



**Terrestrial Trunked Radio (TETRA);
Voice plus Data (V+D);
Part 3: Interworking at the Inter-System Interface (ISI);
Sub-part 14: Transport layer independent
Additional Network Feature
Short Data Service (ANF-ISISDS)**

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee TETRA and Critical Communications Evolution (TCCE).

The present document is part 3, sub-part 14 of a multi-part deliverable covering the Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D), as identified below:

Part 1: "General network design";

Part 2: "Air Interface (AI)";

Part 3: "Interworking at the Inter-System Interface (ISI)":

Sub-part 1: "General design";

Sub-part 2: "Additional Network Feature Individual Call (ANF-ISIIC)";

Sub-part 3: "Additional Network Feature Group Call (ANF-ISIGC)";

Sub-part 4: "Additional Network Feature Short Data Service (ANF-ISISDS)";

Sub-part 5: "Additional Network Feature for Mobility Management (ANF-ISIMM)";

Sub-part 6: "Speech format implementation for circuit mode transmission";

Sub-part 7: "Speech Format Implementation for Packet Mode Transmission";

Sub-part 8: "Generic Speech Format Implementation";

Sub-part 9: "Transport layer independent, General design";

Sub-part 10: "General design, PSS1 over E.1";

Sub-part 11: "General design, SIP/IP";

Sub-part 12: "Transport layer independent Additional Network Feature Individual Call (ANF-ISIIC)";

Sub-part 13: "Transport layer independent Additional Network Feature Group Call (ANF-ISIGC)";

Sub-part 14: "Transport layer independent Additional Network Feature Short Data Service (ANF-ISISDS)";

Sub-part 15: Transport layer independent Additional Network Feature, Mobility Management (ANF-ISIMM);

Part 4: "Gateways basic operation";

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

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";

Part 15: "TETRA frequency bands, duplex spacings and channel numbering";

Part 16: "Network Performance Metrics";

Part 17: "TETRA V+D and DMO specifications";

Part 18: "Air interface optimized applications";

NOTE 1: 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.

NOTE 2: Some parts are also published as Technical Specifications such as ETSI TS 100 392-2 and those may be the latest version of the document.

The current document is based on ETSI EN 300 392-3-4 [i.1]. The main changes are:

- Removal of any reference to the bearer protocol.

For all subparts in the TETRA specification ETSI EN 300 392-3, "Interworking at the Inter-System Interface (ISI)" the terms ISI and TETRA ISI are equivalent.

Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"must" and "must not" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

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

- Transport layer independent General design [3];
- General Design, PSS1 over E.1 [i.2];
- General Design, SIP/IP [i.3];
- Transport layer independent Additional Network Feature - ISI Individual Call (ANF-ISIIC) [i.4];
- Transport layer independent Additional Network Feature - ISI Group Call (ANF-ISIGC) [2];
- Transport layer independent Additional Network Feature - ISI Short Data service (ANF-ISISDS) (the present document);
- Transport layer independent Additional Network Feature - ISI Mobility Management (ANF-ISIMM) [i.5];
- Generic Speech Format Implementation [i.6].

The present document specifies the Additional Network Function (ANF) - Inter-System Interface (ISI) Short Data service (ANF-ISISDS) which is part of the Interworking at the Inter-System Interface (ISI) of the Terrestrial Trunked Radio system (TETRA) supporting Voice and Data (V+D). This service comprises of:

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

ANF-ISISDS enables short data and status messages to be 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 Recommendation ITU-T I.130 [4]. The present document contains the stage 1 and 2 descriptions of ANF-ISIIC, and stage 3 description. The stage 1 description specifies the ANF as seen by its users, which are essentially the CMCE SDS entities in both TETRA networks. The stage 2 description identifies the functional entities involved in the ANF and the information flows between them. The stage 3 description of ANF-ISISDS specifies its protocol.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://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.

The following referenced documents are necessary for the application of the present document.

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

- [2] ETSI TS 100 392-3-13: "TCCE; Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D) Part 3: Interworking at the Inter-System Interface (ISI) Sub-part 13: Transport layer independent Additional Network Feature Group Call (ANF-ISIGC)".
- [3] ETSI TS 100 392-3-9: "TCCE; Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 9: Transport layer independent, General design".
- [4] Recommendation ITU-T I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [5] 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)".
- [6] ETSI EN 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".
- [7] ISO/IEC 11571 (1998): "Information technology - Telecommunications and information exchange between systems - Private Integrated Services Networks - Addressing".
- [8] Recommendation ITU-T E.164: "The international public telecommunication numbering plan".
- [9] Recommendation ITU-T X.121: "International numbering plan for public data networks".

2.2 Informative references

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI EN 300 392-3-4: "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)".
- [i.2] ETSI TS 100 392-3-10: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 10: General design, PSS1 over E.1".
- [i.3] ETSI TS 100 392-3-11: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 11: General design, SIP/IP".
- [i.4] ETSI TS 100 392-3-12: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 12: Transport Layer Independent Additional Network Feature Individual Call (ANF-ISIIC)".
- [i.5] ETSI TS 100 392-3-15: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 15: Transport layer independent Additional Network Feature, Mobility Management (ANF-ISIMM)".
- [i.6] ETSI TS 100 392-3-8: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 8: Generic Speech Format Implementation".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI EN 300 392-2 [1] and ETSI TS 100 392-3-9 [3] apply.

NOTE: In the present document the term visited SwMI follows the definition of the Air Interface standard ETSI EN 300 392-2 [1]: TETRA network which MNI is not equal to the user's MNI.

3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in ETSI EN 300 392-2 [1], ETSI TS 100 392-3-9 [3] and ETSI TS 100 392-3-13 [2] apply.

4 ANF-ISISDS stage 1 specification

4.1 Description

ANF-ISISDS provides support of the SDS service described in ETSI 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 ETSI EN 300 392-2 [1].

NOTE: The interpretation of all 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 (linking) 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 ETSI 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.

4.3 Security concerns

The originating SwMIs shall indicate the security class in use at the air interface for the calling party. The destination SwMI may use the same or higher security class when delivering the message to called party/parties or it may discard any message for which the originating SwMI is operating at a numerically higher security class.