

SAL-T Cycle report 10/10/2008

Schedule

The schedule for the first project cycle consisted of the following steps:

- Setup of development environment
- Installation of middleware
- Evaluation of middleware
- Define test procedures
- Define basic structure of data transfer format, incl. metadata
- Prototype for glue between SAL and middleware

Progress

The status of the project after the first cycle is, that we have achieved almost all the points that were listed in the schedule for the first cycle except for the evaluation of the dataturbine. We have postponed this, because we wanted to have some real data out of SAL that we can use to measure the performance. The prototype that we have written in the first cycle had the following features, that we could show our customer:

- Establish connection to SAL
- Read sensor data from SAL by polling
- Establish connection to Data Turbine
- Write to / read from Data Turbine
- Encoding of data to be transmitted as gzipped XML

Problems

The configuration and administration of the dataturbine itself turned out to be more complex than we anticipated. The installation itself was done without any problems and the software was ready to use. The configuration, the monitoring of processed data, established channels, reading and writing application connections however is complicated. As the software was running and we figured out the most important things, we concentrated on the programming of the “glue”, instead of getting to deep into the dataturbine.

Challenges

RMI Performance: We see the RMI connection between the SAL and the dataturbine as an impact on the performance. If there will be a lot of sensors connected to SAL, it will decrease the performance.

Multithreading: If we need to poll sensor data at different time intervalls, according to the sensor type and configuration we may need a thread for each sensor. With a single thread for each sensor there would not be a problem to handle them individually.

Dataturbine performance evaluation: As mentioned before, the evaluation of the dataturbine has to be done in the next cycle. Therefore we have already set up a method to generate data and multiple connections to it.

Risks

Returning to the risks stated at the beginning of the project, we have now reweighted them as follows:

Risk title	Original Severity	New Severity
User impact understanding	high	high
Project Scope	medium	high
Requirement Understanding	high	medium
System familiarity	medium	medium
Data Storage	medium	medium
Testing difficulty	medium	medium
Commitment	low	low
Integration time	low	low
Communication	low	low
Requirements	low	low

Meeting with the customer

The comments our customer had to our status after the first cycle:

- He suggested to use the SAL 'Response' class instead of the newly introduced 'Transmittable' class
- He suggested to switch the encoding of the transmission (gzipped XML)
- He agreed to provide an abstract class for a better decoupling of the RMI client

Jochen Braun, Andreas Knirsch, Andreas Seemann
October 10, 2008