SLOVENSKÁ TECHNICKÁ NORMA

STN

Informačné technológie
Bezpečnostné metódy
Bezpečnostné požiadavky na kryptografické moduly (ISO/IEC 19790: 2012)

**STN
EN ISO/IEC 19790**

36 9781

Information technology - Security techniques - Security requirements for cryptographic modules (ISO/IEC 19790:2012)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/20

Obsahuje: EN ISO/IEC 19790:2020, ISO/IEC 19790:2012

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO/IEC 19790

March 2020

ICS 35.030

English version

Information technology - Security techniques - Security requirements for cryptographic modules (ISO/IEC 19790:2012)

Technologies de l'information - Techniques de sécurité - Exigences de sécurité pour les modules cryptographiques (ISO/IEC 19790:2012)

Informationstechnik - Sicherheitstechniken - Sicherheitsanforderungen für kryptografische Module (ISO/IEC 19790:2012)

This European Standard was approved by CEN on 2 March 2020.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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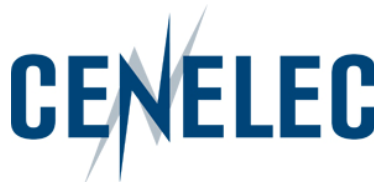
CEN-CENELEC Management Centre:
Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO/IEC 19790:2012 has been prepared by Technical Committee ISO/IEC JTC 1 "Information technology" of the International Organization for Standardization (ISO) and has been taken over as EN ISO/IEC 19790:2020 by Technical Committee CEN/CLC/JTC 13 "Cybersecurity and Data Protection" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2020, and conflicting national standards shall be withdrawn at the latest by September 2020.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/IEC 19790:2012 has been approved by CEN as EN ISO/IEC 19790:2020 without any modification.

INTERNATIONAL STANDARD

ISO/IEC 19790

Second edition
2012-08-15

Corrected version
2015-12-15

Information technology — Security techniques — Security requirements for cryptographic modules

Technologies de l'information — Techniques de sécurité — Exigences de sécurité pour les modules cryptographiques

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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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 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

Technical corrigendum 1 to ISO/IEC 19790:2012 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *Security techniques*.

This corrected version of Technical corrigendum 1 to ISO/IEC 19790:2012 cancels and replaces the first edition (ISO/IEC 19790:2012/Cor 1:2015), incorporating the same technical revisions and miscellaneous editorial corrections showing in **red** text instead of black underlining:

— 3.21: The term "cryptographic boundary" is corrected;

— 3.80: The term "non-security relevant" is corrected;

— 3.108: The term "self-test" is corrected;

— 7.2.2: The requirements **[02.04]**, **[02.05]** and **[02.06]** are corrected;

— 7.2.4.3: The requirement **[02.31]** is corrected;

— 7.3.3: The requirement **[03.14]** is corrected;

— 7.5: The requirements **[05.06]** and **[05.07]** are added. The requirements **[05.08]**, **[05.13]** and **[05.17]** through **[05.23]** are corrected;

— 7.6.3: The requirement **[06.06]** is corrected;

— 7.8: The requirement **[08.04]** is corrected;

— 7.9.1: The requirement **[09.04]** is corrected;

— 7.9.7: The requirement **[09.37]** is corrected;

— 7.10.2.2: The requirement **[10.17]** is corrected;

— 7.11.5: The requirement **[11.26]** is corrected;

— 7.11.7: The requirement **[11.35]** is corrected;

— 7.11.9: The requirement **[11.38]** is corrected;

— A.2.5: The requirements of the 1st and 2nd bullets are corrected;

— A.2.7: The requirement of the 3rd bullet is corrected;

— A.2.10: The requirement of the 4th bullet is corrected;

— B.2.4: The requirement of the 9th bullet is corrected;

— B.2.5: The requirement of the 1st bullet is corrected;

— B.2.7: The requirement of the 2nd level 6th bullet is corrected;

— D.1: Duplicate text is removed;

— D.1.2: The reference to ISO/IEC 15946-3 is removed;

— E.1: Duplicate text is removed; and

— F.1: Duplicate text is removed.

Introduction

In Information Technology there is an ever-increasing need to use cryptographic mechanisms such as the protection of data against unauthorised 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.

This International Standard provides for 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. 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.

The overall security rating of a cryptographic module must be chosen to provide a level of security appropriate for the security requirements of the application and environment in which the module is to be utilised and for the security services that the module is to provide. The responsible authority in each organization should ensure that their computer and telecommunication systems that utilise cryptographic modules provide an acceptable level of security for the given application and environment. Since each authority is responsible for selecting which approved security functions are appropriate for a given application, compliance with this International Standard does not imply either full interoperability or mutual acceptance of compliant products. The importance of security awareness and of making information security a management priority should be communicated to all concerned.

Information security requirements vary for different applications; organizations should identify their information resources and determine the sensitivity to and the potential impact of a loss by implementing appropriate controls. Controls include, but are not limited to:

— physical and environmental controls;

— access controls;

— software development;

— backup and contingency plans; and

— information and data controls.

These controls are only as effective as the administration of appropriate security policies and procedures within the operational environment.

INTERNATIONAL STANDARD   **ISO/IEC 19790:2012(E)**

Information technology — Security techniques — Security requirements for cryptographic modules

1   Scope

This International Standard specifies the security requirements for a cryptographic module utilised within a security system protecting sensitive information in computer and telecommunication systems. This International Standard defines four security levels for cryptographic modules to provide for a wide spectrum of data sensitivity (e.g. low value administrative data, million dollar funds transfers, life protecting data, personal identity information, and sensitive information used by government) and a diversity of application environments (e.g. a guarded facility, an office, removable media, and a completely unprotected location). This International Standard specifies four security levels for each of 11 requirement areas with each security level increasing security over the preceding level.

This International Standard specifies security requirements specified intended to maintain the security provided by a cryptographic module and compliance to this International Standard is not sufficient to ensure that a particular module is secure or that the security provided by the module is sufficient and acceptable to the owner of the information that is being protected.

2   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.

The documents listed in ISO/IEC 19790 Annexes C, D, E and F *Information technology – Security techniques – Security requirements for cryptographic modules.*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN