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Prizemni snopovni radio (TETRA) - Specifikacija za preskušanje skladnosti - 2. del: Specifikacija preskuševalnega protokola za govor in podatke (V+D) - 2-3 del: Abstraktni preskušalni niz (ATS) za krmiljenje logičnih povezav (LLC)

Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Sub-part 3: Abstract Test Suite (ATS) for Logical Link Control (LLC)

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Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Sub-part 3: Abstract Test Suite (ATS) for Logical Link Control (LLC)

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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).

Every ETS prepared by ETSI is a voluntary standard. This ETS contains text concerning conformance testing of the equipment to which it relates. This text should be considered only as guidance and does not make this ETS mandatory.

This ETS will consist of two parts with various sub-parts:

Part 1: "Radio";

Part 2: "Protocol testing specification for Voice plus Data (V+D)".

Transposition dates	
Date of adoption of this ETS:	6 February 1998
Date of latest announcement of this ETS (doa):	31 May 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 November 1998
Date of withdrawal of any conflicting National Standard (dow):	30 November 1998

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1 Scope

This European Telecommunication Standard (ETS) contains the Abstract Test Suite (ATS) to test the TETRA Logical Link Control (LLC) layer. The LLC protocol is specified in ETS 300 392-2 [2]. The Test Suite Structure (TSS) and Test Purposes (TPs) for this ATS are defined in ETS 300 394-2-1 [1].

The objective of this test specification is to provide a basis for approval tests for TETRA equipment giving a high probability of air interface inter-operability between different manufacturer's TETRA equipment.

The ISO standard for the methodology of conformance testing, ISO/IEC 9646-1 [3], ISO/IEC 9646-2 [4], ISO/IEC 9646-3 [5] and ISO/IEC 9646-5 [6], as well as the ETSI rules for conformance testing, ETS 300 406 [8] and ETR 141 (see annex D), are used as a basis for the test methodology.

Annex A provides the Tree and Tabular Combined Notation (TTCN) part of this ATS.

Annex B provides the Partial Protocol Implementation eXtra Information for Testing (PIXIT) Proforma of this ATS.

Annex C provides the Protocol Conformance Test Report (PCTR) Proforma of this ATS.

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] ETS 300 394-2-1: "Radio Equipment and Systems (RES); Trans-European Trunked Radio (TETRA) system; Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Part 2-1: Test suite structure and test purposes".

[2] ETS 300 392-2: "Radio Equipment and Systems (RES); Trans-European Trunked Radio (TETRA) system; Voice plus Data (V+D); Part 2: Air Interface (AI)".

[3] ISO/IEC 9646-1 (1991): "Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 1: General Concepts" (see also CCITT Recommendation X.290 (1991)).

[4] ISO/IEC 9646-2 (1991): "Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 2: Abstract Test Suite Specification" (see also CCITT Recommendation X.291 (1991)).

[5] ISO/IEC 9646-3 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The tree and tabular combined notation" (see also CCITT Recommendation X.292 (1992)).

[6] ISO/IEC 9646-5 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process" (see also CCITT Recommendation X.292 (1992)).

[7] ISO/IEC 9646-6 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".

[8] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

3 Definitions and abbreviations

3.1 TETRA definitions

For the purposes of this ETS, the definitions given in ETS 300 392-2 [2] apply.

3.2 TETRA abbreviations

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

LLC	Logical Link Control
MAC	Medium Access Control
MS	Mobile Station
SDU	Service Data Unit

3.3 ISO 9646 definitions

For the purposes of this ETS, the following ISO/IEC 9646-1 [3] definitions apply:

Abstract Test Suite (ATS)
Abstract Test Method (ATM)
Implementation Conformance Statement (ICS)
Implementation Under Test (IUT)
Implementation eXtra Information for Testing (IXIT)
Lower Tester (LT)
PICS proforma
PIXIT proforma
Point of Control and Observation (PCO)
Protocol Implementation Conformance Statement (PICS)
Protocol Implementation eXtra Information for Testing (PIXIT)
Service Access Point (SAP)
Single Party Testing (SPyT)
System Under Test (SUT)
Upper Tester (UT)

For the purposes of this ETS, the following ISO/IEC 9646-3 [5] definitions apply:

TTCN.GR
TTCN.MP

For the purposes of this ETS, the following ISO/IEC 9646-5 [6] definitions apply:

Protocol Conformance Test Report (PCTR)
PCTR proforma

3.4 ISO 9646 abbreviations

For the purposes of this ETS, the following ISO/IEC 9646-1 [3] abbreviations apply:

ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
IUT	Implementation Under Test
LT	Lower Tester
NWK	Network Layer
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statements
PIXIT	Protocol Implementation eXtra Information for Testing
SAP	Service Access Point
SPyT	Single Party Testing
SUT	System Under Test

TC	Test Case
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

For the purposes of this ETS, the following ISO/IEC 9646-5 [6] abbreviations apply:

PCTR	Protocol Conformance Test Report

4 Abstract Test Method (ATM)

This clause describes the ATM used for testing the TETRA LLC protocol. It is the embedded variant of the remote test method used in Single Party Testing (SPyT) context, as defined in ISO/IEC 9646-2 [4], clause 11. This test method has been selected, because:

- this test method implies no specific requirements from the Implementation Under Test (IUT);
- the upper Service Access Point (SAP) of the IUT cannot be directly observed;
- the variety of the possible TETRA implementations is a serious technical obstacle for the adoption of a different ATM;
- this test method places minimum limitations in the realization of conformance testing.

The selected test method is illustrated in figure 1.

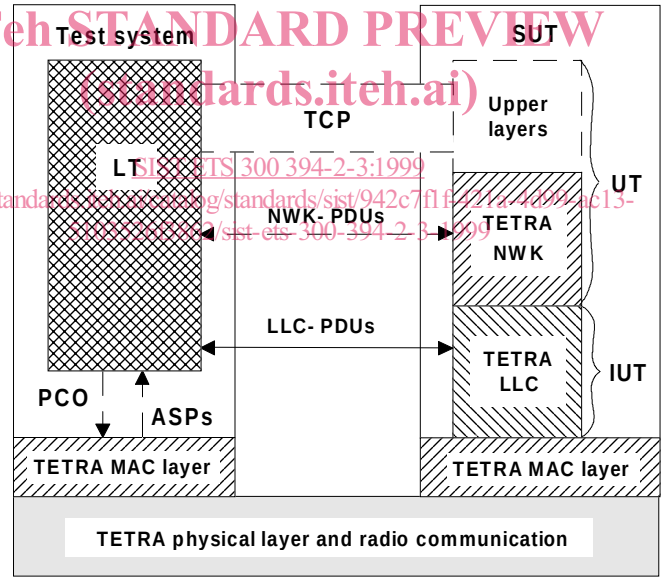

Figure 1: Remote SPyT test method for TETRA LLC

4.1 Lower Tester (LT)

A LT is located in a remote TETRA test system. It controls and observes the behaviour of the IUT.

4.2 Upper Tester (UT)

There is no explicit UT in the remote test method, but the TETRA Network (NWK) layer and the layers above inside the System Under Test (SUT) are used implicitly for testing the LLC layer.