

EIS Project - Report

Phase Wise Plan - Spring 2018

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1 SCOUT BOT

1.1 Group Details: Group 1

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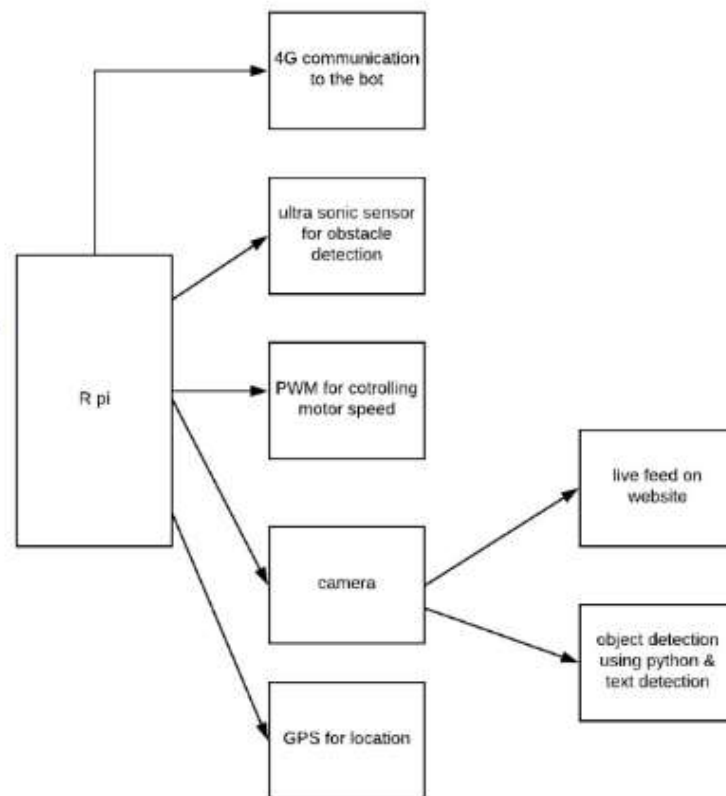
1.2 Abstract

Through this EIS project we propose to prototype a scout bot that could prove to be valuable in the field of defence. The pivoted camera mounted on the car shall be live streaming on the server, and the person controlling the car would be able to see the visual live. The car would be equipped with obstacle detection and GPS, and a mic would be attached to listen in to the environmental sounds. Integrating python library (Tensorflow* maybe changed later) into this embedded system and using object detection using image processing and text detection using OCR would prove to be useful in providing insights about the suspected environment. This prototype would be advantageous beneficial as a defence field work scout bot.

1.3 Justification and the novelty in the selected topic

- A human life is more important than a machine bot. Situations where spy work is required, sending a combatant could be dangerous both for the human soul and the organisation they represent.
- It is a cost efficient and affordable prototype that is easily scalable.

2 Functional Block Diagram connecting the sub-modules of the project



2.1 Hardware and software requirements for the project

Hardware:

- Raspberry Pi 3
- Ultrasonic sensor
- Web camera (compatible with Raspberry Pi 3)
- Microphone
- Servo motors
- Car chassis
- Arduino (if necessary)

Networking:

- GPS module
- GSM module

GUI and Analytics:

- Python Libraries
- Django

3 Phase Wise Implementation

3.1 Phase-I: Outputs for pre-evaluation in the second week of March

- In phase – I we plan to integrate web cam with the raspberry pi and show the live stream on the website
- Website based remote access of the prototype car will be accomplished.

3.2 Phase-II: Outputs for final evaluation

- Object detection using image processing techniques and text detection in OCR from the buffers of the live streamed video of the scout bot.

3.3 Final deliverables of the project

- Live Feed on the server.
- Obstacle Detection.
- Text and Object Detection.
- Alerts in case of Emergency (based on objects detected).