Introduction

Whereas computer equipment made and continues to make a very fast progress, the software development process needs always an improvement. Ericsson Mobile Platform (EMP) is responsible for the development of a software platform. EMP is developing the data communication parts of the platform which is used by EMP customers. In this thesis, we present a solution that achieves a fast process with high quality output and handles a customer requirement (CR) without jeopardizing the existing architecture of the running development projects of Ericsson. Thus, a new mechanism has been investigated based on Test-Driven Development (TDD) as a main practice in Extreme Programming (XP).

Problem statement

The software development must be seen like a process, so called a software process. This process is composed of sub-processes that communicate between different stages. The current process in software development is composed of iterations. Each iteration can be considered as a small waterfall model.

Proposed approach

In our proposition, we suggest to integrate “test-driven development” in the current software development process without affecting the existing platform. Therefore, we propose locating TDD cycle to cover both of implementation and test modules. It is required that TDD cycle should be a short-term cycle. It should be repeated frequently every day. This proposed development process is shown in figure 2.

Results

Verification of the proposed solution that explores an improvement in software development process is done by analysing, designing and implementing a new functionality related to Wireless Local Area Network (WLAN). The performance has been demonstrated first by spending less time in development phase. We spent very little time to seek bugs in our code with TDD opposite to the current process. We spent the major time developing new functionality rather than debugging the code. Thus, customer satisfaction can be reached with reducing time to market. In addition, writing high quality code within minor errors and bugs has been noticed. Consequently, improving product quality and reducing the cost of project can be achieved.

Conclusion

In this thesis, a software development process improvement has been proposed based on TDD. The objective was to improve the EMP development process. Therefore, we investigated a solution that achieves a rapid process with high quality output to handle customer requirements.