

ETSI ES 201 873-8 V4.7.1 (2017-05)



**Methods for Testing and Specification (MTS);  
The Testing and Test Control Notation version 3;  
Part 8: The IDL to TTCN-3 Mapping**

---

Reference

RES/MTS-201873-8 ed471IDL

---

Keywords

IDL, testing, TTCN

**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

---

**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 only prevailing document is the print of the Portable Document Format (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

<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/CommiteeSupportStaff.aspx>

---

**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.

© European Telecommunications Standards Institute 2017.

All rights reserved.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

**3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

**oneM2M** logo is protected for the benefit of its Members

**GSM®** and the GSM logo are Trade Marks registered and owned by the GSM Association.

# Contents

Intellectual Property Rights .....	5
Foreword.....	5
Modal verbs terminology.....	5
1 Scope .....	6
2 References .....	6
2.1 Normative references .....	6
2.2 Informative references.....	6
3 Abbreviations .....	7
4 General considerations .....	7
4.1 Introduction .....	7
4.2 Approach .....	8
4.3 Conformance and compatibility .....	8
5 Lexical Conventions.....	9
5.0 General .....	9
5.1 Comments.....	9
5.2 Identifiers .....	9
5.3 Keywords .....	9
5.4 Literals.....	9
6 Pre-processing .....	9
7 Importing from IDL specifications.....	9
7.0 General .....	9
7.1 Importing module declaration .....	10
7.2 Importing interface declaration .....	10
7.3 Importing value declaration.....	11
7.4 Importing constant declaration .....	12
8 Importing type declaration .....	12
8.0 General .....	12
8.1 IDL basic types.....	12
8.1.0 General approach.....	12
8.1.1 Integer and floating-point types .....	13
8.1.2 Char and wide char type .....	13
8.1.3 Boolean type .....	13
8.1.4 Octet type.....	13
8.1.5 Any type .....	13
8.2 Constructed types .....	14
8.2.0 General approach.....	14
8.2.1 Struct.....	14
8.2.2 Discriminated unions .....	14
8.2.3 Enumerations .....	15
8.3 Template types .....	15
8.3.0 General approach.....	15
8.3.1 Sequence .....	16
8.3.2 String and wstring.....	16
8.3.3 Fixed types.....	16
8.4 Complex declarator .....	16
8.4.0 General approach.....	16
8.4.1 Arrays .....	16
8.4.2 Native types .....	17
9 Importing exception declaration.....	17
10 Importing operation declaration .....	18

11	Importing attribute declaration.....	20
12	Names and scoping.....	20
<b>Annex A (informative): Examples.....</b>		<b>22</b>
A.1	The example .....	22
A.2	IDL specification.....	22
A.3	Derived TTCN-3 specification.....	23
<b>Annex B (informative): Mapping lists .....</b>		<b>28</b>
B.1	IDL keyword and concept mapping list .....	28
B.2	Comparison of IDL, ASN.1, TTCN-2 and TTCN-3 data types .....	29
<b>Annex C (informative): Bibliography.....</b>		<b>30</b>
	History .....	31

---

## 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 (<https://ipr.etsi.org>).

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

The present document is part 8 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

---

## 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 defines the mapping rules for CORBA IDL (as defined in clause 3 in [4]) to TTCN-3 (as defined in ETSI ES 201 873-1 [1]) to enable testing of CORBA-based systems. The principles of mapping CORBA IDL to TTCN-3 can be also used for the mapping of interface specification languages of other object-/component-based technologies.

The specification of other mappings is outside the scope 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 <http://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 201 873-1: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language".
- [2] Recommendation ITU-T T.50: "International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) - Information technology - 7-bit coded character set for information interchange".
- [3] ISO/IEC 10646:2014: "Information technology -- Universal Coded Character Set (UCS)".
- [4] CORBA® 3.0: "The Common Object Request Broker: Architecture and Specification".

NOTE: Available at <http://www.omg.org/spec/CORBA/>.

### 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 201 873-7: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 7: Using ASN.1 with TTCN-3".
- [i.2] Void.
- [i.3] Void.
- [i.4] Void.