



SLOVENSKI STANDARD
SIST EN 300 392-3-4 V1.2.1:2006

01-april-2006

Prizemni snopovni radio (TETRA) - Govor in podatki (V+D) - 3. del: Medsebojno delovanje na medsistemskem vmesniku (ISI) - 3. poddel: Dodatna omrežna funkcija: storitev kratkih podatkov (ANF-ISISDS)

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)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 392-3-4 V1.2.1:2006](https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006>

Ta slovenski standard je istoveten z: EN 300 392-3-4 Version 1.2.1

ICS:

| | | |
|-----------|---------------------------------|-----------------------------------|
| 33.070.10 | Prizemni snopovni radio (TETRA) | Terrestrial Trunked Radio (TETRA) |
|-----------|---------------------------------|-----------------------------------|

SIST EN 300 392-3-4 V1.2.1:2006 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 392-3-4 V1.2.1:2006](#)

<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006>

ETSI EN 300 392-3-4 V1.2.1 (2004-01)

European Standard (Telecommunications series)

**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)**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 392-3-4 V1.2.1:2006](https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006>



Reference

REN/TETRA-03088

Keywords

interworking, radio, TETRA, V+D**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
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 392-3-4 V1.2.1:2006<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-af65483ed9b7-2004-01-1-2006>
Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, send your comment to:

editor@etsi.org

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2004.
All rights reserved.

DECT™, **PLUGTESTS™** and **UMTS™** are Trade Marks of ETSI registered for the benefit of its Members.
TIPHON™ and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

| | |
|---|----|
| Intellectual Property Rights | 5 |
| Foreword..... | 5 |
| 1 Scope | 7 |
| 2 References | 8 |
| 3 Definitions and abbreviations..... | 8 |
| 3.1 Definitions | 8 |
| 3.2 Abbreviations | 8 |
| 4 ANF-ISISD stage 1 specification | 9 |
| 4.1 Description | 9 |
| 4.2 Overview of operation..... | 9 |
| 4.3 Security concerns | 9 |
| 4.4 Procedures | 9 |
| 4.4.1 Provision/withdrawal | 9 |
| 4.4.2 Normal procedures..... | 9 |
| 4.4.2.1 Activation/deactivation/registration/interrogation | 9 |
| 4.4.2.2 Invocation and operation..... | 9 |
| 4.4.3 Exceptional procedures | 10 |
| 4.4.3.1 Activation/deactivation/registration/interrogation | 10 |
| 4.4.3.2 Invocation and operation..... | 10 |
| 4.5 ANF-ISIDD primitives | 11 |
| 4.5.1 Primitive definitions | 11 |
| 4.5.2 Parameter description | 12 |
| 4.6 Overall SDL | 14 |
| 5 ANF-ISISD stage 2 specification | 15 |
| 5.1 Overview of functional entities | 15 |
| 5.1.1 FE2, Originating ISI Short Data transfer functional entity | 15 |
| 5.1.2 Relationships between FEs | 15 |
| 5.2 Information flow | 15 |
| 5.2.1 Definitions of information flows | 15 |
| 6 ANF-ISISD stage 3 specification | 16 |
| 6.1 General on ANF-ISISD | 16 |
| 6.2 ANF-ISISD coding requirements | 16 |
| 6.3 TETRA ANF-ISISD PDUs | 16 |
| 6.3.1 TETRA information encoding | 16 |
| 6.3.2 ISISD-UNITDATA PDU | 17 |
| 6.3.3 Information element encoding | 17 |
| 6.3.3.1 Called party extension..... | 17 |
| 6.3.3.2 Called party external subscriber number..... | 17 |
| 6.3.3.3 Called party SSI | 17 |
| 6.3.3.4 Calling party extension | 17 |
| 6.3.3.5 Calling party external subscriber number | 18 |
| 6.3.3.6 Calling party SSI | 18 |
| 6.3.3.7 Hop count..... | 18 |
| 6.3.3.8 ISISD Subtype..... | 18 |
| 6.3.3.9 Length of user defined data-4..... | 18 |
| 6.3.3.10 Number of digits in called party external subscriber number | 18 |
| 6.3.3.11 Number of digits in calling party external subscriber number | 18 |
| 6.3.3.12 PDU type..... | 18 |
| 6.3.3.13 Pre-coded status | 19 |
| 6.3.3.14 Security level at the calling user air interface | 19 |
| 6.3.3.15 Selected area number | 19 |
| 6.3.3.16 Short data type identifier | 19 |
| 6.3.3.17 User defined data-1 | 19 |

| | | |
|--|---|-----------|
| 6.3.3.18 | User defined data-2 | 19 |
| 6.3.3.19 | User defined data-3 | 19 |
| 6.3.3.20 | User defined data-4 | 19 |
| 6.4 | ROSE operation..... | 19 |
| Annex A (normative): Interaction with other TETRA supplementary services and ANFs | | 21 |
| A.1 | Calling Line Identification Presentation (SS-CLIP)..... | 21 |
| A.2 | Connected Line Identification Presentation (SS-COLP)..... | 21 |
| A.3 | Calling/Connected Line Identification Restriction (SS-CLIR) | 21 |
| A.4 | Connected Name Identification Presentation (SS-CONP) | 21 |
| A.5 | Completion of Calls of Busy Subscriber (SS-CCBS) | 21 |
| A.6 | Completion of Calls on No Reply (SS-CCNR)..... | 21 |
| A.7 | Call Forward Unconditional (SS-CFU)..... | 21 |
| A.8 | Call Forwarding Busy (SS-CFB) | 22 |
| A.9 | Call Forwarding No Reply (SS-CFNR) | 22 |
| A.10 | Call Report (SS-CR)..... | 22 |
| A.11 | Talking Party Identification (SS-TPI) | 22 |
| A.12 | List Search Call (SS-LSC) | 22 |
| A.13 | Call Authorized by Dispatcher (SS-CAD) | 22 |
| A.14 | Short Number Addressing (SS-SNA)..... | 22 |
| A.15 | Area Selection (SS-AS)..... | 22 |
| A.16 | Access Priority (SS-AP)..... | 22 |
| A.17 | Priority Call (SS-PC)..... | 22 |
| A.18 | Call Waiting (SS-CW)..... | 23 |
| A.19 | Call Hold (SS-HOLD)..... | 23 |
| A.20 | Late Entry (SS-LE)..... | 23 |
| A.21 | Transfer of Control (SS-TC) | 23 |
| A.22 | Pre-emptive Priority Call (SS-PPC)..... | 23 |
| A.23 | Include Call (SS-IC)..... | 23 |
| A.24 | Advice of Charge (SS-AoC)..... | 23 |
| A.25 | Barring of Outgoing Calls (SS-BOC) | 23 |
| A.26 | Barring of Incoming Calls (SS-BIC)..... | 23 |
| A.27 | Discreet Listening (SS-DL)..... | 23 |
| A.28 | Ambience Listening (SS-AL)..... | 23 |
| A.29 | Dynamic Group Number Assignment (SS-DGNA)..... | 24 |
| A.30 | Call Retention (SS-CRT)..... | 24 |
| A.31 | ISI Individual Call (ANF-ISIIC) | 24 |
| A.32 | ISI group call (ANF-ISIGC)..... | 24 |
| A.33 | ISI Mobility Management (ANF-ISIMM) | 24 |
| Annex B (informative): Change Requests | | 25 |
| History | | 26 |



 ITC STANDARD PREVIEW
 (standards.iteh.ai)

SIST EN 300 392-3-4 V1.2.1:2006

<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-af5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006>

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

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";

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";

TS 100 392-17: "TETRA V+D and DMO Release 1.1 specifications".

| National transposition dates | |
|--|-----------------|
| Date of adoption of this EN: | 2 January 2004 |
| Date of latest announcement of this EN (doa): | 30 April 2004 |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 31 October 2004 |
| Date of withdrawal of any conflicting National Standard (dow): | 31 October 2004 |

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 300 392-3-4 V1.2.1:2006](https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006>

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 Line Station (LS) interface with TETRA networks;
- 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-ISISD);
- 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-ISISD) 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-ISISD 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-ISISD 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-ISISD 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-ISISD specifies its protocol.

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] 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)".

Standard Preview
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/51591835-a897-41e1-9211-afc5483ed9b9/sist-en-300-392-3-4-v1-2-1-2006>

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.

4 ANF-ISISD stage 1 specification

4.1 Description

ANF-ISISD 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-ISISD service but will be left to end-users to co-ordinate codeset interpretation.

4.2 Overview of operation

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

There shall be a single invocation of ANF-ISISD 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-ISISD 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-ISISD shall only be invoked if the destination is on another SwMI.

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

4.3 Security concerns

The participating SwMIs shall exchange the security class in use at the air interface. The destination SwMI shall discard any message for which the source SwMI is operating at a numerically higher security class.

4.4 Procedures

4.4.1 Provision/withdrawal

ANF-ISISD shall always be available.

4.4.2 Normal procedures

4.4.2.1 Activation/deactivation/registration/interrogation

ANF-ISISD shall always be activated. Registration and interrogation are not applicable to this ANF.

4.4.2.2 Invocation and operation

ANF-ISISD shall be invoked when a short data service request has been received by the originating SwMI and analysis of the destination address has shows that the destination user is not located within the originating SwMI. Analysis of the destination address may reveal one of the following scenarios:

- 1) the destination TETRA user identity belongs to the originating SwMI. In this scenario the destination user has migrated to a visited SwMI the details of which are known in the originating SwMI database;