

Review on Real-Time Control Schemes for Wheeled Mobile Robot

M.SAWAL.A.R , MOHAMMED A. H. ALI , SHA'AKMAL S. , A. AZWAN.A.R.

Faculty of Manufacturing Engineering, University Malaysia Pahang, 26600 Pekan,
Pahang

Corresponding author': m.sawal.a.r@gmail.com , hashem@ump.edu.my

Abstract. The purpose of this paper is to review real-time control motion algorithms for wheeled mobile robot (WMR) when navigating in environment such as road. Its need a good controller to avoid collision with any disturbance and maintain a track error with zero level. The controllers is used with and other aiding sensors to measure the WMR's velocities, posture, and interference to estimate the needed torque of mobile robot due to wheel rotating. Four main categories for wheeled mobile robot control that have been found in literature which are namely: Kinematic based controller, Dynamic based controllers, artificial intelligence based control system, and Active Force control. A MATLAB/Simulink software is the main software to simulate and implement control system. The real-time toolbox in MATLAB/SIMULINK are used to receive/send data from sensors/to actuator with existing of real path disturbances.