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ISO/IEC JTC 1/SC27/WG3

Secretariat: DIN

Date: 2023-~~08-28~~11-20

Information ~~Security, Cybersecurity~~security, cybersecurity and ~~Privacy Protection~~privacy protection — Ontology ~~Building Blocks~~building blocks for ~~Security~~security and ~~Risk Assessment~~risk assessment

~~WD/CD/DIS/FDIS stage~~

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~~*A model manuscript of a draft International Standard (known as "The Rice Model") is available at https://www.iso.org/iso/model_document-rice_model.pdf*~~

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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 ISO documentsdocument 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 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC1/WG27JTC 1, *Information technology*, Subcommittee SC 27, *Information security, cybersecurity and privacy protection*.

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Introduction

The assessment of trustworthiness within ~~Information~~information and ~~Computer Technologies~~computer technologies (ICT) is associated with various types of best practices and evaluations, such as governance, secure development lifecycle, security evaluation~~, risk assessment. This document defines an inventory of building blocks conceptually associated with different types of assessments, an ontology that organizes the building blocks, and instructions for using the inventory of building blocks and the ontology. Relevant areas include assessments related to governance, risk management, security evaluation, Secure Development Lifecycle (SDL), supply chain integrity, privacy.~~ and risk assessment.

This document was developed to build upon international standards dealing with ICT assessment such as ISO/IEC 27034-7~~:2018(E), 0.2~~, ISO/IEC 27007~~:2020(en), 4.0,~~ and ISO/IEC 27036-1~~:2021(en), 5.0~~.

When a new technology or use case ~~become~~becomes prominent, novel approaches to assessments ~~taking into consideration~~should be defined, which take existing frameworks ~~should be defined.~~into consideration. The dynamic cycle of ~~technology~~technological development and integrated environments increase the need for international standards. This document aims to simplify the approach for creating new assessments and for analysing existing assessments for their applicability in the emerging and mature technology areas.

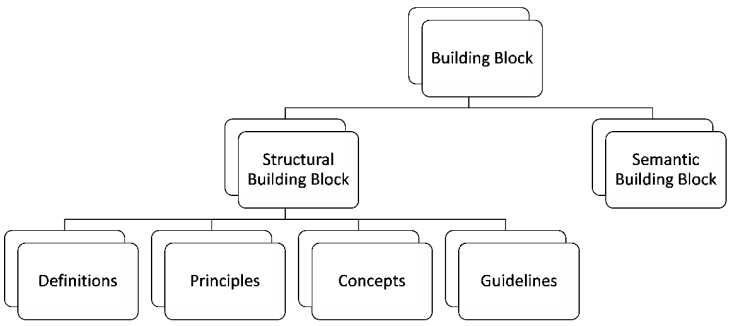
This document contains the following elements:

~~a)~~ a) an inventory of uniform components of assessment-related standards, called ~~Building~~building blocks (BBs), and their structure;

~~b)~~ b) ontology capturing relationships among BBs;

~~c)~~ c) guidelines for using standardized BBs.

Figure 1 and Figure 2 provide an overview of a representative hierarchy of BBs from this document. Figure 1 depicts the top-level classes of the hierarchy. Figure 2 illustrates the semantic building block branch of the hierarchy, with its building blocks for assessments and assessment components.



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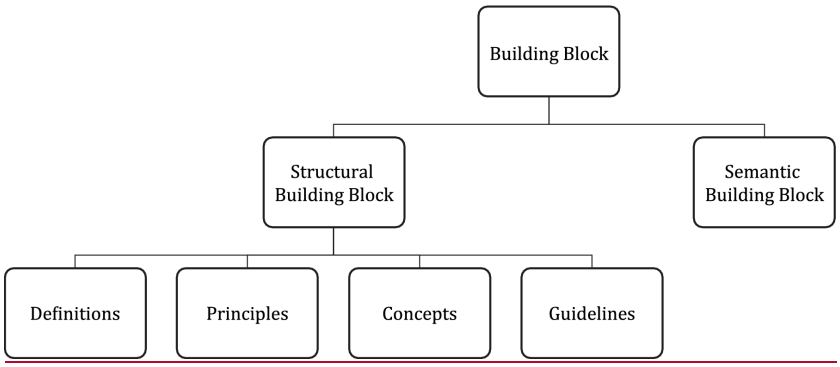
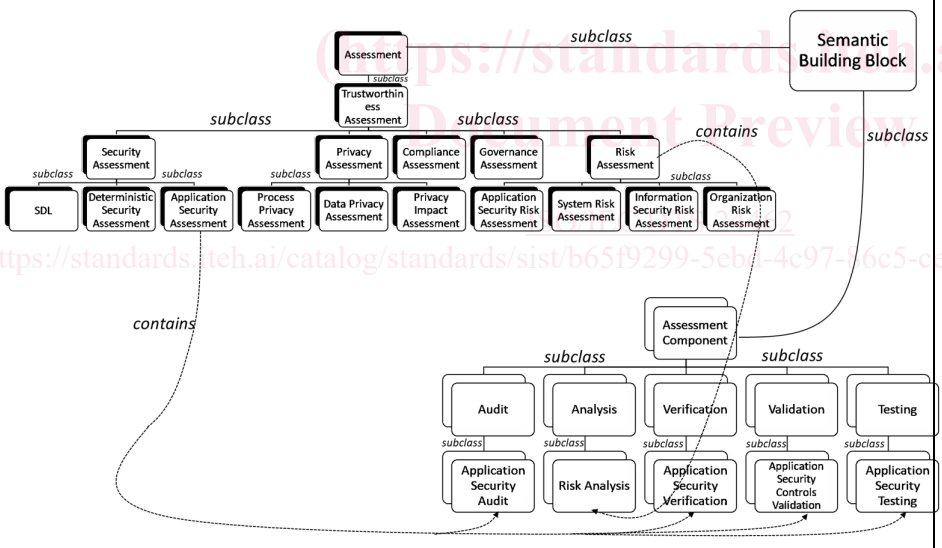


Figure 1 — Top levels of the ontology



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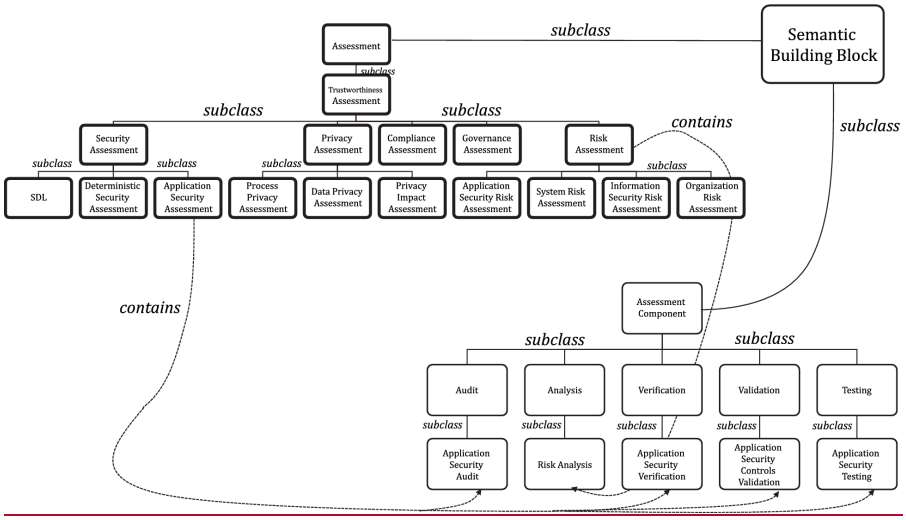

Figure 2 — Semantic Building Block branch of the ontology

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Information ~~Security, Cybersecurity~~security, cybersecurity and ~~Privacy Protection~~privacy protection — Ontology ~~Building Blocks~~building blocks for ~~Security~~security and ~~Risk Assessment~~ risk assessment

1 Scope

This document defines an inventory of building blocks conceptually associated with different types of assessments of information and communication technology (ICT) trustworthiness. These assessments apply to areas such as governance, risk management, security evaluation, ~~Secure Development Lifecycle~~secure development lifecycle (SDL), supply chain integrity and privacy. This document also defines an ontology that organizes these building blocks, and provides instructions for using the inventory of building blocks and the ontology.

Formalizing the types, categories, and structural characteristics of building blocks in the area of ICT trustworthiness assessment aims to increase efficiency and improve future harmonization in standards development and their use. Building blocks can refer to structural components as well as semantic components. These components can be connected to a variety of concepts and activities related to trustworthiness assessments, including process related, such as traceability or elements of assessment methodologies.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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~~https://www.iso.org/obp

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

3.1
structural building block
structural units that are independent of the particular assessment type, such as definitions and principles

Note 1 to entry: Structural building blocks are found in many assessment-related standards, e.g. ISO/IEC 27034-7, ISO/IEC 27007, and ISO/IEC 27036-1.

3.2
semantic building block
conceptual units that are specific to assessment types

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Note 1 to entry: Examples of semantic building blocks can be found for instance in ISO/TR 11633-2:2009: 2.52021, ISO/IEC 29134:20172023: 3.7, ISO/IEC/IEEE 26514:2008:2022, 4.4, and ISO/IEC 27034-3:2018:, 3.1.

3.3
assessment building block
semantic building block (3.2) describing a type of information and communication technology assessment

Note 1 to entry: informationInformation and communication technology assessment is the action of applying specific documented criteria to a specific software or hardware module, package or product for the purpose of determining acceptance or release of the software module, package or product.

3.4
assessment component building block
semantic building block (3.2) constituting an element of an *assessment building block* (3.3) that cannot be further fragmented

3.5
data property
properties that connect individuals with data values such as particular strings or integers

Note 1 to entry: In some knowledge representation systems, functional data properties are called attributes.

[SOURCE: OWL-2 Web Ontology Language Structural Specification and Functional-Style SyntaxQuick Reference Guide (Second Edition)(11 December), 2012)]]

3.6
datatype
entities that refer to sets of data values such as particular strings or integers

Note 1 to entry: In this sense, datatypes are analogous to classes, the main difference being that the former contain data values such as strings and integers, rather than individuals.

[SOURCE: OWL-2 Web Ontology Language Structural Specification and Functional-Style SyntaxQuick Reference Guide (Second Edition)(11 December), 2012)]]

3.7
extensible markup language
XML
subset of the Standard Generalized Markup Language (SGML)

Note 1 to entry: The goal of XML is to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with HTML. XML has been designed for ease of implementation and for interoperability with both SGML and HTML.

[SOURCE: OWL-2 Web Ontology Language Structural Specification and Functional-Style SyntaxQuick Reference Guide (Second Edition)(11 December), 2012)]]

3.8
individual
syntactic element of *owl 2 web ontology language (OWL)* (3.11) representing actual objects from the domain

