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Information technology — Personal identification — ISO-compliant driving licence —

Part 4: Test methods

Technologies de l'information — Identification des personnes — Permis de conduire conforme à l'ISO —

Partie 4: Méthodes d'essai

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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

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

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

ISO/IEC 18013-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

ISO/IEC 18013 consists of the following parts, under the general title *Information technology — Personal identification — ISO-compliant driving licence*:

— *Part 1: Physical characteristics and basic data set*

— *Part 2: Machine-readable technologies*

— *Part 3: Access control, authentication and integrity validation*

— *Part 4: Test methods*

Introduction

ISO/IEC 18013 establishes guidelines for the design format and data content of an ISO-compliant driving licence (IDL) with regard to human-readable features (ISO/IEC 18013-1), machine-readable technologies (ISO/IEC 18013-2), and access control, authentication and integrity validation (ISO/IEC 18013-3). It creates a common basis for international use and mutual recognition of the IDL without impeding individual countries/states to apply their privacy rules and national/community/regional motor vehicle authorities in taking care of their specific needs.

ISO/IEC 18013-1 defines the basic terms for ISO/IEC 18013, including physical characteristics, basic data element set, visual layout, and physical security features.

ISO/IEC 18013-2 specifies the technologies that may be used for ISO/IEC 18013, including the logical data structure and data mapping for each technology.

ISO/IEC 18013-3 specifies the electronic security features that may be incorporated under ISO/IEC 18013, including mechanisms for controlling access to data, verifying the origin of an IDL, and confirming data integrity.

This part of ISO/IEC 18013 prescribes requirements for testing the compliance of the machine-readable data content on an IDL and the mechanisms for controlling access to data recorded in the machine-readable technology on an IDL with the requirements of ISO/IEC 18013-2 and ISO/IEC 18013-3, respectively.

Information technology — Personal identification — ISO-compliant driving licence —

Part 4: Test methods

1 Scope

This part of ISO/IEC 18013 specifies the test methods used for conformity testing, that is methods for determining whether a driving licence can be considered to comply with the requirements of ISO/IEC 18013 for:

- machine-readable technologies (ISO/IEC 18013-2), and
- access control, authentication and integrity validation (ISO/IEC 18013-3).

The test methods specified in this part of ISO/IEC 18013 are based on specifications defined in ISO/IEC 18013-2 and ISO/IEC 18013-3 and underlying normative specifications.

This part of ISO/IEC 18013 deals with test methods specific to ISO-compliant driving licence (IDL) requirements. Test methods applicable to (smart) cards in general (e.g. those specified in the ISO/IEC 10373 series) are outside the scope of this part of ISO/IEC 18013.

Hence, this part of ISO/IEC 18013

- provides IDL implementers with requirements for conformity evaluation,
- provides IDL issuing authorities with requirements for quality assurance, and
- provides test laboratories and test tool providers with test suite requirements.

2 Conformance

Test case specifications described in this part of ISO/IEC 18013 are intended to be performed separately and independently. A given driving licence document is not required to pass through all the tests sequentially. Also, not all tests may be applicable to a given implementation.

An IDL is considered to conform to the applicable requirements of ISO/IEC 18013-2 and ISO/IEC 18013-3 if it passes all associated tests in this part of ISO/IEC 18013. However, passing all applicable tests in this part of ISO/IEC 18013 does not guarantee that no failures will occur under operational conditions.

3 Normative references

The following referenced documents are indispensable for the application 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 3166-1:2006, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

ISO/IEC 7816-4:2005, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

ISO/IEC 18013-2:2008, *Information technology — Personal identification — ISO-compliant driving licence — Part 2: Machine-readable technologies*

ISO/IEC 18013-3:2009, *Information technology — Personal identification — ISO-compliant driving licence — Part 3: Access control, authentication and integrity validation*

ISO/IEC 19785-1:2006, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data element specification*

ISO/IEC 19785-3:2007, *Information technology — Common Biometric Exchange Formats Framework — Part 3: Patron format specifications*

4 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 18013-2, ISO/IEC 18013-3 and the following apply.

4.1
test case
description of test purpose, unique test case identifier, test inputs, test execution conditions, test steps, and the results required to pass the test

4.2
test case specification
collection of test cases, and general test data applicable to the test cases

5 Abbreviated terms

AA	active authentication
AKID	authority key identifier
AID	application identifier
APDU	application protocol data unit
BAP	basic access protection
CA	chip authentication
CE	compact encoding
DF	dedicated file
DG	data group
DO	data object

EAP extended access protection

EF elementary file

EF ID elementary file identifier

ICS implementation conformance statement

IUT implementation under test

LDS logical data structure

NMA non-match alert

OID object identifier

PA passive authentication

PKI public-key infrastructure

RF radio frequency

SAI scanning area identifier

SE standard encoding

SIC secure integrated circuit

SKID subject key identifier

SMI security mechanism indicator

SOD document security object

TA terminal authentication

6 Test design

6.1 General

This clause generally follows the concepts of the OSI Conformance Testing Methodology and Framework as specified in the seven parts of ISO/IEC 9646. Several basic elements referred to in or by the individual test case specifications are explained.

NOTE These elements facilitate the synchronization of additional specifications written by different organizations with this part of ISO/IEC 18013.

6.2 Test hierarchy

6.2.1 Structure

Test concepts used to describe the test design consist of the following elements:

- Implementation under test (IUT)
- Test Layer
- Test Unit
- Test Case

These elements have a hierarchical relationship as shown in Figure 1.

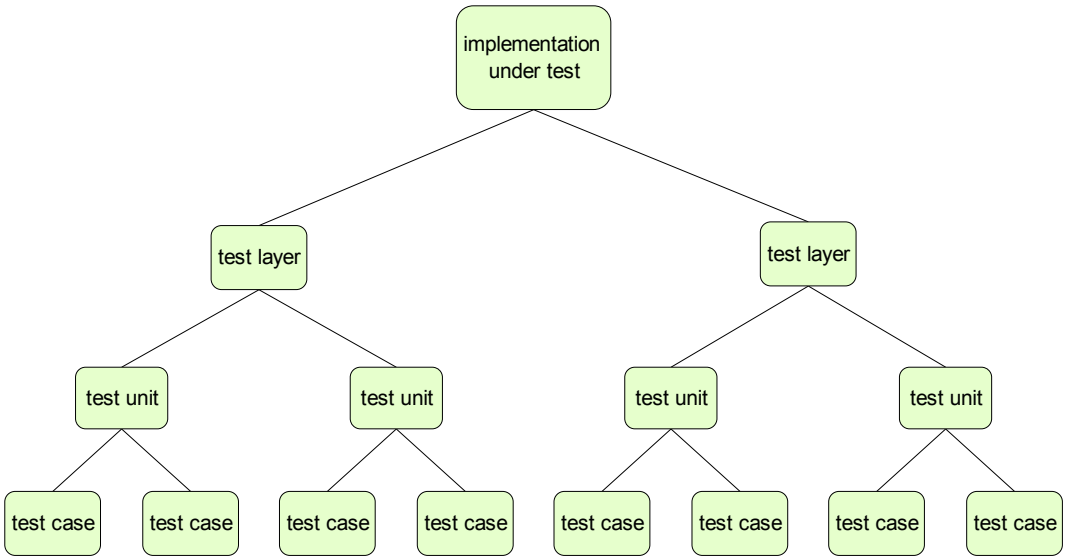

Figure 1 — Test element hierarchy

6.2.2 Implementation under test

6.2.2.1 Overview

Three IUTs are defined:

- IDL with standard encoding for SIC (see Annex C of ISO/IEC 18013-2:2008)
- IDL with compact encoding (see Annex B of ISO/IEC 18013-2:2008)
- IDL with standard encoding on Optical Memory (see Annex D of ISO/IEC 18013-2:2008)

6.2.2.2 Profile

Profiles are defined for identifying optional functionality in the IUT, which impacts the applicability of certain test layers, test units or test cases.

Profiles determine whether certain tests are applicable in the Test Layer, Test Unit or Test Case definitions. This enables the tester or test software to (automatically) select which tests should be executed to the IUT. Such selection is based upon the ICS filled out by the applicant or tester (also see 6.3.1).

The Profile specification shall include:

- Profile-ID
- Profile description

6.2.3 Test layer

6.2.3.1 Overview

The following two of the seven layers in the OSI Basic Reference Model as defined in ISO/IEC 7498-1 are addressed in this part of ISO/IEC 18013:

- Layer 7 refers to the Application Layer, and
- Layer 6 refers to the Presentation Layer.

The other layers are not applicable.

Each test layer comprises a number of test units.

6.2.3.2 Layer 7 – Logical data structure tests

Layer 7 tests cover LDS requirements. LDS requirements include:

- Presence and availability of DGs
- Presence and formatting of fields in each DG
- Access to DGs (security mechanisms)

6.2.3.3 Layer 6 – Command tests

Layer 6 tests are applicable only to IDL implementations on SIC. Layer 6 on a SIC consists of Commands. Commands for an IDL are specified in ISO/IEC 18013-2 and ISO/IEC 18013-3 and are applicable to the following IUTs:

- Compact encoding
- Standard encoding.

6.2.4 Test unit

A test unit covers an individual topic inside a layer. Each test unit contains test cases that are related to the same type of functionality of the IUT. A test unit groups together test cases that address a common issue.

Each test unit is defined by the following information:

Test Unit-ID	Uniquely identifies the test unit inside the test layer.
Purpose	Specifies the common issue addressed by test cases contained in this test unit.
References	Optionally identifies references applicable to all test cases in the test unit.

6.2.5 Test case

Each test case is defined by the following information:

Test Case-ID	Uniquely identifies the test case within the test unit.
Purpose	Specifies the requirement addressed in this test case.
Version	Version number of this test case.
References	Identifies specific reference to the requirement addressed by this test case.
Profile	Defines the profiles for which the test case is applicable. If no profile is defined (empty field), the test applies to all configurations. If the IUT does not match with each of the defined profiles, the test is skipped, and marked "not applicable" in the test report.