Configuration Management Plan

by
care'less

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1. Introduction

Care'less Game Project is a FPS game with an appropriate and enjoyable scenario. It is a challenging project while it provides good potentials for the developers of the game and also users. The game will be multi-player online game with 3D graphics. It is designed to support online players to interact each other and play together in a virtual environment. Each player controls a single character as in the other FPS games. The medium is Internet and LAN may also be used as the medium.

1.1 Purpose

This document is the Configuration Management Plan for the computer first person shooter game project of the group named as car'leless. It includes identification and description of configuration management process for the project. It describes straightforward terms the processes required to ensure that the inevitable software requirements and/or design changes occur within an identifiable and controlled environment.

Defining certain procedures to follow, these kinds of problems helps the software protection against change or update related risks. Therefore, it is a very important task in software development process to prepare a configuration management plan and follow it throughout the development of the project.

1.2 Scope

The scope of this document is the identification of a top-level configuration management plan for the Care'less Game Project. It defines a methodology which the members are responsible of behaving accordingly and determines the general standards of the project. The procedure will be followed when a need for modification occurs is provided in this document.

The intended audience for this document is the members of the company, named as Care'less, in addition to the other parties that participate in the development process as observers.
1.3 Definitions, Acronyms and Abbreviations

- VCT  Version control team
- RCT  Release control team
- TT   Testing team
- CCT  Change control team
- CM   Configuration management
- SCM  Software configuration management
- SCMP Software configuration management plan
- CT   Configuration teams
- CMT  Configuration management tools
- CI   Configuration item
- SDT  Software development team

1.4 References

- Software Requirements Specification(SRS), by Care'less, Fall 2009
- Detailed Design Report, by Care'less, Fall 2009
- Configuration Management Plan guide, METU Computer Engineering

1.5 Overview

The main parts of the document are:

1) **Introduction:** This section introduces the function and content of the CMP. Meanings of the abbreviations and the references used are also mentioned.

2) **The Organizations of CM Framework:** This section describes the organization of the team, the responsibilities of team members and tools used during the project development.

3) **The CM Process:** This section
• explains how to identify the current state of CIs
• describes the methodologies followed for CM
• defines the status updates to be provided and audit plans

4) Project Schedule – CM Milestones: Time plans are given in this section.
5) Project Resources: The resources needed during CMP are explained in this section.
6) Plan Optimization: This section covers the methods to be followed for optimizing CMP

2. Configuration Management Framework Organization

Configuration Management Framework Organization section describes the organizational structure of Care'less – Game Project. Organization, responsibilities, tools and infrastructure are explained below.

2.1 Identification

The organizational units that handles the Software Configuration Management(SCM) activities as follows:

• Software Development Team (SDT)
  
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  İrfan Durmaz
  Erkan Acun

• Testing Team (TT)
  
  Gürkan Solmaz
  İrfan Durmaz
  Erkan Acun
• Change Control Team (CCT)

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• Version Control Team (VCT)

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• Release Control Team (RCT)

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2.2 Responsibilities of the Team Members

All members of Care'less are responsible for obeying some general rules as follows:

• Following the updated CM schedule and obeying deadlines

• Informing other team members about his progress, well-communication.

• Obeying team conventions about code writing and commenting.

• Following the developments and new technologies of game industry.

In addition to these common rules, members are responsible for obeying the rules of the team in which he participates.
• **Software Development Team (SDT)**
  
  Implementing the modules  
  Creating releases  
  Fixing bugs  

• **Testing Team (TT)**
  
  Creating test cases  
  Finding bugs  

• **Change Control Team (CCT)**
  
  Accepting or rejecting change requests according to time and effort costs  

• **Version Control Team (VCT)**
  
  Monitoring versions of the game  
  Merging different branches of the project  

• **Release Control Team (RCT)**
  
  Monitoring the progress of releases.  
  Updating the CM schedule according to performed activities  

### 2.3 Tools and Infrastructure

• **Svn:** It is used for version management of the project. Svn gives the opportunity that each member of Care'less to reach the most current version and all the version history of the project.  

• **Geany and Kate IDEs:** They are the development environments for the project.
• **Trac**: It is used for defect tracking.

• **GNU Make**

### 3. Configuration Management Process

Configuration Management Process section describes the components of the Game Project CM process. These components are presented using the conventional CM framework; identification, management and control, configuration status accounting, and auditing.

Configuration management involves identifying the configuration of a system at given points in time, systematically controlling changes to the configuration, and maintaining the integrity and traceability of the configuration throughout the lifecycle. The items placed under configuration management include the software that comprises the system as well as items required to create or maintain these.

Proper configuration management enables an organization to answer questions about the process for making changes to the system, who made a change to the system, what changes were made, when were the changes made, why were the changes made and who authorized the changes.

#### 3.1 Configuration Identification

The configuration items are four different groups to provide an efficient management of the project.

#### 3.1.1 Modules

• Collision Detection Module: handles collision detection for the characters and objects, also for shooting
• Network Module: organization of server-client processes

• GUI: Graphical User Interfaces for the game, including the consoles (i.e. health bar) in the game

• Sound Module: soundtracks of the game and special sound effects.

• I/O Handler Module: handles the input output for the users of the game

• Game Data Module: includes game media, such as maps, models and sounds

• Resource Manager Module: handles loading game media

• Game Initializer Module: interacts with GUI, resource manager, network, system tool and local game state

• Character Controller: an interface that interacts with game state, physics engine and network

• Game State Module: works like a loop, includes all necessary state information for every client

3.1.2 Media

• 3D Models
• Maps
• Sounds
• Textures
• Images
3.1.3 Baselines

- Project Proposal
- Software Requirements Specification
- Software Design
- Configuration Management Plan
- Implementation and integration
- Documentation
- Testing
- Presentation and Demonstration

3.1.4 Documents

- Installation manual
- User Manual
- Developer API

3.2 Configuration Management and Control

Configuration Management and Control involves identifying tools and procedures for various steps of software development process. There are five steps, that are development, engineering, build and deployment, change requests and defect tracking.
3.2.1 Development

In order to maintain the development management and control, Care'less employs:

- C++ Coding Standard to facilitate a standard which avoids miscommunication and forms a more extensible product.
- Doxygen to generate documentation
- Naming conventions for module, class and method names so that confusion is avoided and necessary modules can be located easily.
- kdesvn to facilitate the automation of version control and deployment system.

3.2.2 Engineering

Engineering process involves inspecting the suitability of the software for its intended use and identifying the deviations from specifications and standards. This process enables the team:

- to verify the consistency between the design and the implementation
- to propose a development plan to compensate for any incapability

3.2.3 Build and Deployment

Kate and Geany IDE's will be used with GNU Make files for deployment, together with kdesvn. Build operation will be on Linux operating system, using GNU Make files.

3.2.4 Change Requests

All change requests of the team members will be evaluated to improve the project over the implementation process. Change Control Team (CCT) is notified via e-mail or “Trac ticket” by the
team member who requests the change. This e-mail or “Trac ticket” includes a Change Request Form.

Upon receipt of a change request, CCT arranges a meeting to decide whether the change is necessary and feasible or not. If the change request is approved, the implementation task is distributed between the team members depending on their roles. Testing and auditing steps are performed, and then the new version is saved.

3.2.5 Defect Tracking

Testing Team (TT) members are responsible for testing and reporting the defects in the software. The team will maintain a history of defects in the mail group and facilitate the proper notification among Software Development Team (SDT) members. The defect includes:

- The name of the member reporting the defect
- The symptoms of the defect
- The revision numbers of modules on which the defect is observed
- The priority of the defect
- A recipe for the reproduction of the observation of the defect

3.3 Configuration Status Accounting

Configuration status accounting involves the recording and reporting of the change process. The goal of configuration status accounting is to maintain a status record of all items in the system baseline, thus providing traceability of all changes to the system.
The major activities of configuration status accounting are:

- Identifying the configuration status information to be recorded
- Reporting the status of configuration management
- Maintaining a record of configuration changes

### 3.4 Auditing

Auditing involves evaluating the project in order to maintain the validity and reliability of the system and taking actions according to evaluation results. It will be performed after the last release of the game.

There are three types of auditing as follows.

- **Process Audits:** will be performed to compare and contrast the manner in which the end product is produced to the written procedures.
- **Physical Audits:** will be performed to assure that the software contains all of the required components, documents and data.
- **Functional Audits:** will be performed to test the software to see whether it performs in accordance with requirements in the baseline.

### 4. Project Schedules (Configuration Management Milestones)

Project Schedules section describes the schedule of the FPS game project by careless, sequence of the tasks and coordination of the CM activities. Living Schedule can be followed for up-to-date information about the project status at:

http://senior.ceng.metu.edu.tr/2010/careless/schedule.html
5. Project Resources

The following items will be used as project resources

- Web Site: Project Development News (http://senior.ceng.metu.edu.tr/2010/careless)
- Geany, Kate IDEs: Development Environments
- SVN: Revision Control System
- Trac: Issue Tracking System
6. Plan Optimization

In order to monitor development status while working for implementation of the project, it is necessary to keep the Configuration Management Plan valid. For this reason, this Configuration Management Plan will be updated whenever required. During these Configuration Management Plan updates, a plan optimization will also be performed.