

Preview

<Organization>

Peer Review Process Description

Version 1.0 draft1

<date>

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eLearning versions of several popular Process Impact training seminars are available at www.processimpact.com/elearning.shtml, including "Software Inspections and Peer Reviews". Single-user and corporate-wide site licenses are both available.

1. Overview

In a peer review, co-workers of a person who created a software work product examine that product to identify defects and correct shortcomings. A peer review:

- Verifies whether the work product correctly satisfies the specifications found in any predecessor work product, such as requirements or design documents
- Identifies any deviation from standards, including issues that may affect maintainability of the software
- Suggests improvement opportunities to the author
- Promotes the exchange of techniques and education of the participants.

All interim and final development work products are candidates for review, including:

- Requirements specifications
- User interface specifications and designs
- Architecture, high-level design, and detailed designs and models
- Source code
- Test plans, designs, cases, and procedures
- Software development plans, including project management plan, configuration management plan, and quality assurance plan

This document defines an overall peer review process. It includes procedures for conducting inspections and two types of informal peer review, a walkthrough and a passaround, as well as guidance for selecting the appropriate approach for each review.

2. Work Aids

The following peer review work aids are available from *<location>*:

- Inspection Summary Report
- Issue Log
- Typo List
- Inspection Moderator's Checklist
- Inspection Lessons Learned Questionnaire
- Review checklists for several types of software work products

3. Risk Assessment Guidance

To judge which software components (or portions of components) to review and what type of review method to use, consider the following risk criteria:

- Components that use new technology, techniques, or tools
- Key architectural components

- Complex logic or algorithms that are difficult to understand but must be accurate and optimized
- Mission-, security-, or safety-critical components with dangerous failure modes
- Components having many exception conditions or failure modes
- Exception handling code that cannot easily be tested
- Components that are intended to be reused
- Components that will serve as models or templates for other components
- Components that affect multiple portions of the product
- Complex user interfaces
- Components created by less experienced developers
- Code modules having high complexity
- Modules having a history of many defects or changes

Work products that fit in one or more of these categories are considered high risk. A product is considered low risk if an undetected error will not significantly affect the project's ability to meet its schedule, quality, cost, and feature objectives. Use inspections for high-risk work products, or the high-risk portions of large products, and for major work products that are about to be baselined. Less formal reviews are acceptable for other work products.

4. Participants

Table 1 suggests project roles who might review different work products. Not all of these perspectives need to be represented. In general, a work product should be reviewed by:

- The author of any predecessor document or specification
- Someone who must base their subsequent work on the work product
- Peers of the author
- Anyone responsible for a component to which the work product interfaces

Attendance by anyone with supervisory authority over the author is by invitation of the author only.

Table 1. Review Participants for Different Types of Work Products.

Work Product Type	Suggested Reviewers
Architecture or High-Level Design	architect, requirements analyst, designer, project manager, integration test engineer
Detail Design	designer, architect, programmer, integration test engineer
Process Documentation	process improvement group leader, process improvement working group members, management-level process owner, practitioner representatives who will use the process
Project Plans	project manager, program manager, business sponsor, marketing or sales representative, technical lead, quality assurance manager