RFID BASED COLLISON-FREE

INDOOR ROBOT LOCALIZATION

A dissertation submitted in partial fulfillment for the award of the degree of

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IN

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This is to certify that the dissertation entitled "**RFID based collision-free indoor robot localization"** is a bonafide work carried out by Mr. N.S.Raghavan Reg. No. 80808133050, under my direct supervision is submitted in partial fulfillment of the requirements for the award of degree of Bachelor of Engineering in Electronics and Communication Engineering to Anna University of Technology Tiruchirappalli, Tiruchirappalli - 620 024. No part of the project report has been submitted for and degree/diploma or any other academic award anywhere before.

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ABSTRACT

Now a day's robots are used in many applications. Many countries use robots in their industries for doing some important works in order to reduce human efforts. In order to find the location of robots inside a big industry, it is essential for us to localize it in order to verify that whether the robot is working properly in its path or not. Localization of robot is done here using RFID and sensor fusion. RFID is used in the robot in order to find where exactly the robot is and sensor is used in order to make the robot to avoid static as well as dynamic obstacles. RF transceiver is used in the robot in order to transmit the location information to computer.

For localizing the robot we are using RFID. RFID readers in the robot read the tags which are placed in some particular areas only. Once the readers read a tag, it will send location of the robot to pc using RF transceiver. In case of an obstacle being detected by the robot, it will stop its operation with the help of the IR sensor.

In the future the robot can be used to follow a path around the obstacle by using obstacle avoidance algorithm. The infrared sensors used in this project can be replaced with ultrasonic sensors to avoid luminance effects on the sensors.