Saarland University
Department 6.2 - Computer Science
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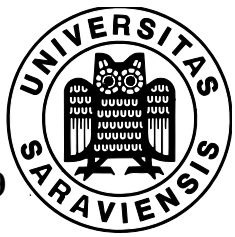

Computer Architecture II - WS 08/09

Exercise Sheet 13 (due: 11.02.09)

Excercise 1: (11 Clocks) (10 Points)
Modify the construction and prove such that we have:

$$off = T \cdot ns \cdot \Delta + 11$$

and show the modifications in the overall correctness theorem.

Hints:

- show for the old construction:

$$\beta_0(r) + 4 \cdot \tau_y \leq \beta_x(r) \leq \beta_0(r) + 15 \cdot \tau_y$$

- for $u \neq 0$ at synchronization time set $f.cycle = off + 4$

Excercise 2: (Inequalites) (5 Points)
For what values of ns and T can the system of inequalites for ns and T be solved?

Excercise 3: (Timer Interrupt) (10 Points)
Design the hardware for the timer interrupt. Recall:

- it is initially off
- it is activated when $f.cycle = T - 1$
- it stays active until cleared by a write to control register INT

You have to resolve the conflict if the write to register INT coincides with cycle $T - 1$.