

Abstract

Rover is an autonomous or semi-autonomous vehicle that can operate on the surface of a planet. The track in which a rover will thread is known to be unusual, with few of them are steep surfaces. Rover will be build using Raspberry Pi 3 as the platform. The robot will have their control designed to be able to reach a goal using Go to Goal Behavior, and also able to avoid obstacles using the Obstacle Avoidance method. The wheels are controlled using DC Motor with the Differential Drive control model. The feedback from the robot movement will be tracked using INS navigation and will be shown as a plot. The designed rover is able to move on a steep surface with an average heading error of 0.01 rad. The designed is also able to move into the goal while avoiding an obstacle within 1 meter, with the average heading error of 0.48 rad

Keywords: *rover, inertia navigation system, differential drive*