

ETSI TS 103 253 V1.7.1 (2022-06)



TECHNICAL SPECIFICATION

**Methods for Testing and Specification (MTS);
TTCN-3 Conformance Test Suite
for use of XML and JSON schema;
Implementation Conformance Statement**

Reference

RTS/MTS-103253V171

Keywords

conformance, ICS, JSON, testing, TTCN, XML

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 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

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

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our
Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2022.
All rights reserved.

Contents

Intellectual Property Rights	4
Foreword.....	4
Modal verbs terminology.....	4
1 Scope	5
2 References	5
2.1 Normative references	5
2.2 Informative references.....	6
3 Definition of terms, symbols and abbreviations.....	6
3.1 Terms.....	6
3.2 Symbols.....	6
3.3 Abbreviations	7
4 Conformance requirement concerning ICS	7
Annex A (normative): TTCN-3 conformance ICS pro forma.....	8
A.0 The right to copy	8
A.1 Instructions for completing the ICS pro forma.....	8
A.1.1 Other information.....	8
A.1.2 Purposes and structure.....	8
A.1.3 Conventions.....	8
A.2 Identification of the implementation	9
A.2.1 General requirements	9
A.2.2 Date of the statement	10
A.2.3 Implementation Under Test (IUT) identification	10
A.2.4 System Under Test (SUT) identification	10
A.2.5 Product supplier.....	10
A.2.6 Client	10
A.2.7 ICS contact person.....	10
A.3 ICS pro forma tables.....	11
A.3.1 Global statement of conformance.....	11
A.4 Additional information for ICS	11
History	12

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are 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 (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, 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.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Methods for Testing and Specification (MTS).

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 present document provides the Implementation Conformance Statement (ICS) pro forma for the conformance test suite for using XML and JSON Schema with TTCN-3 as defined in ETSI ES 201 873-1 [i.1] in compliance with the relevant guidance given in the pro forma for TTCN-3 reference test suite ETSI TS 102 995 [4]. In the present document only XML and JSON related features, specified in ETSI ES 201 873-9 [1] have been considered but not the core language features (see ETSI ES 201 873-1 [i.1]), nor tool implementation (see ETSI ES 201 873-5 [i.2] and ETSI ES 201 873-6 [i.3]), language mapping (see ETSI ES 201 873-7 [i.4] and ETSI ES 201 873-8 [i.5]) and language extension (see e.g. ETSI ES 202 781 [i.6], ETSI ES 202 784 [i.7] and ETSI ES 202 785 [5]) aspects.

The supplier of an implementation which is claimed to conform to ETSI ES 201 873-5 [i.2] is required to complete a copy of the ICS pro forma provided in the annex A of the present document.

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 ES 201 873-9 (V4.12.1): "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 9: Using XML schema with TTCN-3".
- [2] ISO/IEC 9646-7 (1995): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".
- [3] ISO/IEC 9646-1 (1994): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and Framework -- Part 1: General concepts".
- [4] ETSI TS 102 995: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Proforma for TTCN-3 reference test suite".
- [5] ETSI ES 202 785: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; TTCN-3 Language Extensions: Behaviour Types".
- [6] ETSI TS 103 254: "Methods for Testing and Specification (MTS); TTCN-3 Conformance Test Suite for use of XML schema; Test Suite Structure and Test Purposes (TSS&TP)".
- [7] ETSI ES 201 873-11 (V4.9.1): "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 11: Using JSON with TTCN-3".

2.2 Informative 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.

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

- [i.1] ETSI ES 201 873-1: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language".
- [i.2] ETSI ES 201 873-5: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 5: TTCN-3 Runtime Interface (TRI)".
- [i.3] ETSI ES 201 873-6: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 6: TTCN-3 Control Interface (TCI)".
- [i.4] ETSI ES 201 873-7: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 7: Using ASN.1 with TTCN-3".
- [i.5] ETSI ES 201 873-8: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 8: The IDL to TTCN-3 Mapping".
- [i.6] ETSI ES 202 781: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; TTCN-3 Language Extensions: Configuration and Deployment Support".
- [i.7] ETSI ES 202 784: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; TTCN-3 Language Extensions: Advanced Parameterization".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ISO/IEC 9646-1 [3], ISO/IEC 9646-7 [2], ETSI ES 201 873-1 [i.1] (TTCN-3) and the following apply:

Abstract Test Suite (ATS): test suite composed of abstract test cases

ICS pro forma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation claimed to conform to a given specification, stating which capabilities have been implemented

Implementation eXtra Information for Testing (IXIT): statement made by a supplier or implementor of an IUT which contains or references all of the information related to the IUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the IUT

Implementation Under Test (IUT): implementation of one or more OSI protocols in an adjacent user/provider relationship, being part of a real open system which is to be studied by testing

IXITpro forma: document, in the form of a questionnaire, which when completed for the IUT becomes the IXIT

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ATS	Abstract Test Suite
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
IXIT	Implementation eXtra Information for Testing

JSON	JavaScript Object Notation
SUT	System Under Test
TS	Test System
TTCN-3	Testing and Test Control Notation edition 3
XML	eXtensible Markup Language

4 Conformance requirement concerning ICS

If it claims to conform to the present document, the actual ICS pro forma to be filled in by a supplier shall be technically equivalent to the text of the ICS pro forma given in annex A, and shall preserve the numbering/naming and ordering of the pro forma items.

An ICS which conforms to the present document shall be a conforming ICS pro forma completed in accordance with the instructions for completion given in clause A.1. The ICS pro forma should be also in compliance with the relevant guidance given in the pro forma for TTCN-3 reference test suite ETSI TS 102 995 [4].

Annex A (normative): TTCN-3 conformance ICS pro forma

A.0 The right to copy

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the TTCN-3 conformance ICS pro forma in this annex so that it can be used for its intended purposes and may further publish the completed ICS pro forma.

A.1 Instructions for completing the ICS pro forma

A.1.1 Other information

More detailed instructions are given at the beginning of the different clauses of the ICS pro forma.

The supplier of the implementation shall complete the ICS pro forma in each of the spaces provided. If necessary, the supplier may provide additional comments separately in clause A.4.

A.1.2 Purposes and structure

The purpose of this ICS pro forma is to provide a mechanism whereby a TTCN-3 tool vendor of the TTCN-3 language ETSI ES 201 873-1 [1.1] supporting "Using XML Scheme with TTCN-3" extension ETSI ES 201 873-9 [1] and "Using JSON with TTCN-3" extension ETSI ES 201 873-11 [7] may provide information about the implementation in a standardized manner.

The ICS pro forma is subdivided into clauses for the following categories of information:

- instructions for completing the ICS pro forma;
- identification of the implementation;
- ICS pro forma tables (containing the global statement of conformance).

A.1.3 Conventions

The ICS pro forma is composed of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [2].

Item column

It contains a number that identifies the item in the table.

Item description column

It describes each respective item (e.g. parameters, timers, etc.).

Reference column

It gives reference to the "Using XML Scheme with TTCN-3" extension ETSI ES 201 873-9 [1] and "Using JSON with TTCN-3" extension ETSI ES 201 873-11 [7], except where explicitly stated otherwise.

Status column

The following notations, defined in ISO/IEC 9646-7 [2], are used for the status column:

- m mandatory - the capability is required to be supported.
- n/a not applicable - in the given context, it is impossible to use the capability. No answer in the support column is required.
- o optional - the capability may be supported or not.
- o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies a unique group of related optional items and the logic of their selection which is defined immediately following the table.
- ci conditional - the requirement on the capability ("m", "o" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression that is defined immediately following the table. For nested conditional expressions, the syntax "IF ... THEN (IF ... THEN ... ELSE...) ELSE ..." shall be used to avoid ambiguities. If an ELSE clause is omitted, "ELSE n/a" shall be implied.

NOTE: Support of a capability means that the capability is implemented in conformance to the TTCN-3 core language ETSI ES 201 873-9 [1].

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [2], are used for the support column:

- Y or y supported by the implementation.
- N or n not supported by the implementation.
- N/A or n/a or "no answer required" (allowed only if the status is N/A, directly or after evaluation of a conditional status).

Values allowed column

This column contains the values or the ranges of values allowed.

Values supported column

The support column shall be filled in by the supplier of the implementation. In this column the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the ICS pro forma, a unique reference exists. It is defined as the table identifier, followed by a slash character "/", followed by the item number in the table. If there is more than one support column in a table, the columns shall be discriminated by letters (a, b, etc.) respectively.

EXAMPLE: 5/4 is the reference to the answer of item 4 in table 5.

A.2 Identification of the implementation

A.2.1 General requirements

Identification of the Implementation Under Test (IUT) and the system in which it resides - the System Under Test (SUT) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the ICS should be named as the contact person.

A.2.2 Date of the statement

Date of the statement:	
------------------------	--

A.2.3 Implementation Under Test (IUT) identification

IUT name:	
IUT version:	

A.2.4 System Under Test (SUT) identification

SUT name:	
Hardware configuration:	
Operating system:	

A.2.5 Product supplier

Name:	
Address:	
Telephone number:	
Facsimile number:	
E-mail address:	
Additional information:	

A.2.6 Client

Name:	
Address:	
Telephone number:	
Facsimile number:	
E-mail address:	
Additional information:	

A.2.7 ICS contact person

Name:	
Telephone number:	
Facsimile number:	
E-mail address:	
Additional information:	

A.3 ICS pro forma tables

A.3.1 Global statement of conformance

	(Yes/No)
Are all mandatory capabilities implemented?	

NOTE: Answering "No" to this question indicates non-conformance to the TTCN-3 core language. All test cases defined in ETSI TS 103 254 [6] are mandatory. Non-supported mandatory capabilities are to be identified in the ICS, with an explanation of why the implementation is non-conforming.

A.4 Additional information for ICS

This clause contains all additional comments provided by the supplier of the implementation.

History

Document history		
V1.1.1	March 2015	Publication
V1.2.1	April 2016	Publication
V1.3.1	September 2017	Publication
V1.4.1	November 2018	Publication
V1.5.1	February 2020	Publication
V1.6.1	May 2021	Publication
V1.7.1	June 2022	Publication