International Standard

ISO/IEC 24759

Information security, cybersecurity and privacy protection — Test requirements for cryptographic modules

Sécurité de l'information, cybersécurité et protection de la vie privée — Exigences d'essai pour modules cryptographiques

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Foreword

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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 27, *Information security, cybersecurity and privacy protection*.

This fourth edition cancels and replaces the third edition (ISO/IEC 24759:2017), which has been technically revised.

The main changes are as follows:

— new terminology has been added;

— ASs, VEs and TEs have been updated according to ISO/IEC 19790:2025; and

— VEs and TEs have been corrected or updated to improve efficiency.

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.

Introduction

In information technology there is an ever-increasing need to use cryptographic mechanisms, such as for the protection of data against unauthorized disclosure or manipulation, for entity authentication, and for non-repudiation. The security and reliability of such mechanisms are directly dependent on the cryptographic modules in which they are implemented.

ISO/IEC 19790 provides four increasing, qualitative levels of security requirements intended to cover a wide range of potential applications and environments. The cryptographic techniques are identical over the four security levels defined in this document. The security requirements cover areas relative to the design and implementation of a cryptographic module. These areas include:

— cryptographic module specification;

— cryptographic module interfaces;

— roles, services and authentication;

— software/firmware security;

— operational environment;

— physical security;

— non-invasive security;

— sensitive security parameter management;

— self-tests;

— life-cycle assurance; and

— mitigation of other attacks.

This document specifies the test requirements for cryptographic modules conforming to ISO/IEC 19790:2025.

Information security, cybersecurity and privacy protection — Test requirements for cryptographic modules

1 Scope

This document specifies the methods to be used by testing laboratories to test whether the cryptographic module conforms to the requirements specified in ISO/IEC 19790:2025. The methods are developed to provide a high degree of objectivity during the testing process and to ensure consistency across the testing laboratories.

This document also specifies the information that vendors are required to provide testing laboratories as supporting evidence to demonstrate their cryptographic modules' conformity to the requirements specified in ISO/IEC 19790:2025.

Vendors can also use this document to verify whether their cryptographic modules satisfy the requirements specified in ISO/IEC 19790:2025 before applying to a testing laboratory for testing.

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 19790:2025, *Information security, cybersecurity and privacy protection — Security requirements for cryptographic modules*

ISO/IEC 20085-1, *IT Security techniques — Test tool requirements and test tool calibration methods for use in testing non-invasive attack mitigation techniques in cryptographic modules — Part 1: Test tools and techniques*

ISO/IEC 20085-2, *IT Security techniques — Test tool requirements and test tool calibration methods for use in testing non-invasive attack mitigation techniques in cryptographic modules — Part 2: Test calibration methods and apparatus*

ISO/IEC 20543, *Information technology — Security techniques — Test and analysis methods for random bit generators within ISO/IEC 19790 and ISO/IEC 15408*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19790 and the following apply.

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

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

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

3.1
validation certificate
assertion by a certification body that a cryptographic function has been tested and found to be a correct implementation of the target cryptographic function