

Project proposal

Title: Kalman Filter Design for Rover State
 Supervisor:
 Timeframe: Fall 2020

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. The rover being a mobile platform, a high precision of its position is required for an optimal control, whether it be by the operator or the autonomous system itself. To enable such a precision, a Kalman Filter has to be designed.

Project description



Problematic

The student will have to choose the sensors necessary for the acquisition of the rover's position (Hardware task) and design a Kalman Filter for a precise tracing of its position and velocity (Software Task).

The student may use any sensor that is deemed necessary for this task as long as the total cost does not exceed 200 CHF. Note that no GPS will be used onboard the rover, a local coordinate system will be used based on the starting point of the mission.

The testing tool of the Kalman Filter shall be developed by the student also.

Contact

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