Software Configuration Management Exam August 2008

This exam is for students of the SCM course 2008. The questions are valued according to the following scheme:

Question 1-10:   60 points in total, each question is 6 points
Case: 40 points

In total you can gain 100 points; the end result of this examination is the number of points divided by 10. The final grade for this course is the average of the industrial report and this examination (under the condition that both parts are graded 6 or higher).

Exam Rules:
- No books or reference material
- No calculator or similar electronic devices
- No mobile phones

We wish you success!

Niels Veerman
René Krikhaar

General Questions

1. Give a definition of configuration management.
2. What are the four "pillars" of Configuration Management?
3. What is a configuration item? Provide 5 examples of configuration items in a project.
4. What is a version? What is a variant? What is the difference?
5. Suppose you develop a version management tool. What is an efficient way of storing versions of configuration items? Explain the choices.
6. Describe the "daily build and test" mechanism. Why should an organization use this?
7. Give a definition of a baseline. Give 3 different reasons for making baselines.
8. What status accounting information does a project manager need? Explain why you need this information.
9. Give a definition of a branch. Explain, by giving an example, why one needs branching.
10. What is the result of an "update" in Subversion? Is a "commit" in Subversion an atomic action? What does that mean in practice?

The Mauser Case

The "Mauser" company has developed a communication website for chats. Chats are able to "miauw" to each other via the webcam. The chat owner is able to see his/her

chat or talk to his/her chat via a separate, encrypted, audio channel. The "Mauser" company adheres to ISO-10007 for configuration management. Chats may submit request for changes by filling out a special CR form. Each request is considered by the CCB (Change Control Board) of the "Mauser" company. The CR flow is described below.

In answering the questions you may use some assumptions, but the made assumptions must be stated in the answer. The following questions are all related to the Mauser case.
Error! Objects cannot be created from editing field codes.

11. (20 pts) Describe all <u>transitions</u> in the CR flow of "Mauser", the answer must contain:
    - In total 5 typical fields of the "Mauser" CR? Indicate the mandatory ones (justify)
    - Which persons (roles) are involved at each state? Who triggers a transition?
    - Which information should be added to the CR form in each state?

The "Mauser" company has sold their product to an internet company. For this company special features are developed, which are enabled via standard web technology. The "Mauser" company also sells their product out-of-the-box via the "mol.com" web-shop. About thousand customers have already bought the "Mauser" product , which consists of software and hardware, via "mol.com".

12. (20 pts) Sketch the <u>branching diagram</u> as included in the SCM plan of Mauser (include at least 3 branches)
    a. Explain the branches, which actions should be performed in which branch. (or in other words: why are they needed?)
    b. Include releases in the branching diagram. Suggest a release numbering scheme for all kind of releases of the product.