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CONFIGURATION MANAGEMENT PLAN

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Changes of Configuration Management Plan

This part will be used to keep track of the changes done to the CMP. By means of these parts the member of team will be sure that he\she is using the last version of the CMP.

Date	Change Number	Explanations of the Changes	Changed Part	Revision Number

1. INTRODUCTION

This document is released version of the “ANKA Yazılım” Configuration Management Plan.

1.1 Purpose of Configuration Management Plan

Organization is one of the most important subjects in projects that include more than one person. In order to construct an organization for development process, configuration management concepts must be well defined.

Configuration management (CM) is responsible for detecting, managing changes and handling the results of these changes in the project. In order to avoid confusions in development of computer software, it is crucial to analyze the changes before they are made, recorded and implemented. Applying configuration management strategies efficiently improves the quality of the system and reduces errors in the final product.

Configuration Management Plan is crucial for:

- Enabling developers to work on the same project together
- Enabling developers to access stable and all previous versions of the system
- Enabling developers to control and realize the changes done to the system
- Reducing risk of project planning

1.2 Scope of the Document

This document contains the ANKA Yazılım “Traffic Education” project Configuration Management strategies that will be followed during the development and debugging processes of the software development. This document mainly focuses on the following concepts:

- Our purpose to construct CM Plan
- The ways to handle changes in different versions
- The setup that must be performed before the CM decisions are made and the processes are started
- How we will implement Software Configuration Management (SCM) process
- What are the activities, tasks, inputs and outputs required for this SCM implementation
- What are the structure of the organization to handle the SCM and what are the roles of each individual in this organization

1.3 Definitions and Abbreviations

CVS	Concurrent Version System *CVS is one of the version control systems by means of which the changes done to the system parts can be kept properly.*
CM	Configuration Management *CM is used to identify, control and handling versions of all related project parts. It is required to guarantee that all changes are recorded and handled properly.*
CMP	Configuration Management Plan *CMP is prepared to form a written and available form of formally accepted rules for CM process.*
SCM	Software Configuration Management *The way of identifying system's configuration at determined points. It is also a way to control the changes done to the system during the system life cycle.*
SCR	Software Change Request *The way of reporting and handling change suggestions to the system.*

1.4 References

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

- IEEE Std 828-1998 IEEE Standard for Software Configuration Management Plans (Revision of IEEE Std 828-1990)
- "Software Engineering": Pressman, Roger S. (2001): Sixth edition. New York, NY: McGraw-Hill

2. SOFTWARE CONFIGURATION MANAGEMENT

In order to avoid problems related to the responsibilities that the team member have to perform when he/she is assigned to handle a task, roles must be identified clearly. The SCM activities also have to be identified clearly. Each of the required roles and activities are explained in the following parts of the document in a detailed manner.

2.1 SCM Activities

In order to manage software configuration properly the following activities will be done:

- Problem reporting and forming SCR
- Change request review
- Assigning SCR to one of the team members
- Identifying effects of the changes to overall
- Check the correct actions to the SCR are done or not
- Testing the effect of the change
- Identifying the configuration items
- Establishing and controlling Baselines
- Protection against unauthorized changes
- Deal with the time and resource planning issues

2.2 Organization and Responsibilities

The organization of the team and roles of each member for Software Configuration Management activities are defined according to needs of the software development process. Because of the fact that there are only five people in our project, any role defined in the below table is not restricted to one of the team members. According to the problem that occurs, the roles may interchange however there will be always someone who performs each of the roles.

The organization and roles of the team are explained in the following table:

Name of the Organization Role	Responsibilities of This Role
Quality Engineer	• Controls the Configuration Management Plan and compare CMP with the other plans and standards of the project. • Ensures that the software development process steps are done according to CMP. • Attends weekly project meetings which are related to configuration management concepts • Check the correct actions to the SCR are done or not. • Ensure that the correct product is released
Team Controller	• Ensure that the change control are performed • Assign one of the team members for handling SCR. • Correct the CMP according to the found errors. • Find the effects of the SCRs to all of the software if there is.
Test Member	• Tests whether system satisfies its requirements or not. • Tests the results of the changes done related to SCRs • In case of error reports
Development Member	• Perform developmental change control activities • Implement assigned change activity • In the case of need create SCRs • Implement decisions given before by the team during the implementation of corrective actions into the project. • Using CVS for update of code to the corresponding folder.

2.3 SCM Resources and Tools

In order to construct an organized way of software development:

1. Current and previously released versions of configuration items will be retained. This will be achieved through the use of Concurrent Versions System (CVS) which is supplied by the department.
2. Documents under configuration will be accessible to the entire group members at all times by the help of WinCVS or Tortoise.
3. Two of the team members live outside the campus so in order to access to the CVS repository we will use SSH protocol.

2.4 SCM Plan Maintenance

Origin of the configuration management concept is the unavoidable changes thus even if we tried to identify all the concepts as much as we can, there will be needs to change the SCM plan. As a result of that fact our SCM will be updated in further investigations. The way to handle the changes in SCM will be done according to that order:

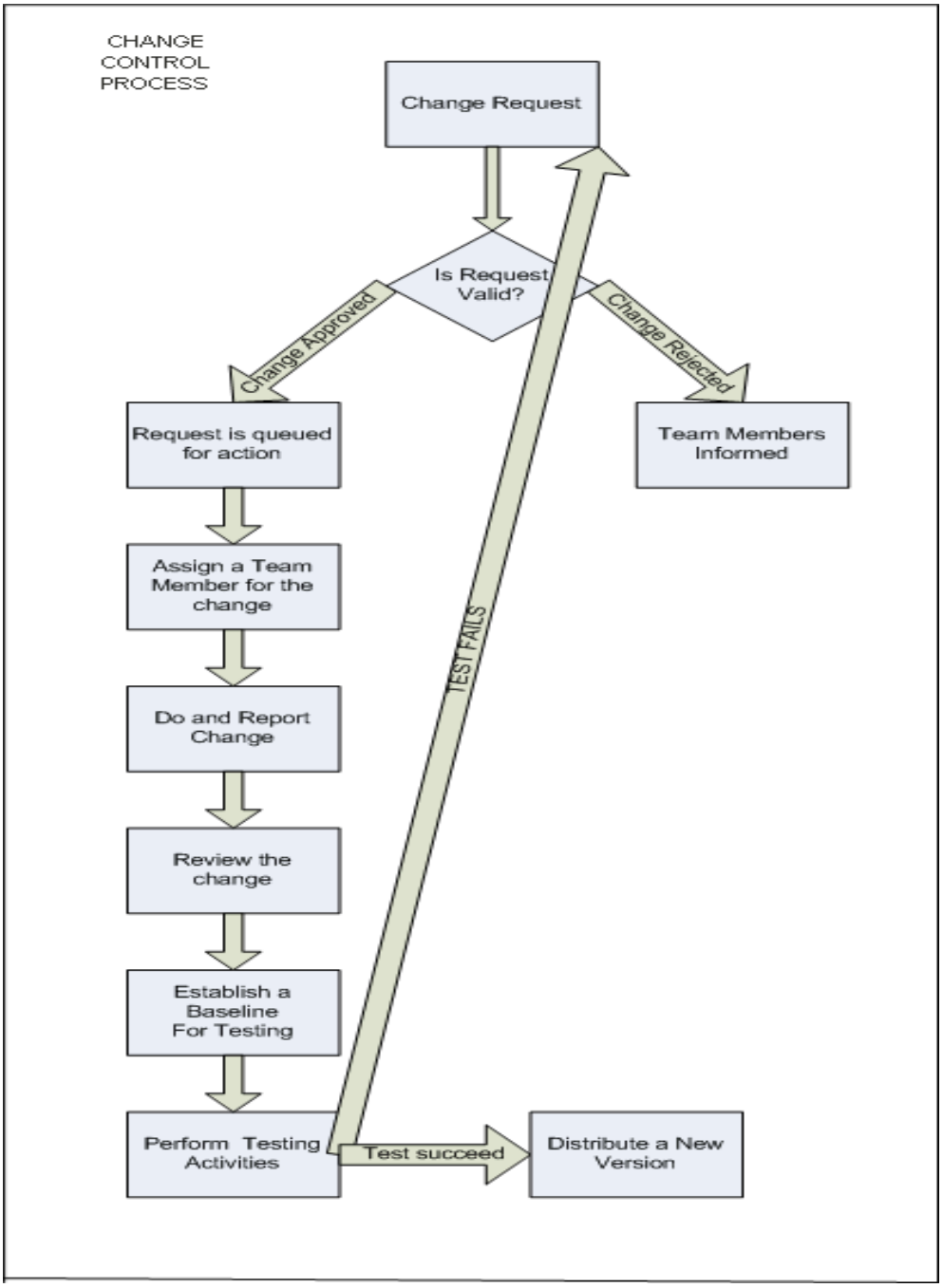
- Problem is identified
- Problem is reviewed
- Solution is found
- Change is done
- Version is updated
- The part, which includes the version and the changes that are applied to CMP, at the beginning of the CMP will be updated.

3. CONFIGURATION MANAGEMENT PROCESS

When we examine the roles defined for SCM, there are four main categories. By the following organization, handling SCM concept will be easier and error free. The four main categories are:

1. Identifying
2. Managing and controlling
3. Configuration Status Accounting (CSA)
4. Auditing

These steps are explained as a whole in the following flow chart. There is also a corresponding explanation part for each step after the flow chart.



3.1 Identification

In this part of configuration process, we have identified the following items that are subject to change during our project. These can be grouped in three:

- *Models and Textures*

  Since our project is a graphics based project, we have to deal with many models. As our models improve, we are going to make the necessary changes and keep the previous versions.

- *Source Code*

  The most dynamic part of the project is the source code, thus we tried to modularize the software as well as we could. Each member of the project will have right to add a new version to the CVS repository.

- *Documents*

  All the necessary documents made during the development phase will be kept in repository. For example, we will store a document for bug tracking in CVS.

3.2 Managing and Controlling

The steps that we will follow in the SCM process which are described in the below control flow diagram are as follows:

- *Change Request:*

First a team member recognizes the problem and he opens a SCR. This request can be told the other members via e-mail or phone. However, apart from the knowledge of the change request, this member should write the details of this change to a .txt file and put it under the documents repository in CVS.

Rules for change request:

- There will be a SCR form for each change request
- A SCR form cannot contain more than one change request, for each change request there must be a unique one.
- Each team member have to examine the previous SCR forms for not to repeat the same SCR.
- The format of the SCR must be in the following form

SCR Form
Reporter of SCR: …….   **Day of report:** ……/……/2006   **Version in which the SCR opened:** ……
Document Path to which the SCR is related: …….
Detailed Description for the Reason of SCR:
EVALUATION: **Handled by:** …….   **Type of Software Affected:** …….   **Modules/Screens/Tables/Files Affected:** …….
Status Of SCR: …….

- *Change Request Evaluation:*

Team controller considers the validity of this change request. If it is not a problem for the team to meet, these changes should be evaluated in a meeting. However, if meeting is a problem, at least two people should accept this change. Assigning a team member to this change is also made in these meetings.

- *Change Implementation:*

Firstly, the assigned developer examines the problem and then he does the required changes. After making the changes and doing the necessary tests, he informs the other members. He removes the change request .txt file from

documents repository and adds necessary comments to the CVS during the version change.

3.3 Configuration Status Accounting

In order to keep track of changes, we will group the files kept in the CVS repository according to their functions. We will create a .txt file for each group in the repository. This file will include the following fields:

Description of the each change that is done to any of the file that is in the corresponding group. This description will include:

- The name of the file
- Its version numbers before and after the change
- The reason of the change and the place where the change is applied in the file
- The effects of the change to the overall system if there is any
- Names of the team member who opened SCR and the person who solved the problem

3.4 Auditing

We will take meetings for auditing after making important changes to the system. For each audition we will held a meeting in order to discuss the situation of the system. In these meetings, we will talk about the changes that we have made since the previous audits and also discuss for the further changes which are needed for accomplishing the requirements.

4. CM MILESTONES

In this part we will not mention the project scheduling, it is available in the living schedule. Mainly CM milestones are explained. The main CM milestones for our project are:

- **Baselines**: After each certain change to the systems we will take a baseline. We also have time related baseline requirements. The general baselines will be taken at the end of the implementations of :
    - User interface design
    - File manager module
    - Sound requirements
    - Artificial intelligence requirements
    - Test results
    - First release
    - Final Product

- **Reviews**: The CM procedures and policies will be periodically reviewed. At the end of these reviews SCR for CMP can appear. There will be six main reviews for examining SCM. These six reviews will be hold before taking baselines for each of the events that are mentioned above.

- **Audits**: For one or more SCRs and their corresponding changes there will be reviews. During these reviews the effects and handling ways of these effects will be discussed and determined. Reviews can also cause to take baseline.