

# Verification of the Java Real-Time Capability for the Application in Time-Critical Systems

## Motivation

Real-time programming is an integral part in the development of time-critical systems. The specification of real-time requirements for Java and the respective implementation for compatible real-time capable operating systems enables us to create programs that fulfill strong real-time requirements by using a modern object-oriented language. According run-time libraries are available for the operating systems:

- Solaris 10
- Suse Linux Real Time 10 SP 1
- Red Hat MRG 1.0.

## Task

In the scope of a project that examines the applicability of Java for embedded systems in the safety-critical area, your task is to implement a test framework and respectively a test driver on the basis of the RTSJ, JSR-001 & JSR-282 specification, Solaris and a compatible Java virtual machine. Thereupon, you shall verify system requirements in a case study concerning system behavior during high working load on the one hand and/or the execution of multiple JVMs on a system on the other hand. Finally, you are supposed to document your approach, the applied resources as well as your results.

## Goal

The goal of this thesis is the verification of the Java real-time capability in order to presume and apply it in the further course of the project.

## Fields of Study

- Computer science (Diplom)

## Required Knowledge

- Fundamental knowledge in the programming language Java and Java APIs.

## Student

- Dominik Franke

## Literature

- The Real-Time for Java Expert Group - The Real-Time Specification for Java.
- Java Real-Time auf den Sun Entwicklerseiten.

## Tutor

- [Dipl.-Inform. John F. Schommer](#)

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