
**Differences between the driving
licences based on the ISO/IEC 18013
series and the European Union
specifications**

*Différences entre les permis de conduire basés sur la série ISO/IEC
18013 et les spécifications de l'Union Européenne*

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms, definitions and abbreviated terms	1
4 File structure	1
5 Data groups	2
5.1 General.....	2
5.2 EFDG1 Data Group 1.....	2
5.2.1 Type approval number Tag = '5F 01'.....	3
5.2.2 Constructed data object of demographic data elements Tag = '5F 02'.....	3
5.2.3 Categories of vehicles/restrictions/conditions – Tag = '7F63'.....	4
5.3 EFDG5 Data Group 5.....	4
5.4 EFDG6 Data Group 6.....	4
6 European Union model driving licence	4
7 Authenticity verification	4
8 Access to data group	4
9 Complementary tests methods for European driving licence	5
9.1 Scope.....	5
9.2 Test case specification: LDS in SE on SIC.....	7
9.2.1 Introduction.....	7
9.2.2 General test requirements.....	7
9.2.3 Test Layer SE_LDS – Logical Data Structure Tests.....	8
9.3 Test Case Specification: Commands for SE on SIC.....	23
9.3.1 Introduction.....	23
9.3.2 General test requirements.....	23
9.3.3 Test Layer SE_ISO/IEC 7816 Security and Command Tests.....	23
Bibliography	25

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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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/IEC JTC 1 *Information technology*, SC 17 *Cards and personal identification*.

ISO/IEC TR 19446:2015

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Introduction

The Commission Regulation EU 383/2012 of 4 May 2012 defines the general requirements for the European driving licences which include a microchip. Based on standard encoding for ICCs with contacts and for PICCs as defined in the ISO/IEC 18013- series, the commission has introduced some modifications. The objective of this Technical Report is to report the differences with the ISO/IEC 18013-series including test methods.

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Differences between the driving licences based on the ISO/IEC 18013 series and the European Union specifications

1 Scope

This Technical Report is applicable to driving licences which include a microchip and claim compliance to the EU Regulation on driving licences.

This Technical Report proposes:

- details that are missing for the implementation of Commission Regulation (EU) No 383/2012 Annex II item 1 – 10;
- the subset of the ISO/IEC 18013-4:2011 test methods that are applicable to Commission Regulation (EU) No 383/2012 Annex II item 12;
- further test methods that are applicable to Commission Regulation (EU) No 383/2012 Annex II item 12; these test methods are due to EU driving licence requirements that are incompatible with ISO/IEC 18013-2:2008.

The following Commission Regulation (EU) No 383/2012 Annex II requirements are out of the scope of this Technical Report:

- item 11 extended access restriction – EAC;
- item 13: requirements on the security certificate;
- item 14 functional certificate - smart card testing according to the ISO/IEC 10373- series.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Not applicable.

3 Terms, definitions and abbreviated terms

ASN.1	Abstract Syntax Notation One
EDL	European Driving Licence
RT	Room temperature
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
Test case specification	Collection of test cases, and general test data applicable to the test cases

4 File structure

The file structure defined in ISO/IEC 18013-2:2008, C.4 is applicable except for the differences described below.

The European driving licence application is defined as one DF. The DF is identified as legislated in EU Commission Regulation EU 383/2012 of 4 May 2012:

— ‘A0 00 00 04 56 45 44 4C 2D 30 31’

Mandatory and optional data groups differ from ISO/IEC 18013 and are presented in [Table 1](#).

Table 1 — Assignment of file identifiers and Data Group tags

Elementary file	Name	Short EF identifier	EFID	Tag	M/O ^a
EF.COM	Common data	‘1E’	‘001E’	‘60’	M
EF.DG1	Mandatory data	‘01’	‘0001’	‘61’	M
EF.DG2	Optional licence holder details	‘02’	‘0002’	‘6B’	O
EF.DG3	Optional issuing authority details	‘03’	‘0003’	‘6C’	O
EF.DG4	Optional portrait image	‘04’	‘0004’	‘65’	O
EF.DG5	Mandatory signature/usual mark image	‘05’	‘0005’	‘67’	M
EF.DG6	Mandatory facial biometric template	‘06’	‘0006’	‘75’	M
EF.DG7	Optional finger biometric template	‘07’	‘0007’	‘63’	O
EF.DG8	Optional iris biometric template	‘08’	‘0008’	‘76’	O
EF.DG11	Optional domestic application data	‘0B’	‘000B’	‘6D’	O
EF.SOD	Document Security Object	‘1D’	‘001D’	‘77’	M
EF.DG13	Active authentication	‘0D’	‘000D’	‘6F’	O

^a M/O mean Mandatory/Optional.

NOTE The presence or absence of EF.DG9 and EF.DG10 files is out of the scope of this Technical Report.

5 Data groups

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5.1 General

EF.DG1 data is structured as specified in [5.2](#). Data contained in other DGs are stored according to ISO/IEC 18013-2, Annex C.

NOTE The tags definition in this clause is not ISO/IEC 7816-6 compliant. Tags values are dictated by EU Regulation and hence do not comply with basic encoding rules of ASN.1”.

5.2 EF.DG1 Data Group 1

This EF contains the Type approval number, the mandatory demographic data elements and vehicle categories/restrictions/conditions as described in [Table 2](#).

The elements contained in EF.DG1 have a fixed or variable length. In ISO/IEC 18013-2, variable lengths are limited to maximum values. In the EU driving licence, variable lengths are not limited.

Table 2 — DG1 content

Tag	Length	Value
‘5F 01’	x	Type approval number. Refer to Table 3
‘5F 02’	x	Constructed data object of demographic data elements. Refer to Table 4
‘7F 63’	x	Constructed data object of vehicle categories/ restrictions/conditions. Refer to ISO/IEC 18013-2, Table C.6

5.2.1 Type approval number Tag = '5F 01'

The type approval number is defined by the issuing country and doesn't have a maximum fixed length.

Table 3 — Type approval number

Tag	Name	Length	Mandatory / Optional	Format	Example
'5F 01'	Type approval number	V	M	L ANS ^a	123456789ABCDE, L= 14

^a L depends on issuing country.

5.2.2 Constructed data object of demographic data elements Tag = '5F 02'

[Table 4](#) defines the fields contained in the constructed data object of demographic data. Each variable is under Tag / Length / value format.

Table 4 — Constructed data object of demographic data elements

Tag	Name	Length	Mandatory / Optional	Format	Example
'5F 03'	Issuing country (per ISO 3166-1)	3 bytes	M	3A	FRA
'5F 04'	Family name	V	M	AS	Dupont
'5F 05'	Given ^a names	V	M	AS	Laurent
'5F 06'	Date of birth (ddm-myyyy) ^d	4 bytes	M	8N	29031970
'5F 07'	Place of birth ^b	V	M	ANS	Saint Denis
'5F 08'	Nationality (per ISO 3166-1)	3 bytes	O	3A	FRA
'5F 09'	Gender ^c	1 byte	O	1A	M(M = Male, F=Female, U=Undefined)
'5F 0A'	Date of issue (ddmmyyyy) ^d	4 bytes	M	8N	14052008
'5F 0B'	Date of expiry (ddmmyyyy) ^d	4 bytes	M	8N	14052018
'5F 0C'	Issuing authority	V	M	ANS	Préfecture de police
'5F 0D'	Administrative number	V	O	ANS	123456789B
'5F 0E'	Licence number	V	M	AN	123456789012345
'5F 0F'	Normal place of residence ^e	V	O	ANS	12, ALLEE DE CRAPANNE 13300 SALON DE PROVENCE, FRANCE

^a No titles and/or suffixes are included.

^b Place of birth is also contained in EF.DG2 but under a different format based on delimiters.

^c Gender is also contained in EF.DG2 but as defined in ISO/IEC 5218 (Male = 1, Female = 2).

^d **WARNING:** ISO/IEC 18013-2, Annex C uses a different date format: yyyymmdd.

^e Normal place of residence is also contained in EF.DG2 but under a different format based on delimiters.

NOTE The coding rules of date code are legislated in EU Commission Regulation EU 383/2012 of 4 May 2012 and differ from ISO/IEC 18013.

5.2.3 Categories of vehicles/restrictions/conditions – Tag = ‘7F63’

ISO/IEC 18013-2, C.6.2.2 is applicable using date format **ddmmyyyy** for date of issue and Date of expiry.

Only the vehicle category codes specified in Article 4 of Directive 2006/126/EC is used. These EU vehicle categories differ from the ISO/IEC 18013 vehicle categories. Domestic vehicle categories have to be accommodated too in EF.DG11.

5.3 EF.DG5 Data Group 5

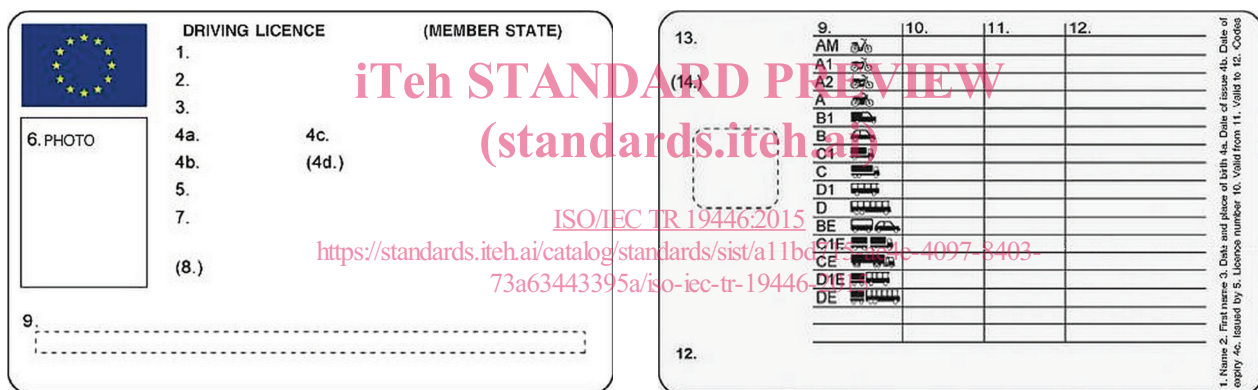
Only **JPEG** or **JPEG2000** format is used.

5.4 EF.DG6 Data Group 6

Only **JPEG** or **JPEG2000** format is used.

6 European Union model driving licence

The European driving licence layout is defined in the COMMISSION DIRECTIVE 2011/94/EU of 28 November 2011 amending Directive 2006/126/EC of the European Parliament and of the Council on driving licences.



7 Authenticity verification

All DGs stored in the EU driving licence application is protected with passive authentication as defined in ISO/IEC 18013-3:2009, § 8.1 Passive Authentication.

Active Authentication mechanisms are allowed to be applied to ensure that the original microchip has not been replaced.

8 Access to data group

The Basic Access Protection mechanism (BAP) is applied for all data in the EU driving licence application profile. It is mandatory to use the one-line SAI MRZ, as specified in ISO/IEC 18013-3:2009.

The K_{doc} document key used to access the chip is generated from the one-line SAI MRZ, which can be entered either manually or using an Optical Character Recognition (OCR) reader. The BAP 1 configuration defined for a one-line MRZ is applied.

The Extended Access Control (EAC) as defined in in ISO/IEC 18013-3:2009 is used to protect more sensitive data if necessary.

The European driving licence profile doesn't allow EAP mechanism.

9 Complementary tests methods for European driving licence

9.1 Scope

This paragraph specifies the complementary test methods to ISO/IEC 18013-4 used for conformity testing the European Application profile and determining whether a driving licence can be considered to comply with the requirements of the European Regulation on driving licence in complement to ISO/IEC 18013-4 for:

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

The test methods specified in this clause are based on EU specifications, ISO/IEC 18013-2 and ISO/IEC 18013-3 and underlying normative specifications.

This Technical Report deals with test methods specific to EU and 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 Technical Report.

Hence, this clause of the Technical Report concerns:

- EU DL implementers with requirements for conformity evaluation;
- EU DL issuing authorities with requirements for quality assurance;
- Test laboratories and test tool providers with test suite requirements.

To avoid information duplication, this clause refers to ISO/IEC 18013-4 as far as possible.

The test methods defined in this clause are run on one sample at RT and 1,5 A/m(rms) using the nominal values defined below:

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Table 5 — Nominal values (1 of 3)

Parameter	Value	To be applied to
Parameters applicable for all bit rates		
Environment temperature	room temperature	Type A and Type B
Relative humidity	25 % to 75 % ^a	Type A and Type B
Start Of Frame timing (SOF)	10 etu "0" followed by 2 etu "1"	Type B
End Of Frame timing (EOF)	10 etu "0"	Type B
Extra Guard Time (EGT)	0 etu	Type B
Parameters applicable for bit rate $f_c/128$		
Modulation	100 %	Type A
t_1	$40/f_c$	Type A
t_2	$7/f_c$	Type A
t_3	$12/f_c$	Type A
t_4	$6/f_c$	Type A
Overshoot	0 %	Type A and Type B
Modulation index m	12 %	Type B
Rise time t_r , fall time t_f	$12/f_c$	Type B
Parameters applicable for bit rate $f_c/64$		
a	0,1	Type A

Table 5 (continued)

Parameter	Value	To be applied to
t_1	$18/f_c$	Type A
t_5	$15/f_c$	Type A
t_6	$9/f_c$	Type A
Overshoot	0 %	Type A and Type B
Modulation index m	12 %	Type B
Rise time t_r , fall time t_f	$10/f_c$	Type B
Parameters applicable for bit rate $f_c/32$		
a	0,2	Type A
t_1	$9/f_c$	Type A
t_5	$7/f_c$	Type A
t_6	$8/f_c$	Type A
Overshoot	0 %	Type A and Type B
Modulation index m	12 %	Type B
Rise time t_r , fall time t_f	$8/f_c$	Type B

Table 5 — Nominal values (2 of 3)

Parameter	Value	To be applied to
Parameters applicable for bit rate $f_c/16$		
a	0,4	Type A
t_1	$5/f_c$	Type A
t_5	$4/f_c$	Type A
t_6	$5/f_c$	Type A
Overshoot	0 %	Type A and Type B
Modulation index m	12 %	Type B
Rise time t_r , fall time t_f	$6/f_c$	Type B
Parameters applicable for all bit rates		
Environment temperature	room temperature	Type A and Type B
Relative humidity	25 % to 75 % ^a	Type A and Type B
Start Of Frame timing (SOF)	10 etu "0" followed by 2 etu "1"	Type B
End Of Frame timing (EOF)	10 etu "0"	Type B
Extra Guard Time (EGT)	0 etu	Type B
Parameters applicable for bit rate $f_c/128$		
Modulation	100 %	Type A
t_1	$40/f_c$	Type A
t_2	$7/f_c$	Type A
t_3	$12/f_c$	Type A
t_4	$6/f_c$	Type A
Overshoot	0 %	Type A and Type B
Modulation index m	12 %	Type B
Rise time t_r , fall time t_f	$12/f_c$	Type B
Parameters applicable for bit rate $f_c/64$		