Could you please briefly introduce yourself, your functions, and roles at roboloon, and what roboloon is doing?

At roboloon, we are developing autonomous airship drones to automate the inspection of extensive infrastructure such as power lines, pipelines, and rail tracks. Our airships are almost as light as air due to their helium filling, allowing them to be operated above people with inherent safety. Solar cells enable flight times of entire days, and our patented propulsion system combines the maneuverability of a helicopter with the energy efficiency of an airplane. Deployable at the touch of a button from a network of drone-boxes, our airships will be capable of carrying out fully automated inspection processes in the future.

We are five co-founders who studied mechanical engineering, autonomous systems, cybernetics, computer sciences, and mechatronics at the University of Stuttgart. Together, we have over 30 years of experience in research and product development of automation systems, aerospace software, mechatronic solutions, and entrepreneurship.

Can you give us examples of successful collaborations or projects in which your company and our cluster have been involved? Please briefly outline the context/topic in which you have worked with SimTech.

In the early founding phase of roboloon, we reached out to SimTech for specially talented students interested in writing their master's thesis with us in the field of modeling and simulation. We received a great recommendation, and with the mentoring of Prof. Fehr, the results of the thesis were outstanding. Working together on airships and their flight control motivated the student so much that he wanted to become our co-founder immediately. Convinced of his work and exceptional drive, we were happy to take him on board.

How did the collaboration come about?

Daniel, one of our co-founders, has been friends with Prof. Fehr for many years since they studied Mechatronics together. One day, when Daniel had just begun building up roboloon, Prof. Fehr invited him over for a wonderful summer barbeque. While chatting about their current projects, they discovered a possibility to collaborate.

How would you describe/rate the collaboration and what benefits has it brought?

Technically, it is at the highest possible level. Personally, it is based on a long-lasting friendship. The benefit for roboloon was the best we could hope for: an excellent technical contribution to the foundation of the flight control of our airship and an excellent co-founder for the startup.

Which specific aspects of the cluster have the greatest added value or potential for your company? What advantages do you see for your company and your projects in a partnership with our cluster?

Talented students and excellent mentoring from the professors have helped a lot. The expertise of the SimTech cluster, particularly in the area of rigid body and multibody dynamics, helped us develop our model-based flight control and our software-in-the-loop environment. We see great potential for further model-based approaches in cooperation with SimTech for additional modules of our autopilot, as well as for the design and development of new airship drones with energy-optimized propulsion concepts. We also had a booth at the last SimTech Days, which was a great opportunity to connect with students.

How would you like to shape or improve future cooperation with our cluster?

We would like to continue working together with students and their mentoring professors in the scope of their internships, theses, or other projects.

Are there specific areas or topics in which you can imagine closer cooperation with our cluster?

We see potential in the modeling and simulation of flight physics, control, and design of airships.

Written interview with Dr. Daniel Wibbing, Co-Founder of roboloon