ENGT 4050 Senior Technology Capstone Fall 2014

Group A-5

LifeSweeper Technologies

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Introduction

What is the problem?

What is our motivation?

What is our design/idea?

• Where are we at so far?

Project Overview

- Primary Focus
 - Remote Controlled Vehicle
 - Mine Sweeping
- Team Members
 - Majors
 - Interests

History

- Landmines
 - 110 million in 70 countries
 - 15,000 25,000 killed or maimed each year
- Improvised Explosive Device (IED)
 - 6,802 U.S deaths as of April 2014
 - Half are IED related

Victims

- Time
 - Golden Hour
 - Chances of survival decrease dramatically due to blood loss or shock

Our Project

- Project components:
 - Remotely controlled robot
 - Video feed
 - Detection and Marking

Goals

- Replace a human with a robot
 - out of harms way
 - significant risk
- Intuitive, and easy to manipulate
 - imperative for high stress situations

Parts and Materials

- Raspberry PI Video
- Arduino Uno Motor and Marking
- 3D printer Chassis
- Tablet Control Arduino, View Video

How are they all connected?

Project Breakdown

Phase 1:

Prototype Electromagnet using Arduino

Wireless Camera for Video Feed

Vehicle Prototyping and Design

Phase 2

 Mounting and Combining Phase 1 Components

Android App for Controlling the Vehicle

 Developing a Glow Stick Dropper for Marking System

Phase 3

3D Print Casing for the Vehicle

Combine Final Components

Clean up Design

Implement Extra Features

Where We Are Now

- Metal Detector
 - Home-made vs Pre-made
- Marking Mechanism
 - Hopper
 - Servo Controlled
- RC Car
 - Body

Where We Are Now

- Raspberry Pi
 - Video Camera
- Arduino
 - Wi-fi Controlled
 - Controls Metal Detector and Marking System
- Android App
 - Controller

Sponsors

- [Fuse]Chicken
 - Materials
 - Machines
- Mr. Ron Rich
 - Mechanical Engineering
- SmartShape Design

Conclusion

- What is the problem?
- What is our motivation?
- What is our design/Idea?
- Where are we at now?
- What is next?

Questions?

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