



SLOVENSKI STANDARD
SIST ETS 300 394-4-9 E1:2003
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**Prizemni snopovni radio (TETRA) - Specifikacija za preskušanje skladnosti - 4. del:
Specifikacija za preskušanje protokola za neposredno obratovanje (DMO) -- 9.
poddel: Abstraktni preskušalni niz (ATS) za prehod mobilne postaje (MS)**

Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 9: Abstract Test Suite (ATS) for Mobile Station (MS) Gateway

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**Terrestrial Trunked Radio (TETRA);
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Part 4: Protocol testing specification for
Direct Mode Operation (DMO);
Sub-part 9: Abstract Test Suite (ATS)
for Mobile Station (MS) Gateway**

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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).

This ETS consists of 4 parts as follows:

- Part 1: "Radio";
- Part 2: "Protocol testing specification for Voice plus Data (V+D)";
- Part 4: "Protocol testing specification for Direct Mode Operation (DMO)";**
- Part 5: "Security".

Transposition dates	
Date of adoption of this ETS:	4 June 1999
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1 Scope

This ETS contains the Abstract Test Suites (ATS) to test the TETRA Direct Mode Operation (DMO) MS Gateway protocol at layer 3, called Direct Mode Call Control (DMCC) and the MS-Gateway protocol at layer 2, the Medium Access Control (MAC) protocol. The DMCC and MAC protocols are specified in ETS 300 396-1 [1] and in ETS 300 396-5 [2]. The Test Suite Structure (TSS) and Test Purposes (TPs) for these ATSs are defined in ETS 300 394-4-7 [4].

The objective of these test specifications are 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 [5], ISO/IEC 9646-2 [6], ISO/IEC 9646-3 [7] and ISO/IEC 9646-5 [8], as well as the ETSI rules for conformance testing, ETS 300 406 [9] and ETR 141 [10] are used as a basis for the test methodology.

Annex A provides the Tree and Tabular Combined Notation (TTCN) part of these two ATSs.

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 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 300 396-1 (1998): "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 1: General network design".
<https://standards.iteh.ai/catalog/standards/sist/7db16b4c-e9ca-4d41-8a10-0c61607ae611/sist-ets-300-394-4-9-e1-2003>
- [2] ETS 300 396-5: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 5: Gateways".
- [3] ETS 300 396-8-3: "Terrestrial Trunked Radio (TETRA); Direct Mode Operation (DMO); Part 8: PICS proforma; Sub-part 3: Direct Mode Gateway (DM-GATE)".
- [4] ETS 300 394-4-7: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 7: Test Suite Structure and Test Purposes (TSS&TP) for Mobile Station Gateway".
- [5] ISO/IEC 9646-1 (1994): "Information technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 1: General Concepts". (See also ITU-T Recommendation X.290 (1991)).
- [6] ISO/IEC 9646-2 (1994): "Information technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 2: Abstract Test Suite Specification". (See also ITU-T Recommendation X.291 (1991)).
- [7] ISO/IEC 9646-3 (1992): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 3: The tree and tabular combined notation". (See also ITU-T Recommendation X.292 (1992)).

- [8] ISO/IEC 9646-5 (1994): "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 ITU-T Recommendation X.292 (1992)).
- [9] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [10] ETR 141 (1994): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; The Tree and Tabular Combined Notation (TTCN) style guide".

3 Definitions and abbreviations

3.1 TETRA definitions

For the purposes of this ETS, the definitions given in ETS 300 396-5 [2] apply.

3.2 TETRA abbreviations

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

DMCC	Direct Mode Call Control
DMMM	Direct Mode Mobility Management
MAC	Medium Access Control
MS	Mobile Station
MS-GW	Mobile Station Gateway
NWK	Network
SDS	Short Data Service
SDU	Service Data Unit

3.3 ISO 9646 definitions

For the purposes of this ETS the following ISO/IEC 9646-1 [5] 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 [7] definitions apply:

TTCN.GR
 TTCN.MP

For the purposes of this ETS the following ISO/IEC 9646-5 [8] 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 [5] abbreviations apply:

ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
IUT	Implementation Under Test
LT	Lower Tester
MTC	Main Test Component
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statements
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
SAP	Service Access Point
SPyT	Single Party Testing
SUT	System Under Test
TC	Test Case
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
TSS	Test Suite Structure
UT	Upper Tester

For the purposes of this ETS the following ISO/IEC 9646-5 [8] abbreviations apply:

PCTR	Protocol Conformance Test Report
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4 Abstract Test Method (ATM)

In the present document the following naming convention is taken: the Network layer covers the Direct Mode Call Control (DMCC) and the Direct Mode Mobility Management (DMMM) protocol.

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4.1 ATM for the DM-MAC ATS

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This subclause describes the ATM used for testing the DM-MAC layer protocol of an MS-GW. It is the embedded variant of the remote test method used in Single Party Testing (SPyT) context, as defined in ISO/IEC 9646-2 [6], 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.