

IEEE Recommended Practice for Software Design Descriptions

IEEE Standards Board

Approved March 12, 1987

Reaffirmed December 2, 1993

American National Standards Institute

Approved October 6, 1987

Sponsor

**Software Engineering Subcommittee of the Technical Committee on Software Engineering
of the
IEEE Computer Society**

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Comments on standards and requests for interpretations should be addressed to:

Secretary
IEEE Standards Board
345 East 47th Street
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Foreword

(This Foreword is not a part of IEEE Std 1016-1987, IEEE Recommended Practice for Software Design Descriptions.)

Purpose

This recommended practice specifies the necessary information content and recommends an organization for software design descriptions. This document does not explicitly support, nor is it limited to, any particular software design methodology or descriptive technology. It will guide the production of anything from paper design documents to an automated database of design information. For an organization in the process of developing a design description standard, use of this document will help the new standard meet the needs of all of its users. For an organization with a mature design description standard, it should prove useful in evaluating and modifying that standard in light of the informational and organizational needs of the design description user community.

This practice can be applied to commercial, scientific, and military software. Applicability is not restricted by size, complexity, or criticality of the software. This practice considers both the software and its system operational environment. It can be used where software is the system or where software is part of a larger system that is characterized by hardware and software components and their interfaces.

Overview

This document consists of six sections. Section 1 defines the scope of the recommended practice and Section 2 references other ANSI/IEEE standards that should be followed when applying this practice. Section 3 provides definitions of terms within the context of the practice. Section 4 places the Software Design Description into the framework of the software development life cycle. Section 5 describes the minimum information that shall be included in a software design description and Section 6 gives a recommended organization for software design descriptions. The Appendix shows a sample table of contents for a software design description.

Audience

This document is intended for those in technical and managerial positions who prepare and use software design descriptions. It will guide a designer in the selection, organization, and presentation of design information. It will help standards developers ensure that a design description is complete, concise, and well organized.

Software design descriptions play a pivotal role in the development and maintenance of software systems. During its lifetime, a given design description is used by project managers, quality assurance staff, configuration managers, software designers, programmers, testers, and maintainers. Each of these users has unique needs, both in terms of required design information and optimal organization of that information. Hence, a design description must contain all the design information needed by those users.

Terminology

This recommended practice follows the IEEE Guide to Standards Development. In particular, the word *shall* and the imperative form identify mandatory material within the recommended practice. The words *should*, *might*, and *may* identify advisory material.

History

The project authorization request for development of this recommended practice was approved by the IEEE Standards Board on September 22, 1983. Modification of the authorization request to change the title and

scope was approved on March 13, 1986. A series of 10 meetings were held within the United States and internationally between March, 1983 and March, 1986. These meetings produced the draft submitted for balloting in April, 1986.

Suggestions for the improvement of this practice will be welcome. They should be sent to

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Introduction

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