Configuration Management Plan

<Project Name>

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# Preface

## Purpose of this Document

Indicate in this section the name of the project that this Configuration Management Plan (CMP) is used for.

## Use of this Document

1. This Preface is addressed to the users of this generic document and is not meant to be retained in any project‑specific Configuration Management Plan documents based on it.
2. The remaining sections (numbered 1, 2, 3,…) constitute a template that should be used to construct the project-specific Configuration Management Plan document.

* Text in normal case is in the most part “boilerplate” that can be retained, amended or deleted in the document.
* Text in *italics* provides instructions on how to complete a section and should be removed once the section is written.

1. The template should be used pragmatically, that is - where a section is not relevant it should be omitted. Conversely, the material contained in this document is not necessarily exhaustive; if there is a subject that is relevant to the IDA Project, but is not included in this document, it should still be included.
2. This document has been prepared using MS Word 97. The following variables are currently recorded as File “Properties” under MS Word. They may be modified by that means or overwritten directly at each occurrence in the document, at the discretion of the user.

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| --- | --- | --- | --- | --- |
| a. “Summary” Properties | | |  |  |
|  | Title | Type of document (i.e. Configuration Management Plan) | | |
|  | Author | Author(s) of document | | |
|  | Keywords | Document reference (i.e. IDA-MS-CMP) | | |
| b. “Custom” Properties | | |  |  |
|  | Proj Id | Short mnemonic of IDA Project (set, in this document, to “**Project Id**”) | | |
|  | Project | Full name of IDA Project (set, in this document, to “**Template for IDA Project**”) | | |
|  | Contr Id | Short identifier of contract (set, in this document, to “**Contract Id**”) | | |
|  | Contract | Full name of contract (set, in this document, to “**Template for specific development**”) | | |
|  | Subject | Issue number (currently Issue 1) | | |
|  | Manager | Date of document (currently 17 January 2001) | | |

Table : File properties

## Purpose of Configuration Management

1. The remaining parts of this section provide an overview of the configuration management principles, which would need to be considered when constructing the Configuration Management Plan (CMP).
2. Configuration Management is part of the quality control of a project. Without it, managers have little or no control over the products being produced: for example, what their status is, where they are in the production life cycle, whether they can be changed, what the latest version is.

## Major Tasks and Activities

1. Configuration Management covers the following functions:

* Identifying the individual items of the final product
* Identifying those items that will be required in order to produce other items
* Establishing a coding system which will uniquely identify each item and final product
* Identifying the ‘owner’ of an item and final product version
* Identifying the creator of the item and also the reviser of the item
* Recording, monitoring and reporting on the current status of each item as it progresses through its own specific life cycle.

1. An item cannot be put under configuration management before it has been internally approved. Once approved, the status changes, the item is ‘baselined’ and the content is ‘frozen’. It can now be used as a firm basis for the development of any later product.
2. Identification of the configuration items is the first activity of configuration management. It consists in giving a unique identification to each item (including documentation), that allows for distinguishing the different versions.
3. The control of the contents of items is the second activity of configuration management. It includes configuration control and version control.
4. Lastly, the first two configuration management activities (identification, configuration and version control) would have no real point without systematic production and maintenance of documents that constitute the history of the configuration. This is the aim of the follow-up of the configuration status.

## Configuration Control Activity

1. Identification allows for giving (during all the development, and after delivery), the exact list of the items that make up the configuration of a product at a specific time.
2. Use naming rules to describe the way configuration items are to be identified (i.e. describe the format used for assigning unique identifiers to each item). Also specify how different versions of each item are uniquely defined. This can include naming conventions and version numbers and letters. Special identification schemes and labelling may be required in some case for subcontracted software, vendor proprietary software, support software, etc.
3. Identify the location of the list of configuration items (that are going to be managed under configuration control) and how the list is to be maintained and controlled. This list must include not only the components that are developed during the project but also documentation, associated software and hardware.
4. Identify at which stage the items are to be taken into account by the configuration management system. Depending on the item, it can be at the beginning of the project, for example for the Project Management Plan, or during the integration phase for modules.

## Version Control

1. This activity involves:

* procedures for manipulating the items that constitute the configuration
* procedures that allow the software configuration to evolve.

1. Indicate the method used for controlling the configuration, explaining:

* at what point in the process an item is put under configuration control
* how items can be modified once they are under configuration control
* what configuration records are kept of the items
* what are the responsibilities of users and configuration librarian
* the link with the version control procedure
* the link with the change control procedure.

1. Describe the means of restricting access to configuration items by using access protection in order to prevent inopportune changes (special care needs to be given to common modules and libraries). An example of partition into work areas can be:

* a work area per developer, in which each developer creates and tests the modules he is responsible for
* an integration area, under the control of the Project Manager or the team leader, in which modules are put to disposal, tested and validated (no new module can be put in the integration area without re-testing being performed)
* a delivery area in which all modules constituting the deliverable are kept.

## Configuration Status Auditing

1. Describe the procedure for version control. As its name indicates, this concerns the control of the versions of a component or a product. It deals with the grouping of elementary items that are under configuration control, in order to produce a coherent component or product. Thus this activity is based on controlled (and if possible automated) generation of version number for items. For example:

* in the case of code, tools may be used allowing for the version control of each component, or for a generation (as automatic as possible) using command files (automatic recompiling, use of module version numbers, etc.)
* in the case of documentation, it may include the method used for assuring that obsolete versions of documents are withdrawn and only up-to-date versions are used.

1. Confirm usage of the standard IDA document version numbering scheme as defined below. The version number has the following lay-out:

* <Edition Number>.<Revision Number>-<Language>
* TheEdition Number is one digit (version 0 is the initial draft version).
* The Revision Number is composed of two digits to be defined by the partner elaborating the document.
* The Language is denoted by the standard ISO two alphabetic character abbreviation (EN for English, FR for French, DE for German).

## Confirm Adherence to Advice o Use of Revision Marks

1. This activity aims at generating documents that give the exact configuration of the product, during the development and after delivery, and trace the history of the changes following corrections or upgrades. Comparisons are made between the records and the current physical representation of the configured items to ensure that they match, as part of the quality assurance process.
2. The documents that allow for tracing the configuration during development and maintenance are listed. They are:

* a periodically updated document that gives the complete list of the configuration with version numbers and related changes
* a status accounting report that includes a summary or periodically updated document giving the list of all changes, stating the status of each of them and giving the date of the change request, the date of the actual change and the name of the item with its old and new version number.

1. The job title of the authority responsible for this activity would also need to be identified.
2. If an automated system is used for any of the above activities, describe its usage.
3. This paragraph describes a sample document revision history table. A document history page can be defined tracing the history of the document including validation tasks and related document status’s and updates following corrections. This document history page accompanies the document. The revision history table contains:
4. the edition number
5. the revision number
6. the issue date
7. a description of the status of the document, being

* an indication of a change to the document
* one of the statuses: draft, final or accepted (A “draft” document is one currently being worked on; it becomes “final” when it is released to the client for acceptance and ultimately achieves “accepted” status when the client formally accepts it.)
* an indication Insert/Replace
* the pages to which the Insert/Replace action applies.

## Related Documents

1. When updating a document the use of revision marks is strongly recommended. The standards recommended are:

* using underlines for inserted text
* using strike-through for deleted text
* using revision lines outside borders to help finding the text parts that are modified.

1. Once a major revision of the document is started it may be useful to omit revision marks; in that case it is well possible that the biggest part of the document would be marked with outside borders, which would neutralise the advantage that is pursued. In such cases, it may be relevant to drop the long revision line and the change identified in the document history page with a comment similar to “section x.x totally revised”.

# Introduction

1. Indicate in this section the name of the project that this Configuration Management Plan (CMP) is used for.

## Purpose

1. This section should briefly:

* define the purpose of the CMP with particular relevance to the nature of the project
* specify the intended readership of the CMP.

## Scope

1. This section should identify the:

* configuration items to be managed;
* configuration management activities that will be undertaken;
* organisations this plan applies to;
* phase of the life cycle the plan applies to.

## Glossary

1. This section should define all terms, acronyms, and abbreviations used in the plan, or refer to other documents where the definitions can be found

## References

1. This section should provide a complete list of all the applicable and reference documents, identified by title, author and date. Each document should be marked as applicable or reference. If appropriate, report number, journal name and publishing organisation should be included.

# Configuration Management

1. This section should describe the organisation of configuration management, and the associated responsibilities. It should define the roles to be carried out

## Organisation

1. This section should:

* identify the organisational roles that influence the software configuration management function (e.g. project managers, configuration librarian, programmers, quality assurance personnel and review boards);
* describe the relationships between the organisational roles;
* describe the interface with the user organisation.

1. Relationships between the organisational roles may be shown by means of an organigram. This section may reference the Project Management Plan (PMP).

## Configuration Management Responsibilities

1. This section should identify the:

* software configuration management functions that each organisational role is responsible for (e.g. identification, storage, change control, status accounting), in the review, audit and approval processes;

## Interface Management

1. This section should define the procedures for the configuration management of external hardware and software interfaces. In particular it should identify the:

* external organisations responsible for the systems or subsystems with which the software interfaces;
* points of contact in the external organisations for jointly managing the interface;
* groups responsible for the configuration management of each interface.

## CMP Implementation

1. This section should establish the key events in the implementation of the CMP, for example the:

* readiness of the configuration management system for use;
* establishment of the Software Review Board (SRB);
* establishment of baselines;
* release of products.

1. The scheduling of the software configuration management resources should also be shown (e.g. availability of software librarian, software configuration management tools and SRB). This section may cross-reference the PMP.

## Applicable Policies, Directives and Procedures

1. This section should:

* identify all applicable software configuration management policies, directives or procedures to be implemented as part of this plan (corporate software configuration management documents may be referenced here, with notes describing the parts of the documents that apply);
* describe any software configuration management polices, directives or procedures specific to this project, for example:
  1. project-specific interpretations of corporate software configuration management documents;
  2. level of authority required for each level of control;
  3. level of review, testing or assurance required for promotion.

# Configuration Identification

1. This section should describe the conventions for identifying the items (e.g. software, hardware, documentation etc.) and then define the baselines used to control their evolution.

## Conventions

1. This section should:

* define project naming conventions;
* define or reference labelling conventions.

## Baselines

1. For each baseline, this section should give the:

* identifier of the baseline;
* contents, i.e. the:

1. software itself (e.g. requirement and design documents, modules, executables, verification plans);
2. tools for making derived items in the baseline (e.g. compiler, linker and build procedures);
3. test software (e.g. data, harnesses and stubs);

* review and approval events, and the acceptance criteria, associated with establishing each baseline;
* participation required of developers and users in establishing baselines.

1. If appropriate, the description of each baseline should:

* distinguish software being developed from software being reused or purchased;
* define the hardware environment needed for each configuration;

# Configuration Control

1. These sections should detail the control processes by which configured items are to be stored, retrieved and reused.

## Code (and document) Control

1. This section should describe the library handling procedures (for software and documents).
2. Separate types of source code library may be set up, e.g.:

development (or dynamic);

master (or controlled);

archive (or static).

/1 Ideally the same set of procedures should be used for each type of library.

## Media Control

1. This section should describe the procedure for handling the hardware on which the software resides, such as:

* magnetic disk;
* magnetic tape;
* CD-ROM/Read-Write.

1. Whatever media is used, the procedure described should include the controls for:

* labelling media
* storing the media (e.g. fire-proof safes, redundant off-site locations);
* recycling the media (e.g. always use new magnetic tapes when archiving).

## Change Control

1. This section should define the procedures for processing changes to baselines described in Section 3.2 of this CMP.

### Levels of Authority

1. This section should define the level of authority required to authorise changes to a baseline (e.g. software librarian, project manager).

### Change Procedures

1. If the procedure for processing change proposals to software (including software development and support tools) is already written in the Change Control procedure then make a reference here to the specific section of that document.
2. Identify and give details of only those parts of the procedure that are different and specific to this particular project.

# Configuration Status Accounting

1. This section should:

* define how configuration item status information is to be collected, stored, processed and reported;
* identify the periodic reports to be provided about the status of the configured items, and their distribution;
* state what dynamic inquiry capabilities, if any, are to be provided;
* describe how to implement any special status accounting requirements specified by users.

1. In summary, this section defines how the project will keep an audit trail of changes.

# Tools, Techniques and Methods for CM

1. This section should describe the tools, techniques and methods to support:

* configuration identification (e.g. controlled allocation of identifiers);
* configuration item storage (e.g. source code control systems);
* configuration change control (e.g. online problem reporting systems);
* configuration status accounting (e.g. tools to generate accounts).

# Appendix