementary services stage 1; Sub-part 12: Call Hold (HOLD)

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**Terrestrial Trunked Radio (TETRA);
Voice plus Data (V+D);
Part 10: Supplementary services stage 1;
Sub-part 12: Call Hold (HOLD)**

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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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Foreword

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

The present document is part 10, sub-part 12 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";

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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

1 Scope

The present document 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 ITU-T 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.

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.

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>.

- <https://standards.iteh.ai/catalog/standards/sist/db71ce52-2e9c-4e95-90a6-e666a4353641/sist-en-300-392-10-12-v1-3-1-2006>
- [1] ITU-T Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
 - [2] ITU-T Recommendation Z.100: "Specification and Description Language (SDL)".
 - [3] ETSI EN 300 392-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".
 - [4] ETSI EN 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 300 392-9 [4], 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 the present document, the following 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.

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

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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, interrogation

4.2.2.1.1 Activation/deactivation

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

4.2.2.1.2 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.

NOTE 2: Unless the call has been cleared in the meantime or congestion (e.g. at the air interface) occurs, one might expect that the network will be able to fulfil the retrieval request if:

- the served user has not changed location since he has put that call on hold; or if
- the served user has changed location since he has put that call on hold and both his terminal equipment and the network support the optional SS-HOLD location change procedure.

See clause 4.2.3.2.4 for the case where the network cannot satisfy the request because the served user has changed location since he has invoked SS-HOLD for the call and the network does not support the SS-HOLD location change procedure.