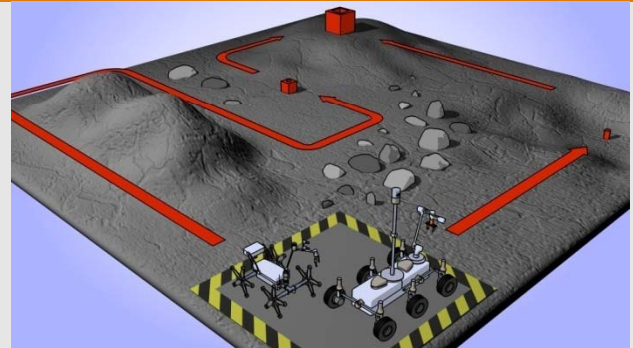


DLR SpaceBot Cup: ARTEMIS

Autonomous Rover Team for Exploration and Manipulation



Official Logo of the DLR SpaceBot Cup



Skizze des SpaceBot Szenarios und technische Lösung durch das zu entwickelnde Multirobotersystem

What is the DLR SpaceBot Cup?

The SpaceBot Cup is a robotic competition offered by the Space Administration of the German Aerospace Center (DLR). The challenge of the competition is to develop a robotic system which is able to perform tasks that are derived from a typical exploration scenario on a planetary surface. The system has to semi-autonomously locate, identify, and transport objects in a difficult terrain to finally integrate them into an overall system. The competition will be held in November 2013 under the auspices of the Federal Ministry of Economics and Technology. A total of ten teams will compete, each promoted with a maximum funding of 50.000 €.

Goals

The goal of the team "ARTEMIS" of the DFKI Robotics Innovation Center and the University of Bremen is the development and construction of a robotic system which is able to meet the requirements and successfully complete the tasks of the Spacebot Cup defined by the DLR Space Administration. The motivation in participating is a boost in innovation, the opportunity to demonstrate the capabilities gathered at the institute for positioning in the German technology and research landscape, and the acquisition of partners in aerospace and comparable terrestrial fields of applications.

Solution

The team intends to solve the challenges of the competition with a heterogeneous team consisting of two exploration robots (see figure) and custom software solutions for navigation, planning, manipulation and runtime monitoring. Both systems will have the capabilities for autonomous navigation, mapping and manipulation and will deal with the tasks cooperatively. Due to the short duration of the project there is a strong demand to reuse already existing and proven partial solutions in the field of mechanics, electronics and software.

Duration: 01/03/2013– 30/11/2013

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