Ceng 492 – Graduation Project

Configuration Management Plan

Project: Wireless Door Security System
Group: OneTouch Solutions

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1 Introduction

Change can not be prevented when computer software is built and change increases the amount of confusion among software engineers working on a project. During the time of our software development, we will be making changes to our original plans. Software Configuration Management Plan is developed so that we can identify the change, control the change, make sure the plan is implemented correctly and make sure that we report the change to others.

1.1 Purpose of this document

The purpose of this document is to establish an integrated process for identifying, documenting, monitoring, evaluating, controlling, and approving all changes to work products throughout the life cycle of the program. With configuration management plan (CMP) we will be able to identify the configuration of the software at given points in time, control changes to the configuration, and maintain the integrity of the configuration throughout the software lifecycle.

1.2 Scope of Document

This document describes all Configuration Management activities for our project. This CMP defines the schedules, functions, responsibilities, and procedures for controlling the system configuration during the development, testing, and deployment of the project. And also it provides the basis for all software configuration management activities and describes our responsibilities, software configuration management (SCM) requirements, methods, basic procedures and requirements necessary to provide configuration control of the documents and the software, as well as the accurate reporting of configuration status. So with the help of this document, we will ensure that change control is established and maintained effectively, team members are aware of the impact of proposed changes and project documentation is recorded and released in a consistent manner.

1.3 Related Documents

2 CM Framework

2.1 Organization

Since we have rather small software development team, each member of the team will accept responsibility for software configuration management. This is necessary since there are only four members in the team. If one of the member reports changes remaining members have to take up a job of authorizing change and to ensure that change is properly implemented. This will reduce or eliminate confusion between the team members regarding changes with the software. The changes will also be included in Hot News section of our web page.

2.2 Responsibilities

In this section we will try to detail all important SCM tasks and will assign responsibilities for each. Emin Tolga Akgoz is the configuration management leader. He will be responsible for planning the configuration management activities such as auditing, change request meetings, change control reports. All of the SCM tasks will be performed by all members of the software development team. All changes in source codes will be changed in CVS server. So that all members will be informed about the change. Important changes will be discussed in team during regular team meetings and the team will consult to the supervisor of the project. The change will be applied after this procedure.

2.3 Tools and Infrastructure

In our project, the main configuration management tool will be the version control System (CVS). We are going to use CVS server in order to keep track of project related materials (source codes, web site files etc…). It will help us in the version control of project sources. We also use a web site to inform team members in which there is a Hot News section. And in this page there will be documents about weekly progress of our development process. In addition, we will use e-mail communication in order to accomplish coherence between team members.
3. The CM Process

3.1 Identification

a) Identify change

During the software development phase a team member may suggest a change in the software. Our project has a high modularity level that gives important flexibility to work independently for the members, and they can handle small problems independently. This will speed up the project. However, any important change which will effect others work require discussion between members in audits. Then we need to have the team work on the suggestion and to figure out if the change is necessary and is justified. So leader will organize a meeting to discuss this change whether in person to person or on the internet.

b) Approve change

We want to be able to have control over changes which will effect the overall software. We can not let have one member of software development team think of a critical change and implement it without telling any other member of the team. This can create huge technical problems for the software. We want to develop rules so that no member of the team will think of and implement change without permission of other members. As we said in previous title, the team members come together and approve or not the change.

c) Ensure that change is being properly implemented

We want to have team members looking over the change. Since all the teammates will be working separately, it is possible to have made mistake in implementing the change. To make sure this doesn’t happen, we want to set up times when team members will look over the change that other members have implemented and to finalize the change.

3.2 Management and Control

Changes will be controlled by using human procedures. There will be mainly two change procedure one comes from supervisor, one from team members. For the one which comes from supervisor we follow below procedure;

- Supervisor request change
- Team members conduct a meeting
- Evaluate the feasibility of change
- If it is feasible, the change will be analyzed for implementation.
- The design reports will be reviewed according to change.
- If it is not feasible, there will be an additional meeting with supervisor to discuss change.

The other procedure is as below;
• Any team member may recognize a need for change at any time during the lifetime of the project.

• Every team member must document her change request. This document should include reason for change, list of all affected configuration items, and description of the change and priority of the change (i.e., urgent, necessary etc.). All change requests and results will be documented and saved appropriately.

• All team members will review the request and reach a consensus as to the course of action that needs to be taken.

• If the change request is approved, then responsible team members will implement the change.

• The team will review the implemented change to verify its correctness and then test it

• New version of corresponding component will be created. Version control procedure is as below;

• As a result of changes, the version number of various modules will be increased accordingly. CVS server will give the version numbers and we will give descriptive labels to changes made.

3.3 Configuration Status Accounting

We will be using three different ways to communicate with the team members and to inform others that changes may concern:

a)E-mail:
We will use e-mail communication most of the time since every member of the team has access to a computer with internet connection.

b)Project Web Site:
Hot News Section of the project web page will be used to inform supervisor and other people about development of the project

c)Verbal Communication:
Since our software development team is small and all the team members are in constant contact with each other it would be better to communicate verbally.
3.4 Auditing

Functional Configuration Audit and Physical Configuration Audit will be performed. The purpose of functional audit is to verify that the development of a configuration management has been completed satisfactorily and that the configuration item has achieved the performance and functional characteristics specified in the functional or allocated configuration. We will perform functional audits at the end of development process following the completion of all the testing on the items that have been developed. We will also perform physical audits which will help us to see if a configuration management item conforms to the technical documentation that defines it.
4. Project Schedules

SCM schedule information establishes the sequence of tasks and coordination for the identified SCM activities and for all events affecting the plan’s implementation.

4.1 Schedule for Regular Configuration Management Activities

Every week we will conduct regular meetings among team members. During these meetings a certain amount of time will be given for inspecting current situation of development process. Furthermore, there will be meetings with the supervisor of the project every week.

4.2 Management Review of Configuration Management Activities

There will be a general review of the project development after completing each milestone. This review will be in the form of meetings among team members. Current situation of the development process will be reviewed and our strategy and schedule will be revised accordingly.

5. Project Resources

Every team member will be responsible for configuration management. As described before, our team will use CVS System to manage old and new code. Also, every member will keep a log to mention about last changes on the last version of the code. By CVS system, automatic backup system is kept and if a member needs previous version, he/she can download necessary part(s).

6. Plan Optimization

In this section, the activities and responsibilities necessary to guarantee the continuous software configuration management planning throughout the life cycle of the project will be identified and described. Emin Tolga Akgoz will be responsible for monitoring the SCM Plan and CM as mentioned in responsibilities section. We will do critical reviews of configuration management plan at every key milestones. This will prevent the plan becoming redundant and outdated. We will make clarifications, additions or reductions in CM plan. In the weekly meetings the changes to the SCM plan will be updated and evaluated. After approval of these changes, they will be applied to the plan.
7. Appendix

Versions

We will use formal version numbering as: \(<\text{Major Release}>,<\text{Minor Release}>,<\text{Bug Fix}>\)

Only list of integers will be used in versions. The integers will be separated with ‘.’ as shown above. The rank of the integer in the version represents a level of its contribution to the version as a whole. If the first integer of one version is higher than the first integer of another version, then we can conclude that the first one’s version is higher. If the first integers are equal, then the second integers are compared.