# Middle East Technical University

## Department of Computer Engineering

**Computer Engineering Design 2**

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**Configuration Management Report for PATİKA Project**

**Striders of the Modern World**

**Levent Oral**

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# 1. Introduction

## 1.1 Purpose of CMP

Patika is a complex project which consists of many data model, engine and factory packages. It also has many GUI layouts and GUI packages that communicate with each other. Because of enormity and relations inside project, any modification can cause conflicts unless modifications are notified to all developers. Thus, CMP report is necessary for planning of team work between Patika Project team members and it is necessary to maintain Patika Project's both design and implementation sides.

## 1.2 Scope of Document

The scope of this document is the Patika Project, conducted by SMW and sponsored by ASELSAN. This document consists of information about organization of team members, timeline of the project and Configuration Management being used. Versioning, controlling changes, reporting and how these actions are done are mentioned in this document. The intended audience of this document is the developer team of Patika Project, the sponsor, ASELSAN and the responsible instructors at CENG of METU.

## 1.3 Definitions, Acronyms and Abbreviations

ADT: Android Development Tool

CCB: Configuration Control Board

CCT: Change Control Team

CENG: Computer Engineering Department

CM: Configuration Management

CMP: Configuration Management Plan

CMT: Configuration Management Team

CSA: Configuration Status Accounting

METU: Middle East Technical University

SCR: Software Change Request

SDK: Software Development Kit

SDT: Software Development Team

SVN: Subversion

TT: Testing Team

## 1.4 Document References

[1] *Adt:plugin for eclipse*. (n.d.). Retrieved fromhttp://developer.android.com/sdk/eclipse-adt.html

[2] Configuration Management, The presentation prepared by CENG492 instructors

[3] IEEE Standard for Software Configuration Management Plans (IEEE Std 828-2005)

[4] *Subclipse*. (n.d.). Retrieved from http://subclipse.tigris.org/

[5] *Svn*. (n.d.). Retrieved from http://subversion.tigris.org/

[6] *Trac*. (n.d.). Retrieved from http://trac.edgewall.org/

## 1.5 Document Overview

This document consists of six sections, namely Introduction, The Organizations CM Framework, Configuration Management Process, Project Schedules and CM Milestones, Project Resources, and Plan Optimization.

First part, introduction, consists of the purpose of CM, the scope of the document, explanations of acronyms that are used and references to documents that are included.

Second part, The Organization of CM Framework, consists of the organization between team members, responsibilities of each team member, tools and functionalities of these tools.

Third part, The CM Process, consists of identification process, details of Management and Control, Configuration Status Accounting and auditing.

Fourth part, Project Schedule and CM Milestones, lists and explains the crucial dates and milestones of Patika Project.

Fifth part, Project Resources, gives explanation for the needed resources by CMP.

Finally, sixth part, Plan Optimization, has the conclusion followed by optimization of CMP by Patika Project members.

# 2. The Organization of CM Framework

## 2.1 Organization

SMW is a 4 membered group and all members have equal rights and responsibilities on the project management process and have equal contributions to CM. There are sub-teams and related tasks of each sub-team which is explained below to manage the process. These sub-teams and tasks are:

- Software Development Team (SDT):

SDT is mainly responsible of implementing part of Patika Project. Moreover, fixing bugs, making changes requested by TT are other duties of SDT.

- Testing Team (TT):

TT is mainly responsible of testing and debugging of the implementations made by SDT. Checking whether the requirements are fulfilled or not and giving feedback about implementations are also responsibilities of TT. TT can give SCRs if necessary.

- Change Control Team (CCT):

Mainly CCT is responsible for approving, declining, examining and controlling the SCRs. Thus CCT is the supervisor of other teams.

- Configuration Management Team (CMT):

Sustaining of organization of CMT is the main duty of CCT. To achieve this goal, CMT is interested in the updating of plan.

## 2.2 Responsibilities

Each member of Patika Project is a member of Configuration Control Board (CCB) so same responsibilities are taken by each member. These responsibilities are:

- Commenting before committing resource code through SVN when any change is made.
- Carrying out the CM schedule.
- Informing other members about SCRs through mail.

## 2.3 Tool & Infrastructure

- Eclipse IDE :

Since Patika Project requires Android SDK, Eclipse IDE provides a plugin, namely; ADT[1], Eclipse is very good option for development phase. Moreover, Subclipse[4] plugin of Eclipse IDE provides user friendly interface for SVN usage.

- Subversion :

SVN[5] is an open source version control system. Managing files and directories can be done by SVN. Any change is remembered and can be tracked by SVN.

- TRAC :

TRAC[6] is an open source, web-based project management and bug-tracking tool. Moreover, it is a web interface for SVN.

- Web Page :

All news, progress and documents can be reached from Patika Project's web page.

# 3. The CM Process

## 3.1 Identification

The Configuration Items (CI) consists of 3 categories, namely; the source code, the data and documentation. These are explained in the following sections.

### 3.1.1 Source Code

Patika Project source code can be divided into 3 major parts, GUI part, 3D Map Visualization with DTED2 and Path Finding Algorithm Implementation.

First part, GUI, is in an ever changing state required by newly developed parts and their integration processes.

Second part, 3D Map Visualization with DTED2, is a big part of Patika Project so any change in reading DTED2 data and implementations to OpenGL ES is crucial. Tracking changes and effects of this part on GUI is also crucial.

Third part, Path Finding Algorithm, is another important part of Patika Project. Changes in this part can reflect to GUI.

All these relations show the reason why each member should comment in their source code, variable names and function names have to have standards that are determined by JAVA programming language. All source code is kept in the SVN repository provided by METU in addition to individual storage.

### 3.1.2 Data

XML files that keep information about Tanker Vehicles and Receiver Vehicles are part of data. Moreover, DTED2 file that keeps information of our map is part of data.

### 3.1.3 Documentation

Documentation is a very important part of CI for Patika Project. Documents that have been created so far are listed below and some of them can be found in Patika Project web page:

- Project Proposal
- Software Requirement Specification Report
- Initial Design Report
- Detailed Design Report
- Iteration Schedule
- Configuration Management Report
- Weekly Progress
- Web Page

## 3.2 Management and Control

### 3.2.1 Software Change Requests (SCR)

In the Patika Project, minor SCRs do not require detailed information and are handled by SVN. However, major SCRs need to be handled by TRAC system's tickets. Major SCRs consist of some details which are:

- Related team member name
- The Description to SCR
- Deadline to SCR
- Related Module of SCR
- Type of SCR
- Priority of SCR
- Version of SCR

### 3.2.2 Software Change Evaluation

The recorded discussion about SCR will be done in TRAC system's tickets. Moreover, unrecorded face-to-face meetings give an opportunity for the evaluation of SCR. The meetings led by Gülcan Can (Teaching Assistant of SMW) will be an evaluation time for SCR.

### 3.2.3 Software Change Implementation

If SCR is approved, then determining other related and possibly affected CI's and changes will be re-implemented. After implementation the new version of CI is committed to SVN.

## 3.3 Configuration Status Accounting

CI is listed in the previous section and as the project grows it is hard to keep track of changes. Therefore, to prevent this disorder, when a member makes a change in a source file in SVN, that member has to inform all other members and teaching assistant about that change. Moreover, that member has to comment on the reasons and on the results of change before and after committing. Furthermore, changes will be explained shortly in web page of Patika Project.

## 3.4 Auditing

Auditing will be done by all members individually and it also will be done in weekly meeting by specific test methods. Moreover, e-mail and TRAC system are other tools for auditing by giving opportunity to discuss and to evaluate requests and changes. In a meeting, the content and organization of next week's meeting will be arranged. Distribution of duties and assigning of task to each member will be done.

# 4. Project Schedules – CM Milestones

Milestones of the project can be listed as follows:

- Web Page Publishing (14/03/12)
- First Development Snapshot Demo (27/03/12)
- Visualization of DTED2 map (28/03/12)
- Implementation of point to point path finding algorithm (08/04/12)
- Visualization of paths (22/04/12)
- Implementation of path finding for multiple points (06/05/12)
- First Release – Demo (15/05/12)
- Simulation of generated paths (20/05/12)
- Final Release – Demo (09/06/12)

Milestones mentioned above will be followed on Trac and their scheduling will be arranged on Trac.

# 5. Project Resources

- Eclipse IDE : Development Environment
- SVN : Subversion Control System
- TRAC : Issue Tracking System
- Web Site : Project Development News

# 6. Plan Optimization

CCB is responsible for controlling updates and changes in Patika Project. These responsibilities are divided to each member equally by considering interests of members. Mainly, communication via mail and chat is crucial to organizing during implementations. Moreover, TRAC system is a good warning system for members to organize updates and changes. Finally, weekly meetings are a main part of updates, changes and organization. Controlling process will be done with these channels. In addition to these channels, small demos will be done every 2 weeks to keep Patika Project consistent.