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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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *IT Security techniques*.

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Introduction

This document describes architectural and design principles that may be used in the development of secure products, systems and applications.

Each principle is described in a structured way, characterizing the principle itself, describing how it can be used, how it can support security, how it may help in the security assessment of the product, system or application, as well as its dependency on other principles described in this document.

Examples are provided for each principle on how it may be implemented, how it may contribute to security properties and functions and what other aspects have to be taken into account in the example provided to also address non-security related requirements like usability and performance.

A guideline is provided linking this to security evaluations performed using ISO/IEC 15408 (all parts) and ISO/IEC 18045 and addresses both developers and evaluators of secure products, systems and applications.

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Information technology — Security techniques — Catalogue of architectural and design principles for secure products, systems and applications

1 Scope

This document provides a catalogue of architectural and design principles that can be used in the development of secure products, systems and applications together with guidance on how to use those principles effectively.

This document gives guidelines for the development of secure products, systems and applications including a more effective assessment with respect to the security properties they are supposed to implement.

This document does not establish any requirements for the evaluation or the assessment process or implementation.

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 15408-1, *Information technology — Security techniques — Evaluation criteria for IT security — Part 1: Introduction and general model*

ISO/IEC 15408-2, *Information technology — Security techniques — Evaluation criteria for IT security — Part 2: Security functional components*

ISO/IEC 15408-3, *Information technology — Security techniques — Evaluation criteria for IT security — Part 3: Security assurance components*

ISO/IEC 18045, *Information technology — Security techniques — Methodology for IT security evaluation*

3 Terms and definitions

For the purposes of this document, terms and definitions given in ISO/IEC 15408-1, ISO/IEC 15408-2, ISO/IEC 15408-3 and ISO/IEC 18045 apply.

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

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

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

3.1
security property
property of a system or application that is crucial to achieve the security objectives defined for the system or application

3.2
security relevant attribute
attribute assigned to an object, subject or user of a system or application that is used to enforce a security policy

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