



**NSAI**  
Standards

Standard Recommendation  
S.R. CEN ISO/TS 16401-2:2012

# Electronic fee collection - Evaluation of equipment for conformity to ISO/TS 17575 -2 - Part 2: Abstract test suite (ISO 16401 -2:2012)

## S.R. CEN ISO/TS 16401-2:2012

*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:*

*This document is based on:*  
CEN ISO/TS 16401-2:2012

*Published:*  
16 March, 2012

This document was published  
under the authority of the NSAI  
and comes into effect on:  
16 March, 2012

**ICS number:**

03.220.20  
35.240.60

**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

ICS 35.240.60; 03.220.20

English Version

**Electronic fee collection - Evaluation of equipment for conformity  
to ISO/TS 17575-2 - Part 2: Abstract test suite (ISO 16401-  
2:2012)**

Perception du télépéage - Évaluation de conformité de  
l'équipement à l'ISO/TS 17575-2 - Partie 2: Suite d'essai  
abstraite (ISO 16401-2:2012)

Elektronische Gebührenerhebung -  
Konformitätsevaluierung von Einrichtungen nach CEN  
ISO/TS 17575-2 - Teil 2: Abstrakte Prüfreihe (ISO 16401-  
2:2012)

This Technical Specification (CEN/TS) was approved by CEN on 30 January 2012 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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



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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

## **Contents**

Page

<b>Foreword.....</b>	<b>3</b>
----------------------	----------

## **Foreword**

This document (CEN ISO/TS 16401-2:2012) has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204 "Intelligent transport systems".

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

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

*This page is intentionally left BLANK.*

---

---

**Electronic fee collection — Evaluation of  
equipment for conformity to  
ISO/TS 17575-2 —**

**Part 2:  
Abstract test suite**

*Perception du télépéage — Évaluation de conformité de l'équipement à  
l'ISO/TS 17575-2 —*

*Partie 2: Suite d'essai abstraite*





**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



# Contents

Page

<b>Foreword .....</b>	<b>iv</b>
<b>Introduction.....</b>	<b>v</b>
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
<b>4 Abbreviations.....</b>	<b>2</b>
<b>5 Abstract Test Method (ATM).....</b>	<b>3</b>
<b>5.1 Implementations Under Tests .....</b>	<b>3</b>
<b>5.1.1 Front-End (FE) .....</b>	<b>3</b>
<b>5.1.2 Back-End (BE).....</b>	<b>3</b>
<b>5.2 Test architecture.....</b>	<b>3</b>
<b>5.3 Protocol Implementation Extra Information for Testing (PIXIT) .....</b>	<b>3</b>
<b>6 Untestable Test Purposes (TP) .....</b>	<b>3</b>
<b>7 ATS data structures .....</b>	<b>4</b>
<b>7.1 Implementation of proposed in ‘annex D.2. API Definition in C’ .....</b>	<b>4</b>
<b>7.2 Common data types .....</b>	<b>4</b>
<b>8 External functions .....</b>	<b>4</b>
<b>9 Message filtering .....</b>	<b>4</b>
<b>10 ATS naming conventions .....</b>	<b>4</b>
<b>10.1 Definition naming conventions.....</b>	<b>5</b>
<b>10.2 Test Case identifier .....</b>	<b>6</b>
<b>10.3 TTCN-3 modules identifier.....</b>	<b>6</b>
<b>Annex A (informative) TTCN-3 Library modules for FE and BE .....</b>	<b>7</b>
<b>Annex B (informative) PIXIT Proforma for FE and BE .....</b>	<b>8</b>
<b>Bibliography.....</b>	<b>10</b>

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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.

ISO/TS 16401-2 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with Technical Committee CEN/TC 278, *Road transport and traffic telematics*.

ISO/TS 16401 consists of the following parts, under the general title *Electronic fee collection — Evaluation of equipment for conformity to ISO/TS 17575-2*:

- *Part 1: Test suite structure and test purposes*
- *Part 2: Abstract test suite*

## **Introduction**

This part of ISO/TS 16401 is part of a set of standards that supports interoperability of autonomous EFC-systems, which includes ISO/TS 17575 parts 1 to 4 that define the EFC context data, their charge reports and their use of communication infrastructure.

Within the suite of EFC standards this conformance evaluation procedure defines the process and tests for conformity evaluation of Front End and Back End that comply with the requirements in ISO/TS 17575-2.

This part of ISO/TS 16401 is intended to

- assess Front End Communications API and Front End Application capabilities,
- assess Front End Communications API and Front End Application behaviour,
- serve as a guide for Front End Communications API and Front End Application conformance evaluation and type approval,
- achieve comparability between the results of the corresponding tests applied in different places at different times, and
- facilitate communications between parties.

This part of ISO/TS 16401 is based on

- ISO/TS 17575-2, and
- the ISO/IEC 9646 family of standards on conformance test methodology.

**S.R. CEN ISO/TS 16401-2:2012**

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
-