MEDIS – Module 2

Microcontroller based systems for controlling industrial processes

Lab 4.1: Basic timer functions

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Aims of the lab

- Learn use of timer functions

- Programm timer functions

- Enhance control of liquid tank

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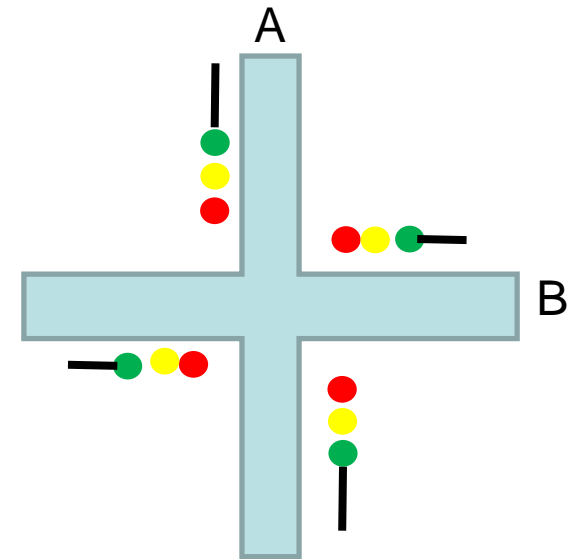# Work orders

1. Check the processing time of the function Serial.println(). Use the function millis() and/or micros() from the Arduino core library. Make a table which shows your results with different amount of text to display.
2. Extend your program from lab #3.2 (3) so that commands to the tank can be given by the Serial interface. Valid commands are:
   - Start / stop filling process
   - Adjust filling levels when emptying or mixing/heating starts
   - Adjust desired water temperature

3. Programm the control of a traffic light at a two way crossing, with pedestrians crossing.
   Pedestrians can force a green light by pressing a button (not earlier than 20 seconds after their direction already had a green phase).
   If the green phase for direction A was longer than 1 minute, the green phase changes to direction B and vice versa.
   Program an output on the serial monitor to visualize your result.

A

B

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Conclusion

1. Know the programming of basic timer functions

2. Deepen knowledge of process control of liquid tank