

**Master Thesis with Industry Connection: Tool Integration with SOA (service-oriented architecture), MDD (model driven development) and Java Development**



**Background - Tool Integration:**

Today, developers of complex software systems, such as embedded systems in power plants, airplanes or the car are using a number of development tools, which today do not work together effectively. Ideally, all the required tools are integrated in a tool chain.

**Context - ABB and KTH:**

In the iFEST project (<http://artemis-ifest.eu>) the partners will provide a tool chain consisting of several tools. ABB (<http://www.abb.se>) and KTH cooperate in building parts of this tool chain, called tool adapters. In this thesis we will create a tool adapter for Enterprise Architect UML modeling tool ([www.sparxsystems.com](http://www.sparxsystems.com)).

**Technology - MDD and SOA:**

The tool adapter will be realized as a web-service using the service-oriented architecture (SOA) and model driven development (MDD).

**In the following some concrete milestones for the master thesis:**

1. Elicit the requirements for the tool adapter based on the current and future/desired working practice of our industrial partner ABB. This would require that the master student will conduct either a dedicated internal survey at ABB or will base it on existing survey results.
2. Model the tool adapter and using MDD technology
3. Implement the tool adapter using SOA technology
4. Test the tool adapter together with ABB.

**You bring:**

- \* Working on a degree in Software Engineering or similar
- \* Availability February/March 2012 - August/September 2012
- \* Excellent written and oral English communication skills
- \* Experience with Java and Eclipse of at least 2 years
- \* Experience with the development of web services and service oriented architecture (SOA)
- \* Experience with model-driven development (MDD)
- \* Experience with Eclipse EMF and Model Transformations is a plus

**We offer:**

- \* Strong connection to Industry: ABB, Väsetrås
- \* Payment for the master thesis is available
- \* At least one meeting per week with your academic advisor
- \* Opportunity to work with the latest technologies for modern software engineering

**TODO:**

- Please send your application to Matthias Biehl ([biehl@md.kth.se](mailto:biehl@md.kth.se)) and include:
- \* short motivation letter (highlight experiences relevant for this thesis)
  - \* CV
  - \* recent transcripts from your university