

Exercise 4

Modelling Safety-Critical Controllers

Aufgabe 1: Model-checking with UPPAAL

Previously, you had to perform an event-based verification for the controller of the door locking mechanism. In this exercise your task is to do a state-based verification using the UPPAAL tool¹.

Create separate processes for the door system, the laser and the controller. Model the process for the controller closely to the pseudo code given in the lecture slides (pp. 48–49). Specify appropriate verification queries for showing the correctness of the controller. Reveal possible flaws in the implementation and fix it if necessary.

Submit your solution to `florian(at)informatik.uni-bremen.de` and hand in a print-out in the session at Thursday, 17rd of December.

¹<http://www.uppaal.com/>