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CONFIGURATION MANAGEMENT

Introduction

Configuration management is a method for administering an evolving, and often interrelated, set of products and project documentation. All of the products and documents that need administrative control are termed configuration items. The configuration item description record should contain the information needed to identify and track each configuration item throughout its development life cycle.

The application of effective procedures should ensure the accurate and up-to-date documentation and distribution of all relevant product components and project information. Configuration Management should be applied to projects of any significant size, and should be the day-to-day responsibility of a single individual.

The configuration management plan should be produced as part of the project initiation document for the project in question. Where products constitute sub-assemblies of more complex products, the approach used must be able to track all such relationships, enabling the accurate analysis of all associated information.

All of the products and documents that require the administrative controls of the configuration management method being used, are called configuration items. Initially the overall end-product can theoretically, be viewed as the only identifiable configuration item. However, an increasing number of configuration items will usually be identified as the end product is subdivided into the manageable elements represented in the work breakdown structure. A configuration item description record should be used to record the information needed to identify and track each configuration item through its development life cycle.

Configuration control is concerned with the procedures for the issue and submission of configuration items. These procedures should address both physical and electronically stored configuration items.

Configuration audits consist of cross checking the configuration item description records with the current version of the configuration item as held in its development folder.

In the first instance, a configuration item should be created and documented as the first version. The configuration item may then undergo a number of modifications as it is tested and errors corrected, or as changes are requested and these subsequent submissions should be reflected by an increasing version number.

The first baseline for a configuration item will be established when the specification of the item has been prepared, reviewed and agreed. Subsequent baselines will normally be established at points at which the Configuration item is ready to be used as a basis for further work in which a major transformation of it will take place.

A 'Release' consists of a specified set of products from one or more base-lined configuration items, which are issued as a set for a specific purpose. Releases should be authorized by the project or sub-project manager.

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The configuration management plan should be produced as part of the project initiation document, for approval by the project owner at project initiation. Where appropriate configuration management should continue throughout the life of the delivered end-product, and therefore the approach adopted should be transferable to the client organizations operational and maintenance sections at the end of the project.

If other projects within the organization are using a configuration management method then this should be seriously considered for the current project, particularly if the two projects share any areas of interest.

The following typifies recommended minimum scope required of a configuration management method. However, this should be adjusted to suit the needs of each particular project.

Synopsis & Purpose

This should provide a brief overview of the plan and highlight any differences in approach to existing site standards - with a justification thereof. It should also explain the aim of the activities defined in the plan. Any dependencies on configuration management plans from other projects should be identified.

References

This serves to identify all other standards to be used by the configuration management method.

Configuration Item Identification

This section should specify the naming and numbering conventions to be used for all types of configuration items.

Scope

This should outline the full range of tasks in the plan, in particular it should consider all areas that have links with associated projects or that may be bringing in prefabricated components. Any special operating requirements should also be considered. It should also define which items are to be managed under the plan and which are outside the plans control.

Definitions and Abbreviations

This is a short glossary that should be produced to support the plan, if necessary.

Responsibilities

The clearest representation is a responsibility matrix, showing which role should carry out each activity in the plan. The role of administrator will feature often.

Filing

This section defines in detail the filing structure to be used for each category of configuration item. This should cover hardware, software, documentation, human and machine readable items.

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Document Issue Procedures

This should define the procedures to be used for issuing and distributing copies of all managed documents.

Security

This should define the access security measures for the master copies of all configuration items.

Issue and Submission Procedures

Issue and submission procedures are concerned with the submission of and access to the identified configuration items. These procedures will relate to administrative items as well as those pertaining to the evolving products. Without careful control over the issue and submission of configuration items the configuration management process can collapse.

Due to the increasing use of computer networks to support project work, control can be significantly more difficult than for products and hardcopy documents. The use of password protected files and directories should help, but the recall of obsolete versions can cause problems.

Only when the author of a new or revised product or document is satisfied that it is complete or ready for review should it be re-submitted to the administrator. The submission procedure should not be used to introduce new configuration items.

In relation to quality reviews, the administrator should be responsible for issuing a copy to each reviewer, in line with the issue procedures, and filing the original in the relevant development folder.

The administrator should never issue the master copies of baselined configuration items. It is important that current official copies are readily identifiable, to avoid any obsolete documentation being used as the basis of future work.

The administrator should maintain an issue log for each configuration item, which records: the identity and version of documents issued, the name of the recipient, the authority for and purpose of the issue and the date of issue.

When a document is the subject of an approved change request, the administrator should issue a copy to the appropriate person to carry out the work and notify all other copy holders of the impending change. On completion it should be passed back to the administrator, who should only then make it available for further changes. Ideally when a new version of a configuration item is issued, earlier and now obsolete, copies should be recalled and destroyed.

Configuration Audits

Configuration audits consists of cross checking the configuration item description records with the current version of the configuration item as held in its development folder. These audits are normally carried out ahead of each project review, although they can be requested at any time by the project manager or the project owner.

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Configuration audits should establish that: the current physical representation of each configuration item matches its current specification, that there is consistency in design between each configuration item and its parent, if there is a parent. Finally it also establishes that the documentation is up to date and all relevant standards are being adhered to.

The administrator should be responsible for producing all scheduled and ad hoc reports on the status of the configuration items at any given point in time. Typical reports that may be required include numbers of change requests and project exception reports opened during a specific period, closed during a specific period, those currently open and unresolved document update requests.

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