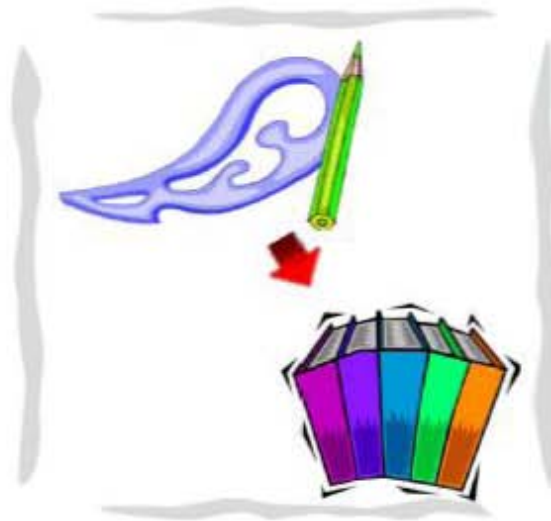


Template



Template FOR A SOFTWARE MAINTENANCE PLAN Fourth Edition

ISBN 0-9770309-7-0

ISBN13 978-0-9770309-7-2

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SEPT Product Number 46

Produced by Software Engineering Process Technology (SEPT)
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11/28/2011

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11/28/2011

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Revision History

Revision Number	Purpose
Second Edition	Incorporated compliance with ISO/IEC 12207: Amd 1: 2002, Information Technology-Software Life Cycle Processes (AMENDMENT 1) and ISO/IEC 12207: Amd 2: 2004, Information Technology-Software Life Cycle Processes (AMENDMENT 2)
Third Edition	Incorporated compliance with ISO/IEC 14764: 2006, <i>Software Engineering – Software Life Cycle Processes - Maintenance</i>
Forth Edition	Incorporated compliance with ISO/IEC 12207:2008, <i>Systems and software engineering - Software life cycle processes</i>

11/28/2011

Introduction

Background

The last stage of the software engineering life cycle, operation and maintenance, often takes the majority of life cycle funds. Proper planning can help reduce life cycle costs for this stage. It is therefore prudent to possess software maintenance plans and procedures to contain life cycle costs, and to operate an efficient organization. Maintenance planning prepares for the personnel, environment, and financial resources required to provide software maintenance for software systems. Planning consist of developing a Maintenance Concept and then a Maintenance Plan.

Software Engineering Process Technology (SEPT) in conjunction with the noted Software Maintenance expert Thomas Pigoski has developed this template for a Software Maintenance Plan to aid the software engineer in implementing software maintenance requirements. This template is easy to use, self-explanatory, and does not require expensive training or extensive experience.

About Software Maintenance

Software maintenance is the totality of activities required to provide cost-effective support to a software system. Activities are performed during the pre-delivery stage as well as the post-delivery stage. Pre-delivery activities include planning for post-delivery operations, supportability, and logistics determination. Post-delivery activities include software modification, training, and operating a help desk.

How to use this Document

This document is designed to aid a person with limited knowledge of software maintenance requirements and methods to plan for software maintenance of a project or system. This template may be applied to manual or automated (computer processes) methods and can be easily implemented by one or more persons. It is applicable to small, highly critical 10-line software programs and to programs over 1 million lines of code.

Organizational Requirements

Maintenance is performed by the developer, a separate maintainer, or by a third-party organization. It is important that the organization responsible for maintenance be identified in writing with full responsibilities. The Maintenance Plan accomplishes this. The maintainer should develop the Maintenance Plan as well as the supporting procedures. Since software maintenance activities invoke the use of organizational resources, it is recommended that the highest level of management in the organization approves of this undertaking and approves the final version of the plan and the procedures. Other functions that should also review and approve this plan include Software Quality Assurance, Software Engineering, Software Testing, Project Management (when applicable), the organization's Software Configuration Management Function (when applicable), and the customer (when applicable).

This template's illustrative text is designed for use as is, by stripping the tutorial notations underlined in the text. The text can also be modified for requirements and guidance to meet organizational needs, and unique environments. It is not a requirement to use the paragraph numbers contained in this document and additional comments are encouraged whenever appropriate to fully comply with an organization's specific requirements. This template is applicable to all types of software from information technology, commercial, scientific, and other non-business applications (such as creating a complex web site). The user of this template should spell out all of the issues that are prevailing regarding the need for software maintenance prior to tailoring the template to ascertain that all such organizational issues are addressed.

Reference Software Maintenance Standards

This template meets the requirements of the following standards:

International Standards

- ISO/IEC 12207:2008, Systems and *software engineering - Software life cycle processes*
- ISO/IEC 14764: 2006, *Software Engineering – Software Life Cycle Processes - Maintenance*

USA Standards – (International application)

- IEEE Std 14764: 2006, *Software Engineering – Software Life Cycle Processes - Maintenance*

Standards and Specifications may be procured through SEPT at www.12207.com.

Reference Books

Practical Software Maintenance: Best Practices for Managing Your Software Investment,

Thomas M. Pigoski, John Wiley and Sons, New York, 1997.

Guide to Software Engineering Standards and Specifications, S. Magee and L Tripp. Artech House, 1997

Product Support

SEPT will provide 3 hours of free consulting with this product concerning the understanding and application of this template, to be provided within 60 days of purchase. This consultation is available at the SEPT Help Desk. Contact us at 425-391-2344 between the hours of 8 AM to 5 PM PST, Monday through Friday, or e-mail your questions to stanmagee@smartwire.net.

Warranties and Liability

SEPT makes no warranties, implied or stated with respect to this template and it is provided on an “*as is basis*”. SEPT will have no liability for any indirect, incidental, special or consequential damages or any loss of revenue or profits arising under, or with respect to the use of this document.

Template for a Software Maintenance Plan

Enter the Company/Organization Name

Software Maintenance Plan

Enter the Program/Project Name or Product Name

Enter date prepared/approved

Enter version/revision number

Enter contact reference

*(Example: Company ABC
Software Maintenance Plan
System XYZ
Date Prepared: 9-1-2006
Date Approved: 10-1-2006
Version 1.0
Contract XYZ*

Enter “prepared by” name and the names of approving manager(s)

*(Example:
Prepared by
John Doe
“Head”, Software Maintenance Department*

*Approved by
Mary Smith
Director of Operations)*

11/28/2011

Recommended Table of Contents

1.0 Scope and Purpose

(Who, what, why, where, when)

2.0 Applicable Documents

(Authorizing standards and agreements plus organizational policy/procedure governing software maintenance).

3.0 Acronyms and Definitions

(Definitions in accordance with required standard or company standard for software maintenance).

4.0 Application of the Plan

(How is this plan to be used?)

5.0 General Requirements

(Guidance and requirements to be followed in implementing software maintenance on this project)

- 5.1 Introduction
- 5.2 Maintenance Concept
- 5.3 Organization and Maintenance Activities
- 5.4 Resources
- 5.5 Maintenance Process
- 5.6 Training Requirements
- 5.7 Maintenance Records and Reports

Sample Table of Contents

1.0 Scope and Purpose

Describe the organizational framework that this plan shall be applied to and the purpose for its existence as illustrated below:

Scope -This manual provides the direction and guidance for the performance of the Software Maintenance Process for software products. It pertains to software products developed internally or externally to software organizations.

Purpose -The purpose of this plan is to describe the criteria and direction necessary to perform the activities of software maintenance. These are cited in the organization's software development plan, project management plan or customer statement of work.

2.0 Applicable Documents

List the organization's policies, procedures, standards and specifications that will govern the successful accomplishment and delivery of this program/project's product as shown below as well as the customer contract and prescribed specifications and standards.

2.1 Organization Mission Statement. (Prepared by: Organization President/CEO.)

2.2 Organization Policy on Continuous Process Improvement (Prepared by: Senior Management)

2.3 Organization Software Maintenance Process Manual (Prepared by: "Head", Software Maintenance Department)

2.4 Organization Quality Management Systems Manual (Prepared by: Director Quality Assurance)

2.5 IEEE Standard 610.12-1990: Standard Glossary of Software Engineering Terminology

2.6 ISO/IEC 14764: Software Engineering – Software Maintenance

2.7 ISO/IEC 12207:2008: Systems and software engineering – Software life cycle processes

3.0 Acronyms and Definitions

All abbreviations/acronyms and unique definitions should be listed for ease of reader understanding.

3.1 Acronyms used in the Software Maintenance Plan:

CCB	Configuration Control Board
ER	Enhancement Request
FCA	Functional Configuration Audit
MR	Modification Request
PCA	Physical Configuration Audit
PR	Problem Report
SCM	Software Configuration Management
SDF	Software Development Folder
SEE	Software Engineering Environment
SEPT	Software Engineering Process Technology
STE	Software Test Environment
WBT	Web Based Training

3.2. Definitions: Terminology used to describe the Software Maintenance Plan. Definitions are contained in IEEE Standard 610.12-1990, ISO/IEC 14764, and ISO/IEC 12207 except as where noted or listed below. Terminology may also be defined in the organization's standards.

Adaptive Maintenance: The modification of a software product, performed after delivery, to keep a software product usable in a changed or changing environment.

Corrective Maintenance: The reactive modification of a software product performed after delivery to correct discovered problems.

Emergency Maintenance: an unscheduled modification performed to temporarily keep a system operational pending corrective maintenance.

Maintainability: the capability of the software product to be modified. Modifications may include corrections, improvements or adaptation of the software to changes in environment, and in requirements and functional specifications [ISO/IEC 9126-1].

Maintainer: An organization that performs maintenance activities.

Maintenance Enhancement: A maintenance enhancement is a software change which is a new requirement.

Maintenance Plan: A document setting out the specific maintenance practices, resources, and sequence of activities relevant to maintaining a software product.

Modification Request: A generic term used to identify proposed changes to a software product that is being maintained.

Perfective Maintenance: The modification of a software product after delivery to detect and correct latent faults in the software product before they are manifested as failures.

Preventive Maintenance: The modification of a software product after delivery to detect and correct latent faults in the software product before they become operational faults.

Problem Report (PR): A term used to identify and describe problems detected in a software product.

Software Maintenance: Software maintenance is the totality of activities required to provide cost-effective support to a software system. Activities are performed during the pre-delivery stage as well as the post-delivery stage. Pre-delivery activities include planning for post-delivery operations, supportability, and logistics determination. Post-delivery activities include software modification, training, and operating a help desk.

Software Migration: Software migration is the process of transitioning a software product from an old to a new operating environment. A common example is migrating from a mainframe environment to a client/server environment; or a product could be migrated from one technology (e.g., files and COBOL) to another (e.g., relational DBMS and 4GL).

Software Retirement: Software retirement is the process of removing a software product from service in an orderly manner once the product has reached the end of its useful life.

Software Transition: A controlled and coordinated sequence of actions wherein software development passes from the organization performing initial software development to the organization performing software maintenance.

4.0 Application of this Plan

Describe the audience for this plan as illustrated below

This plan shall be provided to and followed by project/program software personnel maintaining software products as well as those responsible for the performance of software maintenance throughout the organization and those designated to perform software maintenance functions.

5.0 General Requirements

This section should describe the policies and responsibilities of the program/project team as it plans for software maintenance. Policies and responsibilities are usually spelled out in an organization policy/directives manual and may be referenced here. It is highly recommended, however, that such doctrine be summarized in the plan as illustrated below.

5.1 Introduction: This section describes the system to be supported and identifies the initial status of the system. Complete identification of the system should include formal and common names, nomenclature, identification number and system abbreviations. Subsystems and interfacing systems should be identified.

This plan describes the processes and procedures necessary to provide software maintenance for the XYZ system. System XYZ, Version 1.0 is being developed by the Software Development of Company ABC and the Software Maintenance Department of Company ABC will perform all software maintenance functions. NOTE: If the developer will perform maintenance, the following would be used. The Software Development Department of Company ABC is developing SYSTEM XYZ Version 1.0. Software maintenance will also be performed by the Software Development Department. NOTE: If maintenance were outsourced to another company, the following would be used. System XYZ, Version 1.0 is being developed by Company ABC and will transition to Company DEF for software maintenance support. System XYZ contains subsystems COLLECTION, PROCESSING, and REPORTING. System XYZ interfaces with systems QRS and STU. This plan details the activities required and specifies the various responsibilities in order to provide software maintenance for System XYZ.

5.1.1. System. Describe the mission of the system to include mission need and employment. Identify interoperability requirements. Describe system functions. Describe the system to include descriptions of: system architecture, components and interfaces; hardware and software. Use separate subparagraphs to describe each subsystem and major hardware/software component.

System XYZ provides payroll processing for a small business. It provides input to a third party payroll company called ADP Inc. The data provided must be in a format compatible with ADP