

MERCHANTDICE
CONFIGURATION MANAGEMENT PLAN

Version 1.1
22/10/2022

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Lee Wen Bin Andre	20/10/2022	Ling Yin	20/10/2022	Initial Configuration Management Plan draft
1.1	Lee Wen Bin Andre	22/10/2022	Ling Yin	22/10/2022	Added Identification, Organization, Configuration Identification, Configuration Control, Configuration Support Activities

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1 Identification

1.1 Document overview

This document contains the software configuration management plan of MerchantDice.

1.2 Abbreviations and Glossary

1.2.1 Abbreviations

- SCM: Software Configuration Manager
- SCI: Software Configuration Items
- CM: Configuration Management
- VDD: Version Delivery Description
- CSA: Configuration Status Accounting

1.2.2 Glossary

- Configuration freeze: A period of time in which all configuration related activities are paused to prevent any issues
- Baseline: A defined starting point of the project
- Branch: A copy of a codeline, managed in a version control system

1.3 References

1.3.1 Project References

#	Document Identifier	Document Title
R1	Project Proposal	The environmental price of fast fashion

1.3.2 Standard and regulatory References

#	Document Identifier	Document Title
STD	730-2002	IEEE Standard for Software Quality Assurance Plans
ISO/IEC	90003:2004	Software Standard

1.4 Conventions

Typographical convention:

Font Type: Times New Roman

Font Size: 14 for Headings, 12 for Body

2 Organization

The software configuration is managed by members of the project, with specific tools. Responsibilities are shared between

- The software configuration manager (SCM), Yang Yang
- The project manager, Ling Yin
- The technical manager, Andre Lee

2.1 Activities and responsibilities

Describe here the functions required to manage the configuration of the software and responsibilities.

Activities when setting up the project	Person responsible
Identify the configuration items	SCM
Install the bug repository tool and set up the database	SCM
Install the software configuration repository tool and set up the database	SCM
Manage and structure the reference space	SCM
Define the configuration processes	SCM

Activities during the project lifecycle	Person responsible
Export components for modification, test or delivery	SCM
Set under control validated components	SCM
Create version, write version delivery document	SCM
Approve reference configurations	Project manager
Verify version to be delivered and authorize deliveries	Project manager
Backup spaces	SCM
Do configuration audits	Quality Manager
Inspect configuration records	Quality Manager
Archive reference version	SCM

Management activities	Person responsible
Manage versions and archives	SCM
Manage configuration records	SCM
Produce reports and statistics	SCM
Manage reference space and its access control list	SCM
Manage spaces backup and archive media	SCM
Manage quality reports	Quality Manager

2.1.1 Decisions process and responsibilities

Responsibilities during reviews, audits and approvals are listed below:

At the end of an activity of the project

Activities	Person Responsible
Do a configuration freeze	SCM
Present a configuration state of the components impacted by the activity	SCM

Activities	Person Responsible
Present a documentation state of the components impacted by the activity	SCM

During a configuration management process audit:

Activities	Person Responsible
Do the configuration management process audit	Project Manager
Present the records of the configuration management process	SCM
Present the quality records of the configuration management process	Quality Manager
Present the records of the documentation management process	SCM

3 Configuration identification

3.1 Identification rules

3.1.1 Identification rules of configuration items

3.1.1.1 Identification of a configuration item

The identification of configuration item is as follows:

- XXX_Vm.n
- where: "Vm.n" is the version of the configuration item.

3.1.1.2 Version number of a configuration item

The attribution of a version number is a prerequisite to any delivery of any configuration item. This number shall be incremented before a new delivery, if the product or its documentation were modified.

The definition rules of a version number are the following:

- The version number is dependent on the type of changes, which is categorized under three main categories: Major, Minor and Bug Fixes.
- Major changes include significant changes to the application overall that leads to a drastic change in business logic, such as reworking the user interface or adding new API calls.
- Minor changes include additional features added to improve the application overall, but have no significant changes to the business logic. Examples include correcting grammatical errors, or improving system performance.
- Bug Fixes include hotfixes to rectify bugs that cause the application to be unusable, or some dependency conflicts.

3.1.2 Identification rules of documents

3.1.2.1 Description of documents identifiers

The identification of documents is described below:

XXX_<document type>_<document number>_<revision index>

where:

- "document type" is the type of document (E.g. Project Proposal, Quality Plan etc.)
- "document number" is a incremental number, with a separate list for each document type,
- "revision index" designates the approved iteration of the document. The revision index is V1 for the first iteration, V2 for the second and so on.

3.1.2.2 Definition and evolution of the revision index

The attribution of a revision index is a prerequisite to any delivery of a document or file. This index shall be incremented before the diffusion of a modified document.

The definition rules of a revision index are the following:

- Each new revision must improve only a single feature, and not more.
- There must not be any merge conflicts with the main branch for each new revision index.

3.2 Reference configuration identification

Each reference configuration is defined by:

- An identifier,
- Its content listed in the corresponding Version Delivery Description document,
- The acceptance or validation reviews associated with the building of the reference configuration.

A reference configuration is established for each design review and each test review of the project.

3.3 Configuration Baseline Management

Describe what baselines are to be established. Explain when and how they will be defined and controlled.

Examples of baselines :

- functional baseline (FBL), which describes the system functional characteristics;
- allocated baseline (ABL), which describes the design of the functional and interface characteristics,
- product baseline (PBL), which consists of completed and accepted system components and documentation that identifies these products.

4 Configuration control

4.1 Change Management

The process for controlling changes to the baselines and for tracking the implementation of those changes are as follows:

Problem resolution:

- Changes requests are emitted from by the project manager according to the problem resolution process,
- When a change request is accepted by the project manager/product manager, a branch is created in the GitHub repository.
- The branch identification is the title of the change where each word is separated by an underscore, prefixed by the problem.
- Branch content is the line of development that contains the applied changes.

Multiple configuration:

- Changes requests of configuration files are emitted by the product manager according to the production procedure
- When a change request is accepted by the project manager/product manager, a branch is created in the GitHub repository.
- The branch identification is the title of the change where each word is separated by an underscore, prefixed by the configuration.
- Branch content is the line of development that contains the applied changes.

5 Configuration support activities

5.1 Configuration Status Accounting

Configuration Status Accounting (CSA) is the process to record, store, maintain and report the status of configuration items during the software lifecycle. All software and related documentation should be tracked throughout the software life.

5.1.1 Evolutions traceability

The traceability of modifications of items given their types:

- Document: The modification sheet number identifies the origin of the modification. The modified paragraphs in the document are identified, if possible, by revision marks.
- Source file: The software configuration management tool records, for each source file or group of source files, a comment where the modification is described.
- Configuration item: The Version Delivery Description of the article identifies the modification sheet included in the current version.

The modification sheet describes the modifications done to the components with enough precision to identify the modified parts.

5.1.2 Setting up Configuration status

The SCM sets up the state of all versions and of each configuration article with:

- The label,
- The version number,
- The creation date of the VDD,

The SCM writes the VDD.

5.1.3 Configuration status diffusion

The SCM and the quality manager write the VDD.

5.1.4 Configuration status records storage

The records are stored in a configuration folder, which contains:

- The requests sorted by record number,
- The software documents,
- The VDD's,
- The configuration states sorted chronologically.

5.2 Configuration audits

The following audits may be carried out to assess the compliance with the CM Plan.

- Baseline audit
- Functional configuration audit
- Software configuration audit

5.3 Reviews

The technical reviews during the project are needed in order to establish baselines. SCM plays a key role in these reviews as it provides a means for the team to maintain consistency and control over what is delivered.

- After establishment of the baseline, changes to the SCI can only be made under a formal change control procedure.
- Configuration reviews will be carried out periodically to verify the correctness of the configuration status.
- The purpose of the configuration review is to ensure that all changes are recorded accurately.

5.4 Configuration management plan maintenance

The SCM will be responsible for the execution and adherence to the CM plan. The SCM will lead the Quality Assurance Team to carry out maintenance every 2 weeks and update the CM plan accordingly.