

Czech Technical University in Prague
Faculty of Electrical Engineering
Department of Control Engineering

BACHELOR PROJECT ASSIGNMENT

Student: **Vojtěch Kabelka**

Study programme: Cybernetics and Robotics
Specialisation: Systems and Control

Title of Bachelor Project: **Topological Exploration and On-line Terrain Classification for Hexapod Walking Robot**

Guidelines:

1. Familiarize yourself with adaptive motion control [1], and terrain classification method [2] for the hexapod walking robot. 2. Develop a wall-following control strategy for the hexapod walking robot. 3. Proposed and develop a method for topological exploration of the terrain types based on wall-following and terrain classification. 4. Verify the proposed approach experimentally using the real hexapod walking robot.

Bibliography/Sources:

[1] J Mrva, J Faigl: Tactile sensing with servo drives feedback only for blind hexapod walking robot. RoMoCo 2015: 240-245 [2] J Mrva, J Faigl: Feature Extraction for Terrain Classification with Crawling Robots. ITAT 2015: 179-185

Bachelor Project Supervisor: doc. Jan Faigl Ing., Ph.D.

Valid until the summer semester 2016/2017

L.S.

prof. Ing. Michael Šebek, DrSc.
Head of Department

prof. Ing. Pavel Ripka, CSc.
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Prague, February 1, 2016