



## SURVEILLANCE ROBOT USING NI-MyRIO

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### ABSTRACT

This Paper, deals with a new optimized method of building an independent mobile robot with manual and automatic control techniques with wireless mode of control and monitoring, using LabVIEW as the developing platform.

**Keywords:** automatic control techniques, LabVIEW

### INTRODUCTION

To make a surveillance robot by using NI-MyRIO and Wired surveillance to detect objects remotely.

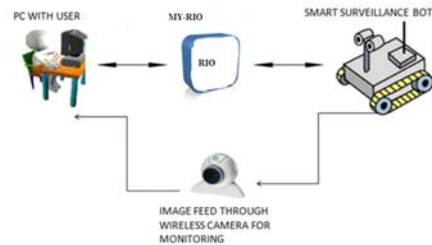
#### Objective:

- To build a cost effective and efficient robotic system, programmed to provide a platform for surveillance purpose, thus acting as a substitute for human in hazardous activities like mining, exploration, patrolling sensitive areas and for various applications that are at a safer distance .
- To impart intelligent control techniques for the robotic platform, so that it's dynamic performance, in varied applications of path and dimensions tracking, can be further developed.
- To monitor the movement of the robot through wireless mode of communication.
- To establish complete transparency of data over the internet.

### PROPOSED SYSTEM :

The four wheeled robot mechanism , employs differential motor speed control. The concept of obstacle avoidance and autonomous movement

is achieved by designing with three IR proximity sensors to detect obstacles and move accordingly based on the “left hand on wall” technique. Wireless transmission technique would be incorporated for data transfer and control from the main station. The monitoring duties would be taken care by the camera mounted in the front and this would be assisted by a head light to provide proper lightning effects.



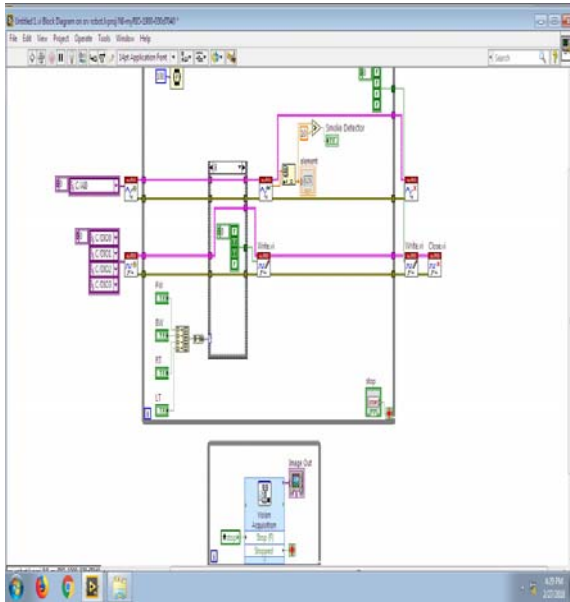
### NI-MyRIO :

- MyRIO is a real-time embedded evaluation board made by national instruments.
- It is used to develop applications that utilize its onboard FPGA and microprocessor.

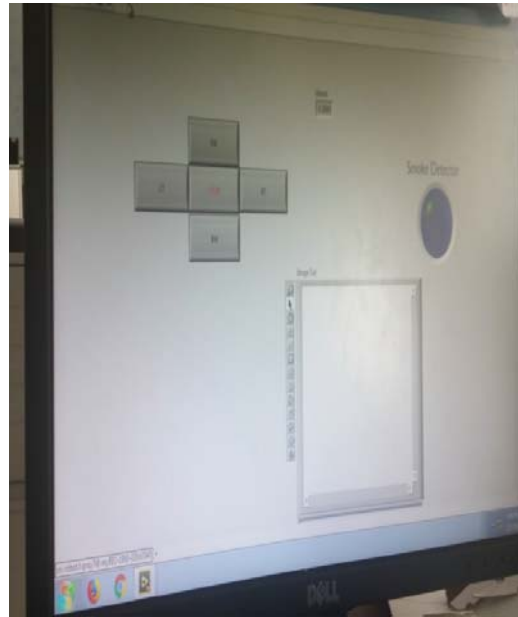
It requires LabVIEW.



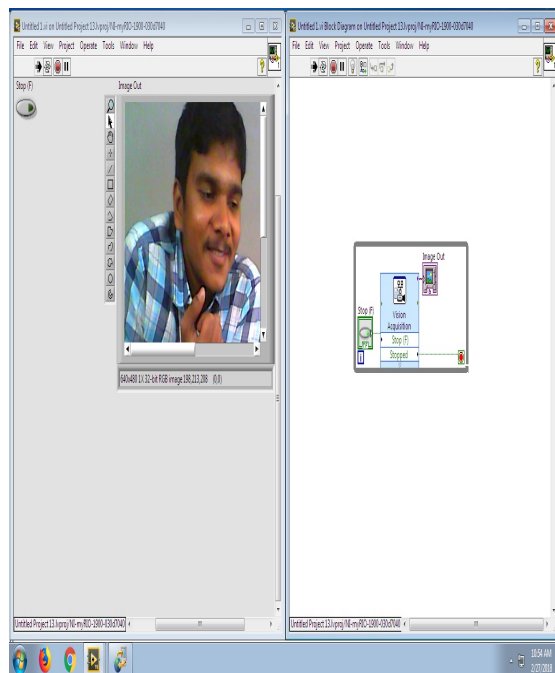
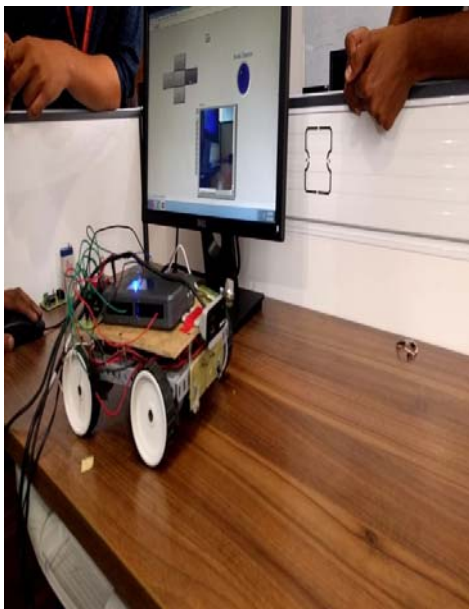
**SOFTWARE CODE:**



**RESULTS:**



**HARDWARE:**



**APPLICATIONS:**

- ⊙ Path finder applications areas inaccessible by humans like mines and damaged buildings.
- ⊙ Dimensional tracking of the area under surveillance and patrolling.
- ⊙ Self guided vehicle for industrial material transportation system in large workspace such as hospitals, container ports etc.

**FUTURE SCOPE:**

- ⊙ In this world of technological advancement and the need to protect precious human lives, the concept of surveillance under supervision will always be 'THE NEED OF THE HOUR'.
- ⊙ The concept of surveillance can be extended to 'Land Mine' detection, just by incorporating a metal detector and high resolution camera along with the robot chasis developed.

- ⊙ In case of fire accident or smoke detection, the robot can be fitted with the respective sensor units, so that the information regarding the hazardous situation can be made available for the people.

**CONCLUSION:**

- ⊙ In this surveillance robot using MyRIO , We have designed a robot for remote surveillance.
- ⊙ This helps us to monitor hazardous and remote locations, where presently the human reach is hard or dangerous.

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