



MIDDLE EAST TECHNICAL UNIVERSITY
COMPUTER ENGINEERING DEPARTMENT

CENG491

Configuration Management and Development Plan

By

EsSoft

Arda GÜÇLÜ
Müjdat BAYAR
Kerem OZARKAN
Gencay DEMİREL

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1. INTRODUCTION

1.1 Purpose of the Document

Purpose of this document is to demonstrate the planned details of the configuration management which will be applied during the development of the PROTOCOL. All parts of this document are prepared by the group members and it will guide us to manage our pieces of products. This will prevent any conflicts between the team members' own ideas and hopefully saves us time. All the implementation and configuration management of the project and description the processes and procedures are defined in this Configuration Management Plan.

1.2 Team and Project Overview

Protocol is composed of mainly 3 modules.

- Autosensor
- Decoder
- Output Module

The communication between modules makes the project more complicated. We have to develop project in a controllable way due to this complexity. This implies the importance of the plan.

Our team is composed of four people who cover the weakness of each member. Although the communication between team members is well, due to the complexity of project we need a good configuration management plan.

1.3 Scope of the Document

This documentation is for our software's CM plan. This includes the whole process of configuration management. The actions that will be taken under the circumstances like change requests, troubles occurring will be explained in this document.

1.4. Acronyms and Abbreviations

CVS	Concurrent Versions System
CI	Configuration Item
CM	Configuration Management
CMP	Configuration Management Plan
TT	Testing Team
DT	Development Team

1.5 Document References

This Configuration Management Plan is prepared by the help of the following:

- Software Configuration Management slides in CENG 492 course.
- Final Design Report of our team.
- <http://en.wikipedia.org/>
- www.devdaily.com/wincvs/
- IEEE Standard for Software Configuration Management Plans (IEEE Std 828-1998)
- <http://senior.ceng.metu.edu.tr/2007/>

1.6 Document Overview

Document consists of 6 parts.

They are:

- ✓ Introduction: the purpose of the document is presented.
- ✓ The CM Framework: Organization and the tools are explained.
- ✓ The CM Process: Expresses the plan of whole project process.
- ✓ Project Schedule: The milestones of the project are stated.
- ✓ Project Resources: Plans the use of the recourses.
- ✓ Plan Optimization: The CM Plan updates are explained.

2. THE CM FRAMEWORK

2.1. Organization

In our project, CM activities are handled by the following teams:

- Configuration Management Team (CMT)
- Testing Team (TT)
- Development Team (DT)

In big companies, the members of these teams are determined and they are effectively used, but since we have only four people we can not make such a complete organization.

So, every member of our project team will be a member of each team.

2.2. Responsibilities

Team responsibilities are as follows:

- Configuration Management Team (CMT): This team is responsible for updating the CM schedule according to performed activities. Team is also responsible for making the team members obey the CM schedule.
- Testing Team (TT): This team is responsible for proper functioning of the software. Team can make CR if it is necessary.
- Development Team (DT): This team is responsible for implementing the source code of the software.

2.3. Tools and Infrastructure

Our project team will use the following tools:

- Department's CVS Repository
- Wincvs for CVS connection
- Microsoft Visual Studio

2.3.1 Concurrent Versioning System (CVS)

CVS is an open source version control system. It has a central repository that includes current source code, past versions of the system, and logs that document changes to the system. Every member of the project team will be able to reach that repository from his own computer.

2.3.2 Wincvs

This tool will be used for controlling the CVS repository. This tool has gui support.

2.3.2 Microsofot Visual Studio (MVS)

Microsoft Visual Studio (MVS) is an environment for making user interface. We used that software (MVS) to make our user interface of the design.

3. The CM PROCESS

3.1. Identification

In order to determine the current state of PROTOCAL project, we have identified the following CI's that are subject to change during our project:

3.1.1. Code:

This is the most dynamic part of the project. Thus, we have divided coding part into several parts that will ease the coding process. These parts are:

- Auto-sensor module
- Each protocol's handler
- Database Management
- Output Module
- GUI

Each team member will be assigned one of these coding processes. Each member will have right to make changes on the part assigned to him. These assignments will be changed according to progress of the project.

3.1.2. Documentation:

During the implementation of PROTOCAL, the group members will be preparing and changing several documents. These are:

- Configuration Management Plan
- Test Specifications
- Weekly Progress Reports
- Living Schedule

And also for the final release of the Project, the following documents will be prepared:

- Installation Manual
- User's Manual

3.1.3. Baselines:

Baselines CIs are about the milestones of the project. These CIs are as the followings:

- First version release of PROTOCAL
- Testing
- Documentation
- Final version release of the PROTOCAL
- Executables

CVS will be used for version control. When the milestones are completed, they will get the version numbers.

3.2. Management and Control

Although we separated coding into main modules, any change in any module probably will affect the other and the whole project. Because of this, the change in the code should be taken under control. Below we will explain the procedure of how the changes will be handled among group members.

3.2.1 Change Request

Procedure for Change Request is as will be mentioned below:

- The team's mail account will be used for requests that has "Change request" as subject. Requests will be discussed in the team meetings but for the documentation of the progress mailing the requests is an important issue.
- The request should clearly define the nature of the requested change, any deficiencies that the change is expected to correct, problems or symptoms to be addressed, the conditions for satisfaction of the request.
- If the requests come from the assistant or Siemens, spokesperson of the team will post the request to mail account.
- The requests will have a format that includes:
 - Id of CR
 - Date of CR
 - Deadline of CR
 - Requester
 - Description of CR
 - Related module etc.
- Approving or rejecting the request will be done by the team leader after discussing the details of the request by the team members. And approval or rejection will be posted to mail account.

3.2.2 Defect Tracking

Defect tracking is the process of finding defects in a product. In our project defect tracking will be performed after each task is done by testing of that task. First of all, the task will be tested on meeting all the customers' needs. Since each task is assigned to some of group members, it will be crucial important that the same task will be tested by the same group members who were assigned to that task. In the case of unsuccessful result of the test analysis, the team meeting will be arranged; the defects of the task and some possible solutions on the defects will be discussed and finally, some team members will be assigned to handle the same task out of the defects met during the test analysis.

3.3. Configuration Status Accounting

Informing the group members is the important part of the project. Therefore, configuration status accounting is used to deal with this part. By configuration status accounting, changes in project, operational development of project can be easily followed by the group members. To make effective configuration status accounting, we make some rules for our group members when one of them makes some changes in the project.

Rules are:

- Writing a report that is about which module is changed and why changing this module is needed.
- After making the modifications, member should control all the modules to determine is there any compile time or running time error. If error is found, this member should deal with this.
- Modifications should be informed other group members by using msn, mail, etc.

3.4. Configuration Auditing

Auditing is the evaluation process of the project. Since we use Controlled Decentralized team model, auditing process is performed by our project leader. There is lots of ways that is to perform auditing, such as weekly meetings and requests.

Since we gather every week to analyze what has been done up to now, and what will we do according to our Schedule, leader of the project can perform auditing. In these weekly meetings, baseline configuration and current configuration is compared to find out which changes can be made about the project schedule. Questions of the members are discussed, levels of the members are evaluated, and if member has a problem about the project, necessary changes can be made according to this member's needs.

Requests are the other way for auditing. Each member of the project may want auditing requests. Missions can be changed according to the needs.

Furthermore, members can ask questions to the leader of the project in these auditing requests.

4. PROJECT SCHEDULES

We have a living schedule on our web site and necessary changes will be made on it during the development. We have regular meetings every Tuesday with our assistant. The current level of the project is discussed in these meetings. However, team members have some meetings with each other. Each member talks about and give information about it and next week plan is discussed.

We have two milestones in this project which are the deadlines of audits of this project. We have to arrange and plan our program according to these milestone dates announced in our living schedule that is found in the below web page.

<http://senior.ceng.metu.edu.tr/2008/essoft/>

5. PROJECT RESOURCES

The backup of the project will be achieved by using CVS system. The system will be used carefully in that some files due to their big content and that don't need much change (like the resources files). All the changes to the files in CVS system will be made according to the decisions of the project members. Such decisions will be handled in the meetings or through the shared e-mail.

Our web page is one of the CM sources since it includes all the project documents and living schedule which is being updated continuously. All of these are important resources to complete the project without any problems.

6. PLAN OPTIMIZATION

All the project members are responsible for monitoring and maintaining the CM Plan. In our weekly meetings, we can evaluate the changes can be done to the Plan and if it is essential, we can approve these changes and update our CM Plan weekly. Moreover, these changes can be made using CVS and project members can be informed via e-mail using mail group.