

A Java mapping applet for Pioneer 3 AT mobile robots

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To extend our Java based control interface of a Pioneer 3 AT mobile robot, a Java based mapping applet has been developed. The Pioneer 3 AT robot is supported by a C++ based API which can be used via a wrapper (SWIG) with the Java programming language. A moving map with the visualization of live sensor data like laser scanner and ultrasonic sensors are displayed in a web browser window.

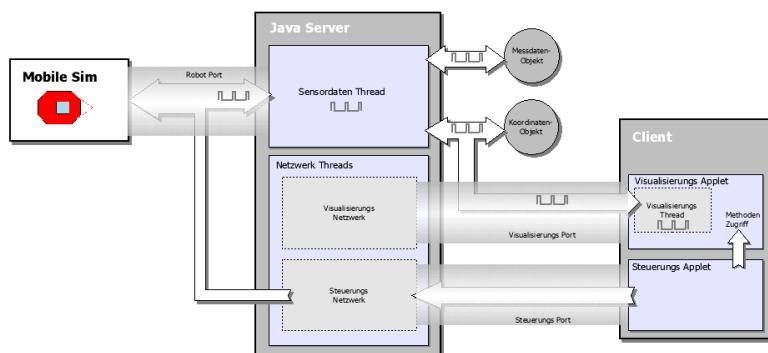


Figure 1: communication structure

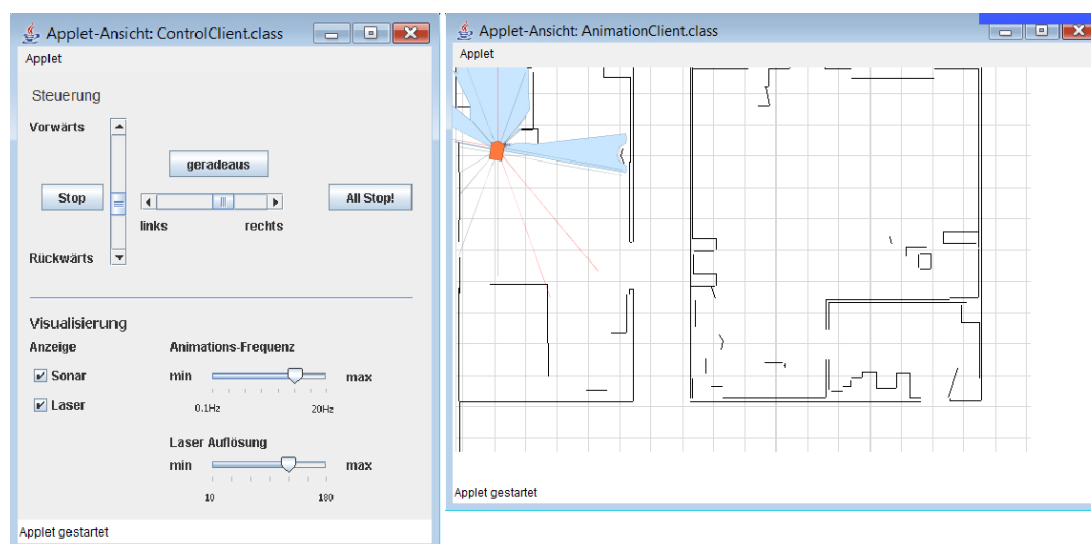


Figure 2: user interface

To establish a real time control, the transmission of control data is separated from the sensor data connection by a thread. A preexisting map image was added by an applet parameter. Initial positions of the robot must be provided by the server application. On server side, a Java application is connected to the robot API. The whole communication process makes use of TCP/IP ports.

- [1] Eckhard Sommer. Ein Java-Interface für einen mobilen Roboter. Diploma thesis, Jul 2009
- [2] <http://www.swig.org>
- [3] <http://prt.fernuni-hagen.de/pro/pioneer/>