TECHNICAL REPORT

ISO/TR 16401-2

First edition
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Electronic fee collection — Evaluation of equipment for conformity to ISO 17575-2 —

Part 2: Abstract test suite

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

Partie 2: Suite d'essai abstraite

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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).

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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.

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

This first edition of ISO/TR 16401-2 cancels and replaces ISO/TS 16401-2:2012, which has been technically revised.

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The main changes compared to the previous edition are as follows:

— conversion from a Technical Specification to Technical Report has been made;

— the terms and definitions have been revised;

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

A list of all parts in the ISO 16401 series can be found on the ISO website.

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Introduction

This document is part of a set of standards that supports interoperability of autonomous electronic fee collection (EFC) systems. Autonomous systems use satellite positioning, often combined with additional sensor technologies such as gyroscopes, odometers, and accelerometers, to localize 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 are determined.

The ISO/TR 16401 series provides tests to assess the Front End Communications API and Front End application behaviours compliancy towards the requirements listed in ISO 17575-2. ISO/TR 16401-1 contains the definition of such tests in the form of test purposes, listing the initial conditions, references and individual steps in a structured textual manner. This document contains the identical tests written in Testing and Test Control Notation version 3 (TTCN-3).

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 suite of EFC standards, 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 17575-2.

This document 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.

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