

# SLOVENSKI STANDARD oSIST prEN ISO/IEC 15408-1:2023

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Information security, cybersecurity and privacy protection - Evaluation criteria for IT security - Part 1: Introduction and general model (ISO/IEC 15408-1:2022)

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Sécurité de l'information, cybersécurité et protection de la vie privée - Critères d'évaluation pour la sécurité des technologies de l'information - Partie 1: Introduction et modèle général (ISO/IEC 15408-1:2022)

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# INTERNATIONAL STANDARD

ISO/IEC 15408-1

Fourth edition 2022-08

# Information security, cybersecurity and privacy protection — Evaluation criteria for IT security —

# Part 1: **Introduction and general model**

Sécurité de l'information, cybersécurité et protection de la vie privée — Critères d'évaluation pour la sécurité des technologies de l'information —

Partie 1: Introduction et modèle général

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Contents							
For	eword		vi				
Introduction							
1	Scor	pe	1				
2	-	mative references					
3		ms and definitions					
4	Abb	13					
5		rview					
	5.1	General					
	5.2	ISO/IEC 15408 series description					
		5.2.1 General 5.2.2 Audience					
	5.3	5.2.2 Audience					
	3.3	5.3.1 General					
		5.3.2 TOE boundaries					
		5.3.3 Different representations of the TOE					
		5.3.4 Different configurations of the TOE					
		5.3.5 Operational environment of the TOE					
	5.4	Presentation of material in this document	21				
6	General model STANDARD PREVIEW 2						
U	6.1	Background					
	6.2	Assets and security controls					
	6.3	Core constructs of the paradigm of the ISO/IEC 15408 series					
		6.3.1 General	24				
		6.3.2 Conformance types ISO/IFC 15408 1 2023					
		6.3.3 Communicating security requirements					
		6.3.4 Meeting the needs of consumers (risk owners)	27				
7	Spec	29					
	7.1	Security problem definition (SPD)	29				
		7.1.1 General					
		7.1.2 Threats					
		7.1.3 Organizational security policies (OSPs)					
	7.0	7.1.4 Assumptions					
	7.2	Security objectives					
		7.2.1 General 7.2.2 Security objectives for the TOE					
		7.2.3 Security objectives for the operational environment					
		7.2.4 Relation between security objectives and the SPD	32				
		7.2.5 Tracing between security objectives and the SPD					
		7.2.6 Providing a justification for the tracing					
		7.2.7 On countering threats					
		7.2.8 Security objectives: conclusion					
	7.3	Security requirements					
		7.3.1 General					
		7.3.2 Security Functional Requirements (SFRs)					
		7.3.3 Security assurance requirements (SARs)					
		J 1					
8	Security components						
	8.1	Hierarchical structure of security components					
		8.1.1 General					
		8.1.2 Class					
		U.I.J. I'alliliy					

		8.1.4 Component	
		8.1.5 Element	
	8.2	Operations	
		8.2.1 General	
		8.2.2 Iteration	
		8.2.3 Assignment	
		8.2.4 Selection	
	0.0	8.2.5 Refinement	
	8.3	Dependencies between components	
	8.4	Extended components	
		8.4.1 General 8.4.2 Defining extended components	
_			
9		ages	
	9.1 9.2	General Package transpar	
	9.2	Package types 9.2.1 General	
		9.2.2 Assurance packages	
		9.2.3 Functional packages	
	9.3	Package dependencies	
	9.3 9.4	Evaluation method(s) and activities	
10		ection Profiles (PPs)	
	10.1	General	
	10.2	PP introduction	
	10.3	Conformance claims and conformance statements	
	10.4	Security assurance requirements (SARs)	51
	10.5	Additional requirements common to strict and demonstrable conformance	51
		10.5.1 Conformance claims and conformance statements	51
		10.5.2 Security problem definition (SPD)  10.5.3 Security objectives Tank ISO IEC 15408 12023	51
	10.6	10.5.3 Security objectives	52
	10.6	Additional requirements specific to strict conformance	4/ <sub>USISt</sub> 52
		10.6.1 Requirements for the security problem definition (SPD)	
		10.6.2 Requirements for the security objectives.	32 E2
	10.7	10.6.3 Requirements for the security requirements	52 52
	10.7	Additional requirements specific to exact conformance	33
	10.0	10.8.1 General	
		10.8.2 Conformance claims and statements	53
	10.9	Using PPs	
		Conformance statements and claims in the case of multiple PPs	
	10.10	10.10.1 General	
		10.10.2 Where strict or demonstrable conformance is specified	
		10.10.3 Where exact conformance is specified	
11	N/ - J-	•	
11		llar requirements construction	
	11.1 11.2	General PP-Modules	
	11.2		
		11.2.1 General 11.2.2 PP-Module Base	
		11.2.2 Pr-Module base 11.2.3 Requirements for PP-Modules	
	11 2		
	11.3	PP-Configurations	
		11.3.2 Requirements for PP-Configurations	
		11.3.3 Usage of PP-Configurations	
4.0			
12		rity Targets (STs)	
	12.1 12.2	General Conformance claims and statements	
	12.2		
	14.5	Assurance requirements	/ 1

	12.4	Additional requirements in the exact conformance case	71
		12.4.1 Additional requirements for the conformance claim	71
		12.4.2 Additional requirements for the SPD	
		12.4.3 Additional requirements for the security objectives	
		12.4.4 Additional requirements for the security requirements	
	12.5	Additional requirements in the multi-assurance case	72
13	Evalu	ation and evaluation results	
	13.1	General	
	13.2	Evaluation context	
	13.3	Evaluation of PPs and PP-Configurations	
	13.4	Evaluation of STs	
	13.5	Evaluation of TOEs.	
	13.6	Evaluation methods and evaluation activities	
	13.7	Evaluation results	
		13.7.1 Results of a PP evaluation	
		13.7.2 Results of a PP-Configuration evaluation	
	12.0	13.7.3 Results of a ST/TOE evaluation	
	13.8		
14		osition of assurance	
	14.1	9 0 11 0 1 0 1	
	14.2	Composition models	
		14.2.1 Layered composition model	81
		14.2.2 Network or bi-directional composition model	82
	14.3	14.2.3 Embedded composition model	
	14.3	Evaluation techniques for providing assurance in composition models	
		14.3.2 ACO class for composed TOEs	
		14.3.3 Composite evaluation for composite products	
	144	Requirements for evaluations using composition techniques	95
		14.4.1 Re-use of evaluation results	
		14.4.2 Composition evaluation issues	
	14.5	Evaluation by composition and multi-assurance	
Annex	A (noi	mative) Specification of packages	98
Annex	B (noi	mative) Specification of Protection Profiles (PPs)	102
Annex	<b>C</b> (nor	mative) Specification of PP-Modules and PP-Configurations	112
Annex	D (no	mative) Specification of Security Targets (STs) and Direct Rationale STs	125
Annex	<b>E</b> (nor	mative) PP/PP-Configuration conformance	136
Biblio	graphy	y	141

#### 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 <a href="www.iso.org/directives">www.iso.org/directives</a> or <a href="www.iso.org/directives">www.iso.org/directives<

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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 <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>. In the IEC, see <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>. In the IEC, see <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

This document was prepared by 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 15408-1:2009), which has been technically revised.

The main changes are as follows:

- the document has been restructured;
- technical changes have been introduced:
  - the terminology has been reviewed and updated;
  - the exact conformance type has been introduced;
  - low assurance protection profiles (PPs) have been removed and direct rationale PPs have been introduced;
  - PP-Modules and PP-Configurations for modular evaluations have been introduced;
  - multi-assurance evaluation has been introduced.

A list of all parts in the ISO/IEC 15408 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 <a href="https://www.iso.org/members.html">www.iso.org/members.html</a> and <a href="https://www.iso.org/members.html">www.iso.org/members.html</a

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Spain Ministerio de Asuntos Económicos y Transformación Digital

Sweden FMV, Swedish Defence Materiel Administration

United Kingdom National Cyber Security Centre 408-12023

United States The National Security Agency

#### Introduction

The ISO/IEC 15408 series permits comparability between the results of independent security evaluations by providing a common set of requirements for the security functionality of IT products and for assurance measures applied to these IT products during a security evaluation. These IT products may be implemented in hardware, firmware, or software.

The evaluation process establishes a level of confidence that the security functionality of these IT products and the assurance measures applied to these IT products meet these requirements. The evaluation results may help consumers to determine whether these IT products fulfil their security needs.

The ISO/IEC 15408 series is useful as a guide for the development, evaluation and/or procurement of IT products with security functionality.

The ISO/IEC 15408 series is intentionally flexible, enabling a range of evaluation approaches to be applied to a range of security properties of a range of IT products. Therefore, users of the standard are cautioned to exercise care that this flexibility is not misused. For example, using the ISO/IEC 15408 series in conjunction with unsuitable evaluation methods/activities, irrelevant security properties, or inappropriate IT products, can result in meaningless evaluation results.

Consequently, the fact that an IT product has been evaluated has meaning only in the context of the security properties that were evaluated and the evaluation methods that were used. Evaluation authorities are advised to carefully check the products, properties, and methods to determine that an evaluation provides meaningful results. Additionally, purchasers of evaluated products are advised to carefully consider this context to determine whether the evaluated product is useful and applicable to their specific situation and needs.

The ISO/IEC 15408 series addresses the protection of assets from unauthorized disclosure, modification, or loss of use. The categories of protection relating to these three types of failure of security are commonly called confidentiality, integrity, and availability, respectively. The ISO/IEC 15408 series may also be applicable to aspects of IT security outside of these three categories. The ISO/IEC 15408 series is applicable to risks arising from human activities (malicious or otherwise) and to risks arising from non-human activities. The ISO/IEC 15408 series may be applied in other areas of IT but makes no claim of applicability in these areas.

Certain topics, because they involve specialized techniques or because they are somewhat peripheral to IT security, are considered to be outside the scope of the ISO/IEC 15408 series. Some of these are identified below:

- a) the ISO/IEC 15408 series does not contain security evaluation criteria pertaining to administrative security measures not related directly to the IT security functionality. However, it is recognized that significant security can often be achieved through or supported by administrative measures such as organizational, personnel, physical, and procedural controls;
- b) the ISO/IEC 15408 series does not address the evaluation methodology under which the criteria should be applied;
  - NOTE 1 The baseline methodology is defined in ISO/IEC 18045. ISO/IEC 15408-4 can be used to further derive evaluation activities and methods from ISO/IEC 18045.
- c) the ISO/IEC 15408 series does not address the administrative and legal framework under which the criteria may be applied by evaluation authorities. However, it is expected that the ISO/IEC 15408 series is intended to be used for evaluation purposes in the context of such a framework;
- d) the procedures for use of evaluation results in accreditation are outside the scope of the ISO/IEC 15408 series. Accreditation is the administrative process whereby authority is granted for the operation of an IT product (or collection thereof) in its full operational environment including all of its non-IT parts. The results of the evaluation process are an input to the accreditation process. However, as other techniques are more appropriate for the assessments of non-IT related properties

- and their relationship to the IT security parts, accreditors must make separate provisions for those aspects;
- e) the subject of criteria for the assessment of the inherent qualities of cryptographic algorithms is not covered in the ISO/IEC 15408 series. In the case that independent assessment of mathematical properties of cryptography is required, the evaluation scheme under which the ISO/IEC 15408 series is applied shall make provision for such assessments.

NOTE 2 This document uses bold and italic type in some cases to distinguish terms from the rest of the text. The relationship between components within a family is highlighted using a bolding convention. This convention calls for the use of bold type for all new requirements. For hierarchical components, requirements are presented in bold type when they are enhanced or modified beyond the requirements of the previous component. In addition, any new or enhanced permitted operations beyond the previous component are also highlighted using bold type.

The use of italics indicates text that has a precise meaning. For security assurance requirements the convention is for special verbs relating to evaluation.

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# Information security, cybersecurity and privacy protection — Evaluation criteria for IT security —

### Part 1:

## Introduction and general model

#### 1 Scope

This document establishes the general concepts and principles of IT security evaluation and specifies the general model of evaluation given by various parts of the standard which in its entirety is meant to be used as the basis for evaluation of security properties of IT products.

This document provides an overview of all parts of the ISO/IEC 15408 series. It describes the various parts of the ISO/IEC 15408 series; defines the terms and abbreviations to be used in all parts of the standard; establishes the core concept of a Target of Evaluation (TOE); describes the evaluation context and describes the audience to which the evaluation criteria is addressed. An introduction to the basic security concepts necessary for evaluation of IT products is given.

#### This document introduces:

- the key concepts of Protection Profiles (PP), PP-Modules, PP-Configurations, packages, Security Targets (ST), and conformance types;
- a description of the organization of security components throughout the model;
- the various operations by which the functional and assurance components given in ISO/IEC 15408-2 and ISO/IEC 15408-3 can be tailored through the use of permitted operations;
- general information about the evaluation methods given in ISO/IEC 18045;
- guidance for the application of ISO/IEC 15408-4 in order to develop evaluation methods (EM) and evaluation activities (EA) derived from ISO/IEC 18045;
- general information about the pre-defined Evaluation Assurance Levels (EALs) defined in ISO/IEC 15408-5;
- information in regard to the scope of evaluation schemes.

#### 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 15408-2:2022, Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 2: Security functional components

ISO/IEC 15408-3:2022, Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 3: Security assurance components

ISO/IEC 18045, IT security techniques — Methodology for IT security evaluation

ISO/IEC IEEE 24765, Systems and software engineering — Vocabulary

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 15408-2, ISO/IEC 15408-3, ISO/IEC 18045 and ISO/IEC IEEE 24765 apply.

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

- ISO Online browsing platform: available at <a href="https://www.iso.org/obp">https://www.iso.org/obp</a>
- IEC Electropedia: available at <a href="https://www.electropedia.org/">https://www.electropedia.org/</a>

#### 3.1

#### action

documented activity of the evaluator (3.45) or developer (3.33)

Note 1 to entry: Evaluator actions and developer actions are required by ISO/IEC 15408-3.

#### 3.2

#### administrator

entity (3.36) that has a level of trust with respect to all policies implemented by the *TOE security* functionality (TSF) (3.92)

Note 1 to entry: Not all *protection profiles (PPs)* ( $\underline{3.68}$ ) or security targets (STs) assume the same level of trust for administrators. Typically, administrators are assumed to adhere at all times to the policies in the ST of the *target of evaluation (TOE)* ( $\underline{3.90}$ ). Some of these policies can be related to the functionality of the TOE, while others can be related to the *operational environment* ( $\underline{3.63}$ ).

#### 3.3

#### adverse action

action (3.1) performed by a threat agent (3.91) on an asset (3.4)

## 3.4 asset

#### oSIST prEN ISO/IEC 15408-1:2023

entity (3.36) that the owner of the target of evaluation (TOE) (3.90) presumably places value on

#### 3.5

#### assignment

specification of an identified parameter in a functional or assurance component

#### 3.6

#### assurance

grounds for confidence that a target of evaluation (TOE) (3.90) meets the security functional requirements (SFRs) (3.78)

#### 3.7

#### assurance package

named set of security assurance requirements (3.76)

EXAMPLE "EAL 3".

#### 3.8

#### attack potential

measure of the effort needed to exploit a vulnerability in a target of evaluation (TOE) (3.90)

Note 1 to entry: The effort is expressed as a function of properties related to the attacker (e.g. expertise, resources, and motivation) and properties related to the vulnerability itself (e.g. window of opportunity, time to exposure).

#### 3.9

#### attack surface

set of logical or physical interfaces to a target, consisting of points through which access to the target and its functions may be attempted

EXAMPLE 1 The casing of a payment terminal is a part of physical attack surface for that device.

EXAMPLE 2 The communications protocols available for connection to a network device are part of the logical attack surface for that network device.

#### 3.10

#### augmentation

addition of one or more requirements to a package

Note 1 to entry: In case of a *functional package* (3.51), such an augmentation is considered only in the context of one package and is not considered in the context with other packages or *protection profiles* (*PPs*) (3.68) or *security targets* (*STs*) (3.82).

Note 2 to entry: In case of an assurance package (3.7), augmentation refers to one or more security assurance requirements (SARs) (3.76).

#### 3.11

#### authorized user

entity (3.36) who may, in accordance with the security functional requirements (SFRs) (3.78), perform an operation on the target of evaluation (TOE) (3.90)

### 3.12 iTeh STANDARD PREVIEW

#### base component

independent entity (3.36) in a multi-component product that provides services and resources to one or more dependent component(s) (3.31)

Note 1 to entry: This applies in particular to 'composed TOEs' (3.21) and 'composite products / composite TOEs' (3.25).

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#### 3.13

#### **base Protection Profile**

#### base PP

*Protection Profile* (3.68) specified in a *PP-Module* (3.71), as part of that PP-Module's *PP-Module Base* (3.72), used as a basis to build a *PP-Configuration* (3.69)

#### 3.14

#### base PP-Module

*PP-Module* (3.71) specified in a different PP-Module, as part of that PP-Module's *PP-Module Base* (3.72), used as a basis to build a *PP-Configuration* (3.69)

Note 1 to entry: Specifying a base PP-Module in a PP-Module implicitly includes the base PP-Module's PP-Module Base.

#### 3.15

#### base target of evaluation

#### base TOE

base component (3.12) which is itself the subject of an evaluation

Note 1 to entry: This applies in particular to 'composed TOEs' (3.21) and 'composite products/composite TOEs' (3.25).

#### 3.16

#### class

(taxonomy) set of families that share a common focus

Note 1 to entry: Class is further defined in ISO/IEC 15408-2, which defines security functional classes and ISO/IEC 15408-3, which defines security assurance classes.