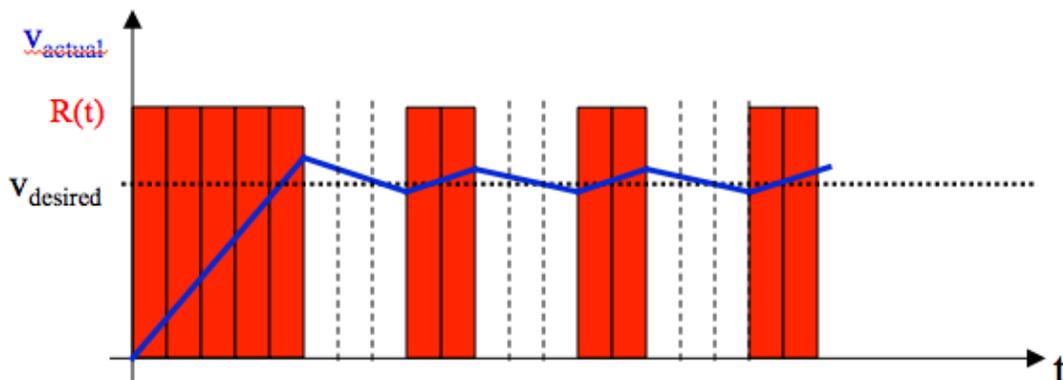Digital and Embedded Systems
Professor Thomas Bräunl

Tutorial 8 – Motor Control in C

1. Implement a complete C program for on-off motor control (bang-bang control).

- The motor output pin is Pin-1.
- The encoder input pin is Pin-2.
- The motor is spinning only in one direction, so no motor direction pin is required and a single encoder input is sufficient.

Note:
- The main program has to initialize ports and start the motor routine using the background timer
- The motor routine reads the encoder, calculates the current speed, then decides whether the motor should be switched on or off.

2. Discuss how this program can be extended to implement a full PID motor controller.