lea.schoenberger [☺] tu-dortmund.de
nils.hoelscher [☺] tu-dortmund.de
nick.pietrass [☺] tu-dortmund.de
jan.pomplun [☺] tu-dortmund.de

Exercise Sheet 6 (Practice)

(10 Points)

Please note: Solutions must be submitted (individually or in pairs) until 26.11.2018 at 10:00 AM (post box in OH16, basement, in front of room E16). Submitting solutions via mail is *not* possible. Discussion: 28.-30.11.2018.

1 Preparation (3 Points)

Please note: The solution to this assignment must be submitted!

Previous to the exercise session, read chapter 9 of the OSEK manual and chapter 3.2.6 of the OIL specifications. Answer the following questions:

a.) Which objects does an alarm need for the system creation?

b.) What is the difference between ALARMTIME and CYCLETIME?

c.) Let a counter be connected to a the system clock which ticks 1000 times per second. Which value does the counter indicate?

2 Alarm Management in OSEK (7 Points)

In the CI-Lab, choose the virtual machine `es` and log on. Under `media/nfs/es`, the folders `ev3osek` and `05` are located. Copy the folder `ev3osek` to your home directory and the content of the folder `05` into the folder `example`, which is located in `ev3osek`. Switch to the folder `../example/PeriodicRealtimeScheduling`. Here, the file `scheduling.oil` is located in which the following three tasks with a runtime of 2 seconds each are defined:

- Task τ_1: The LED flashes in green.

- Task τ_2: The LED flashes in orange.

- Task τ_3: The LED flashes in red.

For the task priorities, it holds: $\tau_1 > \tau_2 > \tau_3$..

Analyze the .oil file and find out why the schedule given below is not executed. Please modify the file so that it is executed. Finden Sie durch Analyse der .oil-Datei heraus, warum der im Folgenden abgebildete Schedule nicht ausgeführt wird, und beheben Sie das Problem. Please note that the LED flashes in red while EV3OSEK boots. However, the program starts when it flashes in green.
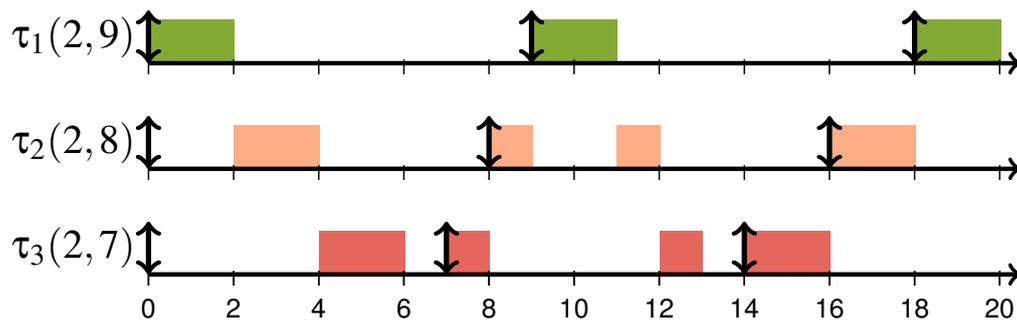
technische universität
dortmund

fakultät für
informatik

CS 12 computer
science 12

Abbildung 1: Expected Schedule.