

# Project proposal

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Title: **MOTOR CONTROLERS DESIGN**  
Supervisor: André Hodder  
Timeframe: Fall 2021

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EPFL Xplore is an interdisciplinary project whose aim is to design and develop a Rover to participate in two international competitions: the University Rover Challenge and the European Rover Challenge. To make the rover and the robotic arm moving, motors and controllers from maxon are used.

## Project description

### Problematic

The basic idea is to develop controllers capable of controlling multiple motors instead of using those from maxon to reduce the costs and the bulk. The student will compare the efficiency between using brushed vs brushless DC motors. Then he will develop the corresponding electronics (computation, driver, power) to control the motors. The number of motors to control per board as well as all other requirements will be discussed directly with the student.

### Required skills

MT/Robotics/EL master student

Skills on Altium would be preferable, but a strong motivation to learn will also help.

### *Recommended lecture:*

« Commande embarquée de moteurs » A. Hodder & C. Koechli

### Contact

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