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Systems and software engineering — Content of life-cycle information items (documentation)

Ingénierie des systèmes et du logiciel — Contenu des articles d'information du cycle de vie (documentation)

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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 ISO documents should be noted. This document was drafted in accordance with the rules given in the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

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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.

This document was prepared by the Joint Technical Committee ISO/IEC JTC 1, *Information Technology*, Subcommittee 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 fourth edition cancels and replaces the third edition (ISO/IEC/IEEE 15289:2017), which has been technically revised.

The main changes compared to the previous edition are as follows:

— made changes to reflect ISO/IEC/IEEE 12207:2017, which replaces ISO/IEC 12207:2008;

— removed references to ISO/IEC 20000-1:2011 and ISO/IEC 20000-2:2012, which are no longer within the scope of ISO/IEC JTC 1/SC 7 and have been superseded.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these national standards bodies can be found at www.iso.org/members.html.

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Introduction

The purpose of this document is to provide requirements for identifying and planning the specific information items (information products) to be developed and revised during systems and software life cycles and service processes. This document specifies the purpose and content of all identified systems and software life-cycle information items, as well as information items for information technology service management. The information item contents are defined according to generic document types and the specific purpose of the document. Information items are combined or subdivided as needed for project or organizational purposes.

This document is based on the life-cycle processes specified in ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015. ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 establish a common framework for system and software life-cycle processes. These standards define an identical process model for the process purposes and outcomes, though their tasks and activities differ. Their process reference model does not represent a particular process implementation approach, nor does it prescribe a system/software life-cycle model, methodology or technique. Their processes are grouped in four categories: agreement, organizational project-enabling, technical management and technical.

ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 establish a common Information Management process as part of a framework for systems and software life-cycle processes, and identify, recommend or require a number of information items (documentation). ISO/IEC/IEEE 12207:2017 does not always specify when software information items are to be prepared, nor does it identify information item contents. This document is intended to be used in this context. IEEE contributed IEEE 12207.1-1997[1)] as a source for the first edition of this document.

1) *Guide for Information Technology — Software Life Cycle Processes — Life Cycle Data.*

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Systems and software engineering — Content of life-cycle information items (documentation)

1 Scope

This document specifies the purpose and content of all identified systems and software life-cycle and service management information items (documentation). The information item contents are defined according to generic document types, as presented in Clause 7, and the specific purpose of the document, as presented in Clause 10.

This document assumes an organization is performing life-cycle processes, or delivering system or software engineering services, using either or both of the following:

— ISO/IEC/IEEE 12207:2017 software life cycle processes;

— ISO/IEC/IEEE 15288:2015 system life cycle processes.

ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 define an Information Management process, but do not "detail information items in terms of name, format, explicit content, and recording media" (ISO/IEC/IEEE 12207:2017, 1.4). These standards identify, recommend or require a number of documentation items. This document provides a mapping of processes from the above standards to a set of information items. It provides a consistent approach to meeting the information and documentation requirements of systems and software engineering and engineering service management.

The generic document types defined in this document are used to identify the information necessary to support the processes required by ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015. The generic document types (which can be referred to as information item types) are used to identify the information necessary to support the processes.

For each life-cycle process or service, it would be possible to prepare a policy, plan, procedures and reports, as well as numerous records, requests, descriptions and specifications. Such an elaboration of the documentation schema would be more rigorous than specified by ISO/IEC/IEEE 12207:2017 or ISO/IEC/IEEE 15288:2015. As ISO/IEC/IEEE 15288:2015, 1.4 points out, "The users of this document are responsible for selecting a life cycle model for the project and mapping the processes, activities, and tasks in this document into that model. The parties are also responsible for selecting and applying appropriate methodologies, methods, models and techniques suitable for the project." Thus, information items are combined or subdivided consistent with the life cycle model, as needed for project or organizational purposes, as further defined in Clause 4 and Clause 5.

This document is not a management system standard and does not establish a service management system, quality management system, or asset management system. The scope of this document does not include the following:

a) the format or content of recommended input data or input information items, except for the content of those input items that are also output information items;

b) instructions on combining or subdividing information items and information item contents of a similar nature;

c) guidance on selecting an appropriate presentation format, delivery media and maintenance technology for systems or software life-cycle data, records, information items or documentation, such as electronic publishing systems, content management systems or data repositories;

NOTE ISO/IEC/IEEE 26531 provides requirements for content management and component content management systems. ISO/IEC 26514 provides guidance on formats for user documentation (information for users).

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d) detailed content for information items related to general business, contractual, organizational and financial management that is not specific to systems and software engineering and engineering service management, such as business strategies, contract change notices (agreement change report), human resources and investment policies, personnel selection criteria, financial budgeting and accounting policies and procedures, cost reports, or payroll data;

e) information items showing only approval of an ISO/IEC/IEEE 12207:2017 or ISO/IEC/IEEE 15288:2015 subclause, such as ISO/IEC/IEEE 12207:2017, 6.4.10.3 c) 3);

f) any ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017 subclause not explicitly or implicitly identifying the recording of information about a process, activity or task, for example, ISO/IEC/IEEE 12207:2017, 6.2.4.3 c);

g) work products, models, software, and other artifacts of life-cycle products and services that are not information items or records used in information items.

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 12207:2017, *Systems and software engineering — Software life cycle processes*

ISO/IEC/IEEE 15288:2015, *Systems and software engineering — System life cycle processes*

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