

# Industry Visit Report: Ericsson AB, Stockholm

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## Introduction

During the period fall 2004 - 2005, I have spent approximately 1 day/week at Ericsson AB in Älsjö, Stockholm. The site in Älsjö is, among other things, responsible for the development and the maintenance of the software in the AXE exchange system. I don't think that Ericsson as a company need any further introduction.

The project that I am involved in, deals with adapting software written for sequential architectures to parallel hardware. This is carried out together with people from Ericsson, and I also have two of my (assistant) supervisors at the company.

## The purpose of my visits

The main reason for the "trips" during the fall of 2004 to the summer of 2005 has been to document (by a formal semantics) the language PLEX, which is used to program the functionality in the AXE system. In this work, we have looked at both the current sequential implementation/architecture, as well as an experimental implementation/architecture. The work has been carried out together with my supervisors at Ericsson, and we have also reported on the developed semantics in a paper presented at the APPSEM'05 workshop [1].

The visits has continued this fall (2005), and the purpose is now to perform inspection of the current software in order to get an opinion on how well the existing code is suitable for parallel processing, i.e., trying to identify those parts of the software that are suitable candidates for concurrent processing. In order to determine this, i.e., to get an opinion on the suitability, we look at how the shared variables in the system are used, and if there are any potential problems/conflicts. This has already been discussed, in theory, in a master thesis project at the university [2], and the main purpose of our current activities is to get an opinion on the actual frequencies of the potential problems discussed in this master thesis. The result of this study is planned to be published in a Technical Report, and perhaps also in a forthcoming conference/workshop paper (as a case study).

## References

- [1] J. Erikson and B. Lisper. Two Formal Semantics for PLEX. In *Proceedings of the 3rd APPSEM II Workshop, APPSEM'05*, Frauenchiemsee, Germany, 13-15 September 2005.
- [2] B. Lindell. Analysis of reentrancy and problems of data interference in the parallel execution of a multi processor AXE-APZ system. Master's thesis, Mälardalen University, 2003.