



NSAI
Standards

Irish Standard
I.S. EN ISO 16410-2:2018

Electronic fee collection - Evaluation of equipment for conformity to ISO 17575-3 - Part 2: Abstract test suite (ISO 16410- 2:2018)

I.S. EN ISO 16410-2:2018

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 16410-2:2018

Published:

2018-12-12

*This document was published
under the authority of the NSAI
and comes into effect on:*

2019-01-15

ICS number:

03.220.20

35.240.60

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 16410-2:2018 is the adopted Irish version of the European Document EN ISO 16410-2:2018, Electronic fee collection - Evaluation of equipment for conformity to ISO 17575-3 - Part 2: Abstract test suite (ISO 16410-2:2018)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN ISO 16410-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 03.220.20; 35.240.60

Supersedes CEN ISO/TS 16410-2:2012

English Version

**Electronic fee collection - Evaluation of equipment for
conformity to ISO 17575-3 - Part 2: Abstract test suite (ISO
16410-2:2018)**

Perception du télépéage - Évaluation de la conformité
de l'équipement à l'ISO 17575-3 - Partie 2: Suite
d'essais abstraite (ISO 16410-2:2018)

Elektronische Gebührenerhebung -
Konformitätsbeurteilung von Geräten nach ISO/TS
17575-3 - Teil 2: Abstrakte Prüfreihe (ISO 16410-
2:2018)

This European Standard was approved by CEN on 1 November 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 16410-2:2018 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 16410-2:2018) has been prepared by Technical Committee ISO/TC 204 "Intelligent transport systems" in collaboration with Technical Committee CEN/TC 278 "Intelligent transport systems" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN ISO/TS 16410-2:2012.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 16410-2:2018 has been approved by CEN as EN ISO 16410-2:2018 without any modification.

This page is intentionally left blank

INTERNATIONAL STANDARD

**ISO
16410-2**

First edition
2018-11

Electronic fee collection — Evaluation of equipment for conformity to ISO 17575-3 —

Part 2: Abstract test suite

*Perception du télépéage — Évaluation de la conformité de
l'équipement à l'ISO 17575-3 —*

Partie 2: Suite d'essais abstraite



Reference number
ISO 16410-2:2018(E)

© ISO 2018

ISO 16410-2:2018(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	2
5 Abstract test method (ATM)	2
5.1 Introduction	2
5.2 Test architecture.....	3
5.2.1 Security	3
5.3 Protocol Implementation Extra Information for Testing (PIXIT).....	3
6 Untestable test purposes (TPs)	4
7 ATS data structures	4
7.1 ASN.1 description	4
7.2 Parameterized support.....	4
8 Message filtering	6
9 ATS naming conventions	6
9.1 Introduction	6
9.2 Definition naming conventions.....	6
9.3 Test case identifier.....	7
9.4 TTCN-3 modules identifier.....	8
Annex A (normative) Abstract test suite (ATS) for FE and BE	9
Annex B (informative) PIXIT proforma for FE and BE	10
Bibliography	12

ISO 16410-2:2018(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

This first edition of ISO 16410-2 cancels and replaces ISO/TS 16410-2:2012, which has been technically revised. The following changes have been made:

- conversion from a Technical Specification to an International Standard;
- amendments to reflect changes to the underlying base standards, especially ISO 17575;
- major changes regarding:
 - data element changes introduced by ISO 17575-1:2016 and ISO 17575-3:2016;
- new test cases related to:
 - protocol version handling;
 - toll context partitions;
 - fee calculation algorithm;
 - rounding rules;
 - alternative currency;
- removed test cases related to:
 - communications services;
 - rules with respect to support of context data which are not anymore required by ISO 17575-3:2016;
- revised terms and definitions;

— editorial and formal corrections as well as changes to improve readability.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 16410-2:2018(E)

Introduction

This document is part of a series standards that supports interoperability of autonomous EFC-systems. Autonomous systems use satellite positioning, often combined with additional sensor technologies such as gyroscopes, odometers, and accelerometers, to localise the vehicle and to find its position on a map containing the charged geographic objects, such as charged roads or charged areas. From the charged objects, the vehicle characteristics, the time of day and other data that are relevant for describing road use, the tariff and ultimately the road usage fee is determined.

Autonomous on-board equipment (OBE) operates without relying on dedicated road-side infrastructure by employing wide-area technologies such as Global Navigation Satellite Systems (GNSS) and Cellular Communications Networks (CN). Therefore, autonomous systems may also be referred to as GNSS/CN systems.

Within the ISO 16410 series this document defines tests for conformity evaluation of Front End and Back End that comply with the requirements towards the context data specified in ISO 17575-3.

ISO 16410-2 is based on ISO 16410-1.

Electronic fee collection — Evaluation of equipment for conformity to ISO 17575-3 —

Part 2: Abstract test suite

1 Scope

The ISO 16410 series provides a suite of tests in order to assess the Front End (FE) and Back End (BE) behaviour's compliancy towards the requirements listed in ISO 17575-3. This document contains the definition of such tests in the form of test cases, reflecting the required individual steps listed in specific test purposes defined in ISO 16410-1. The test cases are written in Testing and Test Control Notation version 3 (TTCN v3).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16410-1, *Electronic fee collection — Evaluation of equipment for conformity to ISO 17575-3 — Part 1: Test suite structure and test purposes*

ISO 17575-1:2016, *Electronic fee collection — Application interface definition for autonomous systems — Part 1: Charging*

ISO 17575-3:2016, *Electronic fee collection — Application interface definition for autonomous systems — Part 3: Context data*

3 Terms and definitions

For the purposes of this document the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

Back End

part of a back office system interfacing to one or more Front Ends

[SOURCE: ISO 17575-1:2016, 3.4]

3.2

conformance testing

assessment to determine whether an implementation complies with the requirements

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-