

Software Configuration Management Plan of HelpMe mobile application		
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1 Identification

This document amplifies the “§4 Configuration management” of the Project Management Plan. If you instantiate this document, leave empty the §4 in the Project Management Plan and add a reference to this doc.

1.1 Document overview

This document contains the software configuration management plan of software HelpMe. The document aims to address any change, control the change, make sure the plan is implemented correctly and to make sure that we report the change to others.

1.2 Abbreviations and Glossary

1.2.1 Abbreviations

SCM	Software Configuration Management
VDD	Version Description Document
CM	Configuration Management
SRS	Software Requirements Specification
PCA	Physical Configuration Audit

1.2.2 Glossary

Version Description Document (VDD): the primary configuration control document used to track and control versions of software being released to testing, to implementation, or to the final operational environment

1.3 References

1.3.1 Project References

#	Document Identifier	Document Title
R1	Proposal	HelpMe Proposal
R2	UC	HelpMe Use Cases
R3	SRS	HelpMe System Requirements Specification
R4	QP	HelpMe Quality Plan
R5	PP	HelpMe Project Plan
R6	RMP	HelpMe Risk Management Plan
R7	SMR	HelpMe Design Report on Software Maintainability
R8	CMP	HelpMe Change Management Plan
R9	TP	HelpMe Test Plan
R10	RP	HelpMe Release Plan

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1.3.2 Standard and regulatory References

1.3.2.1 This software does not store sensitive user data, hence does not need to comply with and Standards or regulations as of the prototype.

#	Document Identifier	Document Title
[STD1]	-	-

2 Organisation

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

- The quality manager : Siti Nur Umm'aira Phang
- The project manager : Quek Xuan Hao
- The lead developer: Antoine Tran

2.1 Activities and responsibilities

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

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

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

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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	Project Manager
Present a configuration state of the components impacted by the activity	Quality Manager
Present a documentation state of the components impacted by the activity	Lead Developer

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	Lead Developer
Present the quality records of the configuration management process	Quality Manager
Present the records of the documentation management process	Lead Developer

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 a configuration item is:

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:

- Minor revisions where spelling or grammatical mistakes are corrected, or changes that do not require further approval are indicated by an increment to the decimal place. For example, "V1.1, V1.2, V1.3".
- Major revisions where the document has had significant changes or review and requires re-approval are indicated by making increments to the whole number. For example, "V1.0, V2.0, V3.0".

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3.1.2 Identification rules of documents

3.1.2.1 Description of document identifiers

The identification of documents is described below:

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

where:

" document type " is:

- pdf for PDF documents,
- xml for EXCEL documents

" 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:

- Minor revisions where spelling or grammatical mistakes are corrected, or changes that do not require further approval are indicated by an increment to the decimal place. For example, "V1.1, V1.2, V1.3".
- Major revisions where the document has had significant changes or review and requires re-approval are indicated by making increments to the whole number. For example, "V1.0, V2.0, V3.0".

3.1.3 Identification rules of a media

A media is, for example, a tape or a CD ROM.

3.1.3.1 Internal identification

The identification of a media is described below:

<configuration item identification>/<media>/<volume>

where:

"media" is the media number,

"volume" is an incremental number to distinguish the media if the delivery contains more than one media.

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

- Software Requirements Specification (SRS), which describes the software system to be developed.
- Use case model, describes the different use cases the software will handle.
- Functional baseline (FBL), which describes the system functional characteristics;

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- Allocated baseline (ABL), which describes the design of the functional and interface characteristics,

The baselines to be established are the following:

- Functional baseline (FBL) & (SRS)
 - It will be established when the intended functions are agreed upon by both the client and the project team, Think2.
 - It will be controlled using the System Requirements Specification (SRS) document which outlines the functional requirements of the mobile application.
- Allocated baseline (ABL)
 - It will be established when the design of the software architecture is approved by the project manager.
 - It will be controlled by the Use Cases document, which illustrates the functions of the mobile application in a diagram.
- Product baseline (PBL)
 - It will be established when the functions of the mobile application are implemented according to the SRS, and the quality of the product adheres to the quality plan. The project manager and the quality manager will also have to approve the state of the mobile application.
 - It will be controlled by the GitHub repository which tracks the changes made to the source code.

4 Configuration control

To manage the configuration changes, the project manager will first ensure the changes are relevant to the current project. The relevancy of changes will depend on the timeline, requirements and/or budget. Once approved, the changes are written in a correctly formatted changelog, then implemented. The changelog will be numbered, dated and kept for future reference. On GitHub, code merge is managed by configuration management following the above procedure. Similarly on the Wiki page, documents that must be updated are also managed by the configuration management.

4.1 Change Management

- Change requests are emitted by the project manager according to the problem resolution process,
- When a change request is accepted by the project manager, a branch is created in the SCM.
- The branch identification is Change_<date of change>, where the date will be in DDMMYY format.
- Branch content is
 - The changes made
 - The reasons for the changes
- Change 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, a branch is created in the GitHub repository..
- The branch identification is <file name>_m, where “m” is the version number of the file.
- Branch content is
 - The changes made
 - The reasons for the changes

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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.

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 (VDD) 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 Quality Manager 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 Quality Manager writes the VDD.

5.1.3 Configuration status diffusion

The Project Manager 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

- Baseline audit - The project manager ensures changes made still fulfil the baseline requirements initially set by the team. This audit can be done on a weekly basis, since changes are made more frequently in the source code.
- Functional configuration audit - The software engineering team leads the audit of the software configuration to ensure that requirements have been properly implemented, tested, and satisfied. Each requirement in the software specifications should be traced to the test results for that requirement. All authorised change proposals and software problem reports should be evaluated to ensure that they have been resolved.

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- Physical configuration audit - The physical configuration audit (PCA) is a configuration management examination of the as-built (implemented) software product configuration against its technical documentation. The PCA includes a detailed examination of the engineering drawings, design documentation, and specifications to ensure that the documentation set is ready to support the post-development processes.

5.3 Reviews

Technical reviews help to check if the baselines have been established. After the baselines are established, changes can only be made following a formal change control procedure. Configuration reviews will be carried out periodically to check that changes made are documented properly and do not cause unexpected problems with functionality. Major changes made must be reflected in a branch in the SCM.

In these reviews, configuration managers control the changes made and ensure that all are documented and can be traceable. This helps to reduce product development costs, minimise problems for product users, and help reduce technical support calls or needs.

5.4 Configuration management plan maintenance

The QA team will monitor changes and meet every two weeks to review that the changes were made according to the SCM plan. The changes will then be approved by the Project Manager and communicated to the team.