

**Terrestrial Trunked Radio (TETRA);  
Voice plus Data (V+D);  
Part 3: Interworking at the Inter-System Interface (ISI);  
Sub-part 4: Additional Network Feature  
Short Data Service (ANF-ISISDS)**

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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 Technical Committee Terrestrial Trunked Radio (TETRA), and is now submitted for the ETSI standards One-step Approval Procedure.

The present document is part 3, sub-part 4 of a multi-part deliverable covering the 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)";**

EN 300 392-3-1: "General design";

EN 300 392-3-2: "Additional Network Feature Individual Call (ANF-ISIIC)";

EN 300 392-3-3: "Additional Network Feature Group Call (ANF-ISIGC)";

**EN 300 392-3-4: "Additional Network Feature Short Data Service (ANF-ISISDS)";**

EN 300 392-3-5: "Additional Network Feature for Mobility Management (ANF-ISIMM)";

TS 100 392-3-6: "Speech Format Implementation for Packet Mode Transmission";

TS 100 392-3-7: "Speech Format Implementation for Packet Mode Transmission";

TS 100 392-3-8: "Generic Speech Format Implementation";

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 300 392-11: "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 spacing and channel numbering";

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

TR 100 392-17: "TETRA V+D and DMO specifications";

TS 100 392-18: "Air interface optimized applications".

NOTE: Part 3, sub-parts 6 and 7 (Speech format implementation), part 4, sub-part 3 (Data networks gateway), part 10, sub-part 15 (Transfer of control), part 13 (SDL) and part 14 (PICS) of this multi-part deliverable are in status "historical" and are not maintained.

<b>Proposed national transposition dates</b>	
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Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
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# 1 Scope

The present document defines the Terrestrial Trunked Radio system (TETRA) supporting Voice plus Data (V+D). It specifies:

- general design aspects (e.g. reference points, numbering and addressing, or protocol architecture);
- the system bearer and mobility management services, and the corresponding air interface protocols;
- the interworking between TETRA networks;
- the interworking of TETRA networks with other networks, via gateways;
- the peripheral equipment interface on the mobile station;
- the security protocols and mechanisms applicable to TETRA networks and to TETRA terminal equipment;
- the supplementary services applicable to the basic TETRA tele- or bearer services.

The TETRA V+D interworking - basic operation part defines the interworking between TETRA networks over the corresponding interface: the Inter-System Interface (ISI). It comprises the following subparts:

- ISI general design;
- Additional Network Feature - ISI Individual Call (ANF-ISIIC);
- Additional Network Feature - ISI Group Call (ANF-ISIGC);
- **Additional Network Feature - ISI Short Data service (ANF-ISISDS);**
- Additional Network Feature - ISI Mobility Management (ANF-ISIMM);
- 8 kbit/s encoding of user information at the ISI.

The present document specifies the Additional Network Function (ANF) - Inter-System Interface (ISI) Short Data service (ANF-ISISDS) which is part of the Interworking Basic Operation of the Terrestrial Trunked Radio system (TETRA) supporting Voice and Data (V+D). Specifically the present document details the stage 1, 2 and 3 aspects of the ANF-ISISDS as seen from the TETRA Switching and Maintenance Infrastructure (SwMI) point of view at the Inter System Interface (ISI). This service comprises of:

- TETRA user defined short message transmission over the ISI to individual and group addresses;
- TETRA pre-defined short message transmission over the ISI to individual and group addresses.

ANF-ISISDS enables short data and status messages to be set-up and transferred between a user registered in one TETRA network to another user registered in another TETRA network, operating at the ISI of both SwMIs.

Like all other Additional Network Feature (ANF) specifications, those of ANF-ISISDS are produced in three stages, according to the method described in ITU-T Recommendation I.130 [4]. The present document contains the stage 1 and 2 descriptions of ANF-ISIIC, and its partial stage 3 description. The stage 1 description specifies the ANF as seen by its users, which are essentially the individual call control entities in both TETRA networks. The stage 2 description identifies the functional entities involved in the ANF and the information flows between them. The partial stage 3 description of ANF-ISISDS specifies its protocol.



## 2 References

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.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
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Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

### 2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

- [1] ETSI EN 300 392-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".
- [2] ETSI EN 300 392-3-3: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 3: Additional Network Feature Group Call (ANF-ISIGC)".
- [3] ETSI EN 300 392-3-1: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 1: General design".
- [4] ITU-T Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [5] ETSI EN 300 392-7: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 7: Security".
- [6] ETSI EN 300 392-12-8: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 12: Supplementary services stage 3; Sub-part 8: Area Selection (AS)".
- [7] ETSI EN 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".
- [8] ISO/IEC 11571 (1998): "Information technology - Telecommunications and information exchange between systems - Private Integrated Services Networks - Addressing".
- [9] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".
- [10] ITU-T Recommendation X.121: "International numbering plan for public data networks".

## 2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Not applicable.

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 300 392-2 [1], EN 300 392-3-1 [3] and EN 300 392-3-3 [2] apply.

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in EN 300 392-2 [1], EN 300 392-3-1 [3] and EN 300 392-3-3 [2] apply.

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## 4 ANF-ISISDS stage 1 specification

### 4.1 Description

ANF-ISISDS provides support of the SDS service described in EN 300 392-2 [1], clause 13, across the ISI connection between 2 SwMIs. In addition the present document supports the embedded SDS-TL service described in EN 300 392-2 [1].

**NOTE:** The interpretation of status code values contained in predefined status or short message services are not defined in the TETRA suite of standards. The consistent interpretation of these code values in user equipment will not be made by the ANF-ISISDS service but will be left to end-users to co-ordinate codeset interpretation.

### 4.2 Overview of operation

ANF-ISISDS shall transparently take the SDS message as presented by the originating SwMI and transport it to the peer ANF-ISISDS entity in the destination SwMI.

There shall be a single invocation of ANF-ISISDS per SDS transfer. Each message therefore is considered as independent. Group addressed SDS shall be sent to the group controlling SwMI only for further distribution by that SwMI to each participating SwMI.

ANF-ISISDS assumes that an equivalent to the TNSDS-SAP defined in EN 300 392-2 [1], clause 13 exists in the SwMI that provides an equivalent set of primitives.

For outgoing SDS messages the SwMI shall have received an equivalent to the TNSDS-UNITDATA indication primitive with those extensions required to indicate area selection. It shall then determine the destination SwMI. ANF-ISISDS shall only be invoked if the destination is on another SwMI.

For incoming SDS ANF-ISISDS shall deliver the SDS message to the SwMI in like manner to any internal SwMI device.