**System Requirements**

**Specifications for Volt & Pepper System (VPS)**

Sponsor

**The Department of Electrical, Computer, Software & Systems Engineering at Embry-Riddle Aeronautical University**

Last Updated September 30, 2014

**Volt & Pepper Development Team**

**Abstract**:

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# Revision History

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| --- | --- | --- |
| **Date** | **Reason for Change** | **Version** |
| Sep. 30, 2014 | Initial draft of document | 0.0.1 |
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# Introduction

## Purpose

## Scope

## Team Roles

The following table presents all members of the Volt & Pepper System Development Team (VPSDT) and respective role assignments. Each member is accountable for the overesight and advancement of the positions held.

Table 1—Team roles

|  |  |
| --- | --- |
| **Name** | **Role** |
| Nezar Bahksh | Scrum Master |
| Greg Carkin | Development Team |
| Gary Roach | Development Team |
| Brittany Rompa | Prodct Owner  Development Team |

# Decomposition of system

# Budget and Justifications

# Requirements Traceability

# Total System Budget

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| Item Description | Part No. | Fulffilled By | Qty | Unit Price | Shipping | Replacement Cost | Cash Otlay |
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# Requirements

# Functional Requirements

The robot shall traverse the course.

The robot shall remain on the white line, which marks the path of the course, at all times.

The robot shall move to the next challenge once the current challenge is complete.

The robot shall move to the finish line once all challenges are complete.

The robot shall cross the finish line.

The robot shall complete all four challenges, defined as: Simon, Etch A Sketch, Rubik’s Cube and playing card.

The robot shall complete each challenge once.

The robot shall keep track of progress on a challenge.

The robot shall complete the challenges in a sequential matter.

The robot shall execute the challenges one at a time.

The robot shall complete the Simon challenge.

The robot shall press the activation button on Simon.

The robot shall obtain a pattern from Simon.

The robot shall press the buttons on Simon in a pattern corresponding to the obtained pattern.

The robot shall complete the Etch A Sketch challenge.

The robot shall print “IEEE” on an Etch A Sketch.

The robot shall complete the Rubik’s Cube challenge.

The robot shall rotate one row of a Rubik’s Cube 180 degrees.

The robot shall complete the playing card challenge.

The robot shall obtain one playing card from a deck of cards.

The robot shall complete the course with the playing card.

## Nonfunctional Requirements

The robot shall fit within 1 ft3.

The robot shall be autonomous.

The robot shall remain on the course for 5 minutes.

The robot shall interact with Simon for exactly 15 seconds.

The robot shall complete the challenges in sequence.

The robot shall execute all requirements within 5 minutes.

The robot shall press the buttons on Simon before Simon outputs an error tone.

The robot shall fulfill the competition safety regulations.

The robot shall contain nonflammable substances.

The robot shall not damage the course.

The robot shall do no harm.

The robot shall shut off in case of emergency.

The robot shall operate with an on-board power supply.

# A. Appendicies

## A.1. Appendix A

# Supplement

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| --- | --- | --- |
| **Entry** | **Definition** | **Alias** |
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# Acronyms & Abbreviations

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| --- | --- |
| **Entry** | **Expanded Phrase** |
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