

## Diploma Thesis Review

- supervisor -

**Name of student:** Adam Smialek  
**Thesis topic:** Simulation and control toolkit for small satellite projects  
**Supervisor:** Doc. Ing. Martin Hromčík, Ph.D.

Adam came to me in October 2019. He presented to me his idea of a MATLAB toolbox dedicated specifically to small satellite projects and asked me to supervise such a diploma thesis. When formulating this project proposal, Adam took into consideration his previous experience with small satellite projects he participated in at the Warsaw University of Technology.

I requested Adam to investigate existing related software products, and after some discussions we came to the conclusion that such work makes sense indeed and I agreed to serve as Adam's supervisor in this job. The goal of the diploma project was to build and provide a ready to use open source toolbox for small and low budget satellite projects. The toolbox features allow conducting initial design of spacecraft's attitude determination and control system, providing tools for simulation of spacecraft orbit, testing the feasibility of various actuators and testing effectiveness of various control algorithms in selected case studies. That software allows smaller and inexperienced teams of spacecraft designers to better prepare for design milestones.

In my opinion Adam made a very good job. All essential functionalities have been either programmed by Adam, or adopted using related suitable and generally available software products. The toolkit is intuitive and easy to use and provides interface to other programs and toolboxes the potential users may want to use in companion with Adam's toolkit. I appreciate the quite complex case studies Adam elaborated in order to demonstrate functionality and possibilities of his toolkit. The use cases are motivated by projects where Adam actively participated, and by generally popular and well known recent missions.

Regarding consultations and cooperation with the student, I evaluate it positively also. Although there was a lack in communication during February and March of 2020, caused by Adam's work-related duties and then by the starting covid period, it was established properly by Adam at the right time and I had the chance to formulate my recommendations and objections which Adam promptly addressed. I must say I quite enjoyed the consultations and appreciated the progress of the work, in spite of the fact that things were complicated of course due to the epidemic limitations.

Based on the above arguments, my suggestion is **grade A, excellent**.

2020/08/25

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Date

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Signature