

# Project meeting | MAS409/MAS411

Date: 15.03.2023

Time: 10:10

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Supervisor: Muhammad Faisal Aftab(MAS411), Martin Marie Choux(MAS409)

## Agenda

- Update on project progress so far
- How to model the motor/drive for SpeedGoat implementation
- HMI guidance. Layout/Submenus
- Controller implementation in the PLC. Cascade control?

### Topic 1: Project update

- Simulink model
- Gantt chart, Distribution of tasks
- Start of the HMI design in TiA Portal

### Topic 2: Motor modeling for SpeedGoat implementation

- How should the motor + drive be modeled? Transfer function? How do we simplify the motor model in Simscape?
- How is the control sequence supposed to work? Is the field-oriented control in Simscape to be replaced with the PID in the PLC or should both be used?

### Topic 3: HMI guidance in TiA Portal

- General guidance of how a good HMI is supposed to work. Is there a general limit of how much information that should be provided? Is it considered good to have an HMI with submodules that include more information, and keep the main HMI as simple as possible?
- Should the HMI be able to tune the PID controller? Meaning that the gains can be modified in the HMI while the system is running, or should these values be inaccessible by the HMI and rather be modified in the PLC program.

### Topic 4: Controller implementation in the PLC

- Is cascade control something to be considered? As both the position and velocity reference of the payload are available. How complex is the implementation of a cascade control in the PLC compared to for example the PID-block(CONT\_C PID) shown in the lectures

- What should be considered when choosing a PID control? Should the PID function blocks in TiA Portal be used or is it better to design a controller from scratch?

## Final comments/ Meeting wrapup

Supervisor comments:

Group comments: