International Standard

ISO/IEC 24789-1

Identification cards — Card service life —

Part 1: Application profiles and requirements

Cartes d'identification — Durée de vie des cartes —

Partie 1: Profils d'application et exigences

Second edition
2024-01

Reference number
ISO/IEC 24789-1:2024(en)

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Published in Switzerland

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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.

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 document 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 or www.iec.ch/members_experts/refdocs).

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For an explanation of 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 www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and security devices for personal identification*.

This second edition cancels and replaces the first edition (ISO/IEC 24789-1:2012), which has been technically revised.

The main changes are as follows:

— Test parameters for most methods to be included in the test plan are determined from card functional elements, the number of uses per day and the expected lifetime in years.

— Test sequences in the test plan have been shortened, a maximum of three methods occur in a sequence now.

— Test parameter calculations are only based on the number of uses per day and the expected lifetime in years; the complex calculations of environmental, storage and reader factors have been removed.

A list of all parts in the ISO/IEC 24789 series can be found on the ISO and IEC websites.

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 and www.iec.ch/national-committees.

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Introduction

This document defines a methodology for determining a test plan to simulate a card's service life.

Such a test plan consists of a set of stress exposure methods, each simulating specific types of environmental or mechanical stresses. Most of the stress exposure methods are followed by one or more evaluation methods to determine to which extent the card has survived exposure to the stress exposure method, while a few have the evaluation embedded in the stress test method.

Although the equipment and parts of the procedures of certain ISO/IEC 10373-1 test methods are referenced for employment in the simulation of aging or usage in the ISO/IEC 24789 series, such references are clearly distinguished from the normal use of ISO/IEC 10373-1. In normal use, these ISO/IEC 10373-1 test methods are applied to determine conformity to ISO/IEC 7810 and do not explicitly address application-specific requirements for card service life.

Test methodologies employed by various card industry experts are included in this document. They are based upon field experience for specific applications and card functional elements. While it is believed that the field experiences can be generally applied, there is limited field/laboratory correlation data to confirm this.

Prior to publication of this document, industry experts were given the opportunity to test cards used successfully in various applications for conformity to this document. There were no instances of participating card industry experts reporting successfully implemented functional elements failing the criteria in this document.

While this document attempts to accurately predict card service life, it is possible that some card constructions can be in conformity with this document while having field issues. It is also possible that some card constructions will not be in conformity with this document while having adequate field performance. In either of these cases, the reader of this document is advised to contact their country’s national standards body (see the Foreword) and share this information so that future editions of this document can be revised accordingly.

NOTE For the convenience of certain users, non-SI equivalents are given for some quantity values where these are in common use in the ID card industry. These equivalents appear in parentheses and are for information only.

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Identification cards — Card service life —

Part 1:
Application profiles and requirements

1 Scope

This document comprises a methodology for determining a test plan to simulate a card's service life. The methodology defines two parameters of card service life: the expected card service life in years and the average number of uses per day.

This document and ISO/IEC 24789-2, together along with ISO/IEC 10373-1 describe the evaluation methods to be used and their criteria.

This document was originally developed for ID-1 cards conforming to ISO/IEC 7810 but can be useful in whole or in part for other types and form factors.

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/IEC 7810, *Identification cards — Physical characteristics*

ISO/IEC 10373-1, *Cards and security devices for personal identification — Test methods — Part 1: General characteristics*

ISO/IEC 24789-2, *Identification cards — Card service life — Part 2: Methods of evaluation*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 7810, ISO/IEC 10373-1, ISO/IEC 24789-2 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1.1
card service life
period for which a card retains the set of characteristics specified for its application under the conditions of use specified for that application from the time it is issued to the card holder

3.1.2
application profile
set of parameters that, in total, defines the conditions of use specified for an application

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