

IEEE Standard for Software Project Management Plans

Sponsor

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of the
IEEE Computer Society**

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Abstract: The format and contents of software project management plans, applicable to any type or size of software project, are described. The elements that should appear in all software project management plans are identified.

Keywords: management plans, software project management plans

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Introduction

(This introduction is not part of IEEE Std 1058-1998, IEEE Standard for Software Project Management Plans.)

Overview

This standard contains four clauses. Clause 1 defines the scope and purpose of the standard. Clause 2 provides references to other IEEE standards that should be followed when applying this standard. Clause 3 provides definitions of terms that are used throughout the standard. Clause 4 contains an overview and detailed specification of the standard, including required components that shall be included, and optional components that may be included in software project management plans (SPMPs) based on this standard. The sequence of the elements presented in Clause 4 does not imply that SPMPs must be developed in the order of presentation. In most instances, SPMPs based on this standard will be developed by repeated iteration and refinement of the various elements in the plan.

Purpose

This standard specifies the format and content of SPMPs. This standard does not specify the exact techniques to be used in developing an SPMP, nor does it provide examples of SPMPs. Each organization using this standard should develop a set of practices and procedures to provide detailed guidance for preparing and updating of SPMPs based on this standard. These practices and procedures should take into account the environmental, organizational, and political factors that influence application of the standard.

Not all software projects are concerned with development of source code for a new software product. Some software projects consist of a feasibility study and definition of product requirements. Other software projects terminate upon completion of product design, and some projects are concerned with major modifications to existing software products. This standard is applicable to all types of software projects; applicability is not limited to projects that develop source code for new products. Project size or type of software product does not limit application of this standard. Small projects may require less formality in planning than large projects, but all components of the standard should be addressed by every software project.

Software projects are sometimes component parts of larger projects. In these cases, the SPMP may be a separate component of a larger plan or it may be merged into a system-level or business-level project management plan.

Audience

This standard is intended for use by software project managers and other personnel who prepare and update project plans and monitor adherence to those plans.

Evolution of plans

Developing the initial version of the SPMP should be one of the first activities to be completed in a software project. As the project evolves the nature of the work to be done will be better understood and plans will become more detailed. Thus, each version of the plan should be placed under configuration management, and each version should contain a schedule for subsequent updates to the plan.

Terminology

This standard follows the *IEEE Standards Style Manual*. In particular, the word *shall* is used to indicate mandatory requirements to be strictly followed in order to conform to the standard and from which no deviation is permitted.

The word *should* is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain course of action is deprecated but not prohibited.

The word *may* is used to indicate a course of action permissible within the limits of the standard.

The word *can* is used for statements of possibility and capability, whether material, physical, or causal.

History

The project authorization request for development of this standard was approved by the IEEE Standards Board on 13 December 1984. The first version of this standard (IEEE Std 1058.1-1987) was approved on 10 December 1987. The standard was reaffirmed 2 December 1993. IEEE Std 1058a was approved by the IEEE-SA Standards Board on 17 September 1998; the revision of the full standard was approved on 8 December 1998. The changes in this version of the standard are based on comments from users of the 1987 standard and the desire for conformance with IEEE/EIA 12207.0-1996.

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IEEE Standard for Software Project Management Plans

1. Overview

This standard prescribes the format and content of software project management plans (SPMPs). An SPMP is the controlling document for managing a software project; it defines the technical and managerial processes necessary to develop software work products that satisfy the product requirements.

The readers of this document are referred to Annex B for guidelines for using this document to meet the requirements of IEEE/EIA 12207.1-1997, IEEE/EIA Guide for Information Technology—Software life cycle processes—Life cycle data.

This standard may be applied to any type of software project. Use of this standard is not restricted by the size, complexity, or criticality of the software product. This standard is applicable to all forms of product delivery media, including traditional source code, firmware, embedded systems code, programmable logic arrays, and software-in-silicon. This standard can be applied to any, or all, phases of a software product life cycle.

This standard identifies the elements that should appear in all SPMPs. There are two types of compliance to this standard: *format compliance*, in which the exact format and contents of this standard are followed in a project plan; and *content compliance*, in which the contents of this standard are rearranged in a project plan. In the case of content compliance, a mapping should be provided to map the content-compliant project plan into the various clauses and subclauses of this standard. Project plans that conform to the earlier version of this standard, IEEE Std 1058.1-1987, may claim partial content-compliance with this standard; this is the only type of partial content-compliance allowed. All compliant project plans must be titled “Software Project Management Plan.”

Project plans based on this standard may incorporate additional elements by appending additional clauses or subclauses. The various clauses and subclauses of an SPMP conformant to this standard may be included in the plan by direct incorporation or by reference to other plans. Access to plans incorporated by reference shall be provided for all project stakeholders.

Some organizations may have generic project plans based on this standard, so that development of a particular project plan will involve tailoring of the generic plan in areas such as the process model, supporting processes, and infrastructure, and adding project-unique elements such as schedule, budget, work activities, and risk management plan.

2. References

This standard shall be used in conjunction with the following publication. When the following standard is superseded by an approved revision, the revision shall apply.

IEEE Std 610.12-1990, IEEE Standard Glossary of Software Engineering Terminology.¹

3. Definitions

The definitions listed here establish meanings within the context of this standard. Definitions of other terms that may be appropriate within the context of this standard can be found in IEEE Std 610.12-1990.

3.1 acquirer: The individual or organization that specifies requirements for and accepts delivery of a new or modified software product and its documentation. The acquirer may be internal or external to the supplier organization. Acquisition of a software product may involve, but does not necessarily require, a legal contract or a financial transaction between acquirer and supplier.

3.2 baseline: A work product that has been formally reviewed and accepted by the involved parties. A baseline should be changed only through formal configuration management procedures. Some baselines may be project deliverables while others provide the basis for further work.

3.3 milestone: A scheduled event used to measure progress. Examples of major milestones for software projects may include an acquirer or managerial sign-off, baselining of a specification, completion of system integration, and product delivery. Minor milestones might include baselining of a software module or completion of a chapter of the user's manual.

3.4 project agreement: A document or set of documents baselined by the acquirer and the supplier that specifies the conditions under which the project will be conducted. A project agreement may include items such as the scope, objectives, assumptions, management interfaces, risks, staffing plan, resource requirements, price, schedule, resource and budget allocations, project deliverables, and acceptance criteria for the project deliverables. Documents in a project agreement may include some or all of the following: a contract, a statement of work, user requirements, system engineering specifications, software requirements specifications, a software project management plan, supporting process plans, a business plan, a project charter, or a memo of understanding.

3.5 project deliverable: A work product to be delivered to the acquirer. Quantities, delivery dates, and delivery locations are specified in a project agreement. Project deliverables may include the following: operational requirements, functional specifications, design documentation, source code, object code, test results, installation instructions, training aids, user's manuals, product development tools, and maintenance documentation. Project deliverables may be self-contained or may be part of a larger system's deliverables.

3.6 software project: The set of work activities, both technical and managerial, required to satisfy the terms and conditions of a project agreement. A software project should have specific starting and ending dates, well-defined objectives and constraints, established responsibilities, and a budget and schedule. A software project may be self-contained or may be part of a larger project. In some cases, a software project may span only a portion of the software development cycle. In other cases, a software project may span many years and consist of numerous subprojects, each being a well-defined and self-contained software project.

3.7 supplier: An organization that develops some or all of the project deliverables for an acquirer. Suppliers may include organizations that have primary responsibility for project deliverables and subcontractors that deliver some part of the project deliverables to a primary supplier. In the latter case, the primary supplier is also an acquirer.

¹IEEE publications are available from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, USA (<http://standards.ieee.org/>).