

IEEE Std 828™-2005
(Revision of IEEE Std 828-1998)

828™

IEEE Standard for Software Configuration Management Plans

IEEE Computer Society

Sponsored by the
Software Engineering Standards Committee



3 Park Avenue, New York, NY 10016-5997, USA

12 August 2005

Print: SH95326
PDF: SS95326

IEEE Standards

Currently in preview, click buy full version

Currently in preview, click buy full version

Recognized as an
American National Standard (ANSI)

IEEE Std 828™-2005
(Revision of
IEEE Std 828-1998)

IEEE Standard for Software Configuration Management Plans

Sponsor

Software Engineering Standards Committee
of the
IEEE Computer Society

Approved 31 May 2005

American National Standards Institute

Approved 14 February 2005

IEEE-SA Standards Board

Abstract: The minimum required contents of a Software Configuration Management (SCM) Plan are established via this standard. This standard applies to the entire life cycle of critical software (e.g., where failure would impact safety or cause large financial or social losses). It also applies to noncritical software and to software already developed. The application of this standard is not restricted to any form, class, or type of software.

Keywords: configuration control, configuration control board, configuration identification, configuration item, configuration review, configuration status accounting, release management, software configuration management, software configuration management plan

The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

Copyright © 2005 by the Institute of Electrical and Electronics Engineers, Inc.
All rights reserved. Published 12 August 2005. Printed in the United States of America.

IEEE is a registered trademark in the U.S. Patent & Trademark Office, owned by the Institute of Electrical and Electronics Engineers, Incorporated.

Print: ISBN 0-7381-4764-8 SH95326
PDF: ISBN 0-7381-4765-6 SS95326

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

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.

Use of an IEEE Standard is wholly voluntary. The IEEE disclaims liability for any personal injury, property or other damage, of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, or reliance upon this, or any other IEEE Standard document.

The IEEE does not warrant or represent the accuracy or content of the material contained herein, and expressly disclaims any express or implied warranty, including any implied warranty of merchantability or fitness for a specific purpose or that the use of the material contained herein is free from patent infringement. IEEE Standards documents are supplied "AS IS."

The existence of an IEEE Standard does not imply that there are no other ways to produce, test, measure, purchase, market, or provide other goods and services related to the scope of the IEEE Standard. Furthermore, the viewpoint expressed at the time a standard is approved and issued is subject to change brought about through developments in the state of the art and comments received from users of the standard. Every IEEE Standard is subjected to review at least every five years for revision or reaffirmation. When a document is more than five years old and has not been reaffirmed, it is reasonable to conclude that its contents, although still of some value, do not wholly reflect the present state of the art. Users are cautioned to check to determine that they have the latest edition of any IEEE Standard.

In publishing and making this document available, the IEEE is not suggesting or endorsing professional or other services for, or on behalf of, any person or entity. Nor is the IEEE undertaking to perform any duty owed by any other person or entity to another. Any person utilizing this, and any other IEEE Standard, document, should rely upon the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

Interpretations: Occasionally questions may arise regarding the meaning of portions of standards as they relate to specific applications. When the need for interpretations is brought to the attention of IEEE, the Institute will initiate action to prepare appropriate responses. Since IEEE Standards represent a consensus of concerned interests, it is important to ensure that any interpretation has also received the concurrence of a balance of interests. For this reason, IEEE and the members of its societies and Standards Coordinating Committees are not able to provide an instant response to interpretation requests except in those cases where the matter has previously received formal consideration. At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than a formal position, explanation, or interpretation of the IEEE.

Comments for revision of IEEE Standards are welcome from any interested party, regardless of membership affiliation with IEEE. Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments. Comments on standards and requests for interpretations should be addressed to:

Secretary, IEEE-SA Standards Board
1100 21st Hoes Lane
Piscataway, NJ 08854
USA

NOTE—Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken with respect to the existence or validity of any patent rights in connection therewith. The IEEE shall not be responsible for identifying patents for which a license may be required by an IEEE standard or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

Authorization to photocopy portions of any individual standard for internal or personal use is granted by the Institute of Electrical and Electronics Engineers, Inc., provided that the appropriate fee is paid to Copyright Clearance Center. To arrange for payment of licensing fee, please contact Copyright Clearance Center, Customer Service, 222 Rosewood Drive, Danvers, MA 01923 USA; +1 978 750 8400. Permission to photocopy portions of any individual standard for educational classroom use can also be obtained through the Copyright Clearance Center.

Introduction

This introduction is not part of IEEE Std 828-2005, IEEE Standard for Software Configuration Management Plans.

Although this standard addresses software configuration management plans, it is primarily concerned with the activity of planning for software configuration management (SCM). It is the intent of the IEEE that the next version of this standard will be a process standard focusing on planning for SCM. SCM activities, whether planned or not, are performed on all software development projects; planning makes these activities more effective. Good planning results in a document that captures the planning information, makes the information the property of the project, communicates to all who are affected, and provides a basis for ongoing planning.

SCM is a formal engineering discipline that, as part of overall system configuration management, provides the methods and tools to identify and control the software throughout its development and use. SCM activities include the identification and establishment of baselines; the review, approval, and control of changes; the tracking and reporting of such changes; the audits and reviews of the evolving software product; the management of software release and delivery activities, and the control of interface documentation and project supplier SCM.

SCM is the means through which the integrity and traceability of the software system are recorded, communicated, and controlled during both development and maintenance. SCM also supports reduction of overall software life cycle cost by providing a foundation for product and project measurement.

SCM constitutes good engineering practice for all software projects, whether phased development, rapid prototyping, or ongoing maintenance. It enhances the reliability and quality of software by

- Providing a structure for identifying and controlling documentation, code, interfaces, and databases to support all life cycle phases
- Supporting a chosen development/maintenance methodology that fits the requirements, standards, policies, organization, and management philosophy
- Producing management and product information concerning the status of baselines, change control, tests, releases, audits, etc.

IEEE Std 828-2005 was prepared by the Life Cycle Data Harmonization Working Group of the Software Engineering Standards Committee of the IEEE Computer Society. This revision is a minor update to IEEE 828-1998 and was done to ensure consistency among the SCM guidance provided by this standard, IEEE/EIA 12207.1™-2007 IEEE/EIA Guide for Information Technology—Software Life Cycle Processes—Life Cycle Data, and the IEEE Software Engineering Body of Knowledge (SWEBOK) project. Information regarding relationships of IEEE 828-2005 to other standards is contained in Annex B.

Notice to users

Errata

Errata, if any, for this and all other standards can be accessed at the following URL: <http://standards.ieee.org/reading/ieee/updates/errata/index.html>. Users are encouraged to check this URL for errata periodically.

Interpretations

Current interpretations can be accessed at the following URL: <http://standards.ieee.org/reading/ieee/interp/index.html>.

Patents

Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken with respect to the existence or validity of any patent rights in connection therewith. The IEEE shall not be responsible for identifying patents or patent applications for which a license may be required to implement an IEEE standard or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

Participants

The following is a list of participants in the Life Cycle Data Harmonization Working Group.

John L. Scott, Chair

Jeffrey Brannan	Gregg Giesler	Subramanya R. Jois
	Manish Ingle	

The following members of the individual balloting committee voted on this standard. Balloters may have voted for approval, disapproval, or abstention.

Edward Bartlett	Gregg Giesler	Miroslav Pavlovic
Alexander Berler	Lewis Gray	Lou Pinto
Bakul Bhatnagar	Michael Grimley	Gerald Radack
Richard Biehn	Victoria Hailey	Annette Reilly
Bruce Bullock	Mark Henley	James Ruggieri
Lawrence Catchpole	John Horch	Helmut Sandmayr
Keith Chow	William Junk	Robert Schaaf
Antonio M Cicu	Thomas M Kurihara	David Schultz
Todd Cooper	Piotr Karocki	Robert Shillato
Terry Dietz	J. Dennis Lawrence	Mike Smith
David Dikel	Yuhai Ma	Luca Spotorno
Einar Dragstedt	Joseph Marshall	Thomas Starai
Dr. Sourav Dutta	Jacques Mathot	T. H. Tse
Clint Early, Jr.	Celia Modell	Mark-Rene Uchida
William Eventoff	James Moore	Derek Woo
Jay Forster	Rajesh Moorkath	Oren Yuen
Eva Freund		Li Zhang

When the IEEE-SA Standards Board approved this standard on 14 February 2005, it had the following membership:

Don Wright, *Chair*
Steve M. Mills, *Vice Chair*
Judith Gorman, *Secretary*

Chuck Adams
Stephen Berger
Mark D. Bowman
Joseph A. Bruder
Bob Davis
Roberto de Marca Boisson
Julian Forster*
Arnold M. Greenspan
Mark S. Halpin

Raymond Hapeman
Richard J. Holleman
Richard H. Hulett
Lowell G. Johnson
Joseph L. Koepfinger*
Hermann Koch
Thomas J. McGean

Daleep C. Mohla
Paul Nikolich
T. W. Olsen
Ronald C. Petersen
Gary S. Robinson
Frank Stone
Malcolm V. Thaden
Doug Topping
Joe D. Watson

*Member Emeritus

Also included are the following nonvoting IEEE-SA Standards Board liaisons:

Satish K. Aggarwal, *NRC Representative*
Richard DeBlasio, *DOE Representative*
Alan Cookson, *NIST Representative*

Don Messina
Jennie Steinbock
IEEE Standards Project Editors

Contents

1. Overview	1
2. Definitions and acronyms	2
2.1 Definitions	2
2.2 Acronyms	2
3. The Software Configuration Management Plan	2
3.1 Introduction	2
3.2 SCM management	4
3.3 SCM activities	5
3.4 SCM schedules	10
3.5 SCM resources	11
3.6 SCM plan maintenance	11
4. Adapting the plan	11
4.1 Upward adaptation	12
4.2 Downward adaptation	12
4.3 Format	12
5. Conformance to the standard	12
5.1 Minimum information	12
5.2 Presentation format	12
5.3 Consistency criteria	13
5.4 Conformance declaration	13
Annex A (informative) Bibliography	14
Annex B (informative) Relationship of IEEE 828-2005 to other standards	15
B.1 Relationship of ISO/IEC 12207 to IEEE/EIA 12207	15
B.2 Consistency of IEEE 828-2005 with IEEE/EIA 12207.0 and ISO/IEC TR-19759	15
B.3 Correlation	16
B.4 Document compliance	16

IEEE Standard for Software Configuration Management Plans

1. Overview

1.1 Scope

This standard establishes the minimum required contents of a Software Configuration Management (SCM) Plan (also referred to as “the Plan”). This standard applies to the entire life cycle of critical software; e.g., where failure would impact safety or cause large financial or social losses. It also applies to noncritical software and to software already developed. The application of this standard is not restricted to any form, class, or type of software.

1.2 Purpose

The SCM Plan documents what SCM activities are to be done, how they are to be done, who is responsible for doing specific activities, when they are to happen, and what resources are required. It can address SCM activities over any portion of a software product’s life cycle. This standard is consistent with the IEEE Software Engineering Body of Knowledge (SWEBOK) project Stoneman release on the topic of configuration management and with IEEE/EIA Std 12207.0™ [B4]^{1,2}.

The content of the Plan is identified in Clause 3 of this standard. The required information is indicated by the words “shall” and “required.” Additional optional information is also identified as appropriate. The user of this standard, however, is expected to expand and supplement the minimum requirements as necessary for the development environment, specific industry, organization, and project. Adapting a plan for conformance with this standard is described in Clause 4.

The primary users of this standard are assumed to be those planning SCM activities or performing SCM audits.

In considering adoption of this standard, regulatory bodies should be aware that specific application of this standard may already be covered by one or more IEEE standards documents relating to quality assurance, definitions, or other matters (see IEEE Std 730™-2002 [B3]). It is not the purpose of this standard to supersede, revise, or amend existing standards directed to specific industries or applications.

¹IEEE publications are available from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, USA

² The numbers in brackets correspond to those of the bibliography in Annex A.