Abstract
Ericsson is committed to provide world class products to its customers. As our products are more and more dependent on software we have taken on a corporate goal to build a world class software organisation. This has lead to several local and global improvement initiatives. In this article we describe one of the improvement projects, TTM15 within Ericsson's business unit for fixed telecommunication networks. What is unique with this project is the size and distribution of the target organisation. This has given many organisational challenges, but also opportunities in synergy effects, peer networks and learning from each other. This article describes the goals, organisation, content experiences and current status of the project.

Keywords
Process improvement, incremental development, team work, reviews, process adherence, GQM, CMM

1. Introduction
"Today a large part of Ericsson's profits and development costs emanate from software. It is very important to Ericsson to build a world-class software organisation"—Lars Ramqvist, CEO of the Ericsson group.
This challenge has been picked up all over Ericsson, and many corporate and local improvement initiatives are ongoing, e.g. policy deployment and CMM [1, 2], and local improvement work piloted in smaller projects, e.g. [3,4]. This has also lead Ericsson to set up very high quality goals, i.e. a 50% reduction in the number of customer reported faults each year. When we realise the current quality of telecommunication software, e.g. availability, these are goals that only a world-class software organisation can achieve. The TTM15 (Time To Market 15 months) improvement project is one major initiative within Ericsson's business unit for fixed telecommunication networks, BUX, to meet this challenge.
The goals which the TTM15 improvement project should support were:
- Lead-time: 15 months from Toll Gate 1 (frozen requirements) to Toll Gate 4 (delivered to first customer).
- Quality: 0.1 faults pr. KNCSS (1000 non commented source statements) during the first 6 months in operation.
- Size: All projects should be less than 500.000 man hours.
- Frequency: Each product line shall have a new release every 6-9 months.
These goals were valid for all development projects starting in 1996. This was the situation which faced the TTM15 improvement project in the middle of 1995. Thus the purpose of the TTM15 project was to
Select, prepare and support a set of process improvements that could help the involved organisations and development projects to reach the TTM15 goals. To fully understand the organisation of the TTM15 project we need to look at the situation for the target organisation, BUX. BUX is responsible for developing the AXE 10 applications for fixed telecommunication networks, i.e. the large local and transit exchanges. BUX is operating in the following environment:

- Software development projects in BUX are distributed, with design spread over 20 local design centres (LDC’s) in 4 continents. This is a strategic advantage for Ericsson having core technical competence close to the customer.
- Standard software projects in BUX are large, not unusually in the range of 1 million man-hours.
- BUX’s customers also need local adaptations of the standard software to accommodate national standards and features. Thus the standard version developed is adapted by marked projects.
- The LDC’s involved in the development have a large amount of autonomy, e.g. software quality responsibility and market authority.

The status within BUX development at the start of the TTM15 project can be summarised as follows:

- Many local design centres have very good software development practices in different areas, but we need to speed up the transfer of practices between the local design centres.
- A joint effort between the large development projects and local improvement initiatives is necessary to give the full effect.

The most unique aspect of the TTM15 project compared to other improvement project is the distribution, i.e. how we speed up the transfer of best practices between LDC’s through competence teams and in co-operation with large target projects.

The rest of this article is organised as follows:

- Section 2 describes the organisation and process of the TTM15 project. The TTM15 project was set up to support the development and implementation of a set of improvements in this distributed organisation.
- Section 3 describes each of the improvement areas. These improvement areas were selected to support the target projects and involved LDC’s to reach their quality and lead time goals.
- In section 4 we discuss the measurement program used to evaluate the effect of these improvements on the project goals.
- Section 5 contains an evaluation of the results/ current status and some discussion on the experiences from the organisation of TTM15.
- Section 6 concludes the article and points out directions for future improvements within BUX.

2. Process and Organisation

In this section we discuss the process and organisation that we have used in the TTM15 project. It is organised onto three parts:

- Design criteria giving the rationales behind the process and organisation.
- Organisation and process describing the initiation, preparation, support, and completion phases of the TTM15 project.
- Local activities and financing are discussed at the end.