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Systems and software engineering — Life cycle management —

Part 2: Guidelines for the application of ISO/IEC/IEEE 15288 (system life cycle processes)

Ingénierie des systèmes et du logiciel — Gestion du cycle de vie —

Partie 2: Lignes directrices pour l'application de l'ISO/IEC/IEEE 15288 (processus du cycle de vie du système)

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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/JTC 1, *Information technology,* Subcommittee SC 7, *Software and systems engineering,* in cooperation with the IEEE Computer Society Systems and Software Engineering Standards Committee, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This second edition cancels and replaces the first edition (ISO/IEC/IEEE 24748-2:2018), which has been technically revised.

The main changes are as follows:

— updated 4.4 to reflect changes to ISO/IEC/IEEE 15288;

— reworked interfacing, enabling and interoperating systems;

— added considerations on agile and DevOps;

— reworked 6.5;

— reworked 6.7 to reflect changes to ISO/IEC/IEEE 15288;

— reworked 6.8 to reflect changes to ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 24748-1;

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— removed the former Annex A (guide on transitioning from former version);

— added a new Annex B to include an example on interfacing, enabling and interoperating systems;

— removed the former Annex C (engineering views and the Vee);

— added a new Annex C on model-based systems engineering.

A list of all parts in the ISO/IEC/IEEE 24748 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 www.iso.org/members.html and www.iec.ch/national-committees.

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Introduction

This document and its companion, ISO/IEC/IEEE 24748-3, specifically support the use of ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207, respectively. This document and ISO/IEC/IEEE 24748-3 reflect the alignment effort evident in ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207. Terminology, structure and content in this document and ISO/IEC/IEEE 24748-3 are aligned consistent with those in ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207. Consequently, the users of ISO/IEC/IEEE 12207 and ISO/IEC/IEEE 15288 benefit from having documents complementarily addressing all aspects of services or products over their life cycle.

This document is intended to be consistent with both ISO/IEC/IEEE 24748-1 and ISO/IEC/IEEE 15288 in its treatment of life cycle concepts and systems engineering processes.

NOTE Systems engineering for defence projects is addressed in ISO/IEC/IEEE 24748-7.

There is also increasing recognition of the importance of ensuring that all life cycle stages, and all aspects within each stage, are supported with thorough guidance enabling alignment with process documents that focus on areas besides systems and software. These can include hardware, humans, data, processes (e.g., review process), procedures (e.g., operator instructions), facilities and naturally occurring entities (e.g., water, organisms, minerals). The concept and structure of the ISO/IEC/IEEE 24748 series is intended to allow its extension to such additional domains where that will provide value to users.

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Systems and software engineering — Life cycle management —

Part 2: Guidelines for the application of ISO/IEC/IEEE 15288 (system life cycle processes)

1 Scope

This document provides guidance on the application of ISO/IEC/IEEE 15288. It addresses the application of system, life cycle, organizational, project, process, and conformance and adaption concepts, principally through references to ISO/IEC/IEEE 24748-1 and ISO/IEC/IEEE 15288. This document gives guidance on applying ISO/IEC/IEEE 15288 from the aspects of strategy, planning, application in organizations and application on projects. It also provides a comparison of the differences between ISO/IEC/IEEE 15288:2023 and ISO/IEC/IEEE 15288:2015.

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/IEEE 15288, *Systems and software engineering — System life cycle processes*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC/IEEE 15288 apply.

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

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

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

— IEEE Standards Dictionary Online: available at: http://dictionary.ieee.org

NOTE Definitions for other systems and software engineering terms typically can be found in ISO/IEC/IEEE 24765, available at www.computer.org/sevocab.

4 Overview of ISO/IEC/IEEE 15288

4.1 General

ISO/IEC/IEEE 15288 defines a set of processes to facilitate system development and information exchange among acquirers, suppliers and other stakeholders in the life cycle of a system. It applies to the acquisition of systems, which can be comprised of products, services or both, as well as to the supply, development, operation, maintenance and disposal of systems, whether performed internally or externally to an organization.

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