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**Systems and software
engineering — Life cycle
management —**

**Part 1:
Guidelines for life cycle
management**

*Ingénierie des systèmes et du logiciel — Gestion du cycle de vie —
Partie 1: Lignes directrices pour la gestion du cycle de vie*

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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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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology, SC 7, Software and systems engineering*, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This second edition cancels and replaces the first edition (ISO/IEC/IEEE 24748-1:2018), which has been technically revised.

The main changes are as follows:

- added system of systems topics based on ISO/IEC/IEEE 21839, ISO/IEC/IEEE 21840 and ISO/IEC/IEEE 21841;
- added references for interfacing and interoperating systems and general updates from ISO/IEC/IEEE 15288:2023;
- added more recent life cycle models such as DEVOPS.

A list of all parts in the ISO/IEC/IEEE 24748 series can be found on the ISO and IEC websites.

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The purpose of this document is to facilitate the use of the process content of ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207, by providing unified and consolidated guidance on life cycle management of systems and software. This is to help ensure consistency in system concepts and life cycle concepts, models, stages, processes, process application, key points of view, adaptation and use in various domains as the two International Standards are used in combination. That in turn helps a project team design a life cycle model for the system-of-interest to facilitate managing the progress of their project. Hence, ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207 are the documents that apply the concepts found in this document to specific processes.

NOTE ISO/IEC/IEEE 16326 and ISO/IEC/IEEE 24641 also apply the concepts found in this document, in the process context for project management and model-based approaches respectively.

This document also aids in identifying and planning use of life cycle processes described in ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207 that enable the project to be completed successfully, meeting its objectives/requirements for each stage and for the overall project.

There is also increasing recognition of the importance of helping to ensure that all life cycle stages and all aspects within each stage are supported with thorough guidance to enable alignment with any process documents that can be created later that focus on areas besides systems and software, including hardware, humans, data, processes (e.g. review process), procedures (e.g. operator instructions), facilities and naturally occurring entities (e.g. water, organisms, minerals).

By addressing these needs specifically in this document, the users of the process-focused ISO/IEC/IEEE 12207 and ISO/IEC/IEEE 15288 benefit not only from having one complementary document that addresses the management of life cycles of systems that provide products or services, but also from a framework that links life cycle management aspects to more than just the systems or software aspects of products or services. Additional discussion for system of systems can be found in ISO/IEC/IEEE 21839, ISO/IEC/IEEE 21840 and ISO/IEC/IEEE 21841.

In the context of this document, ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207, there is a continuum of human-made systems from those that use little to no software to those in which software is the primary interest. When software is the predominant system or element of interest, ISO/IEC/IEEE 12207 should be used. Both documents have the same process model, share most activities and tasks and differ primarily in descriptive notes. The determination of the applicability of ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207 should be decided by the nature of the system and its enabling systems. Often, a mixed tailoring of each standard can be appropriate.

ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 12207 also have published guidance documents (ISO/IEC/IEEE 24748-2 and ISO/IEC/IEEE 24748-3), respectively, to support use of the two International Standards individually.