Drive System Design Specification, Miles Grist, May 2021

v1.1

Motors

1. Efficient drive of motors
    - Conserves limited battery power
    - Based on the most efficient operating point of the motors and the dual H-bridge
2. Accurate speed/distance control
    - The rover must move precisely in order to avoid obstacles and map the environment to a high precision
    - There should be some noise rejection built into the system to account for external forces on the rover or wheel slippage
3. Accurate rotation control
    - Any small error will manifest in a large error in position calculation
4. Interface for external control via the control subsystem
    - Receive commands to move in a straight line, rotate or stop
    - Response to commands should be fast and robust

Optical Flow Sensor

1. Accurately record distance moved
    - Required to map the position of the rover and obstacles
2. Make data available for the control subsystem
    - Provide current global position of the rover relative to the starting point