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UNIVERSITY OF WARSAW ROVER TEAM - THE CHALLENGES AND BENEFITS OF
LONG-TERM, HANDS-ON TECHNICAL PROJECTS FOR NON-ENGINEERING STUDENTS

Abstract

Since 2007 the Mars Society has been running a yearly student competition called the University Rover Challenge (URC). In the URC student teams are tasked with designing and constructing a small (up to 50 kg) remotely controlled rover, which is subsequently used to compete in a wide variety of tasks at a desert in Utah, USA. The competition is meant to simulate a Mars colony scenario, where rovers are remotely controlled from the hab and used to assist astronauts in the field. Thanks to the success of the URC, similar competitions are now being held in Poland, India and Canada.

Since its inception, the URC has led to the creation of over 100 student rover teams at universities across the globe. One of those teams is the University of Warsaw Rover Team (UWRT). The team was created in December 2014 at the Faculty of Physics of the University of Warsaw, Poland and has been active since. As of March 2018 the team consists of over 25 members and operates on budget of about 60 000 EUR.

The UWRT is exceptional among others in that it is based at a non-technical university and as a result contains no engineering students. The team's membership consists of students of Physics, Computer Science, Biology, Geology and Chemistry. Furthermore the team has to operate with extremely limited guidance, as the University lacks faculty with relevant technical expertise. This situation has led to a unique set of challenges, as well as benefits for both the involved participants and the University.

This paper will discuss activities of the UWRT, from its inception to the present day. Focus will be placed on the challenges faced by the team along the way, lessons learned, benefits for the participating students and the project's impact on the Faculty of Physics and the University as a whole.