Christmas Lights Animation

Requirements and Research Document (Concept of Operations)

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Revision History

Date	*Author*	*Version*	*Comments*
12/12/12	*Jordan Doell*	*1.0.0*	*Initial version*

Table of Contents

1.0 Overview

This document will give the reader a good background of knowledge of the requirements and other various details about the Christmas Lights Animation Project. This document is a living document, meaning that it will be added to and revised throughout this project.

1.1 Scope

This document contains stakeholder information, initial user stories, requirements, proof of concept results, and various research task results.

1.2 Purpose of the System

To make an interactive Christmas lights animation product. It will be controllable from an iOS device.

2.0 Stakeholder Information

L-3 is the main sponsor of the project, with June Knight being the contact.

2.1 Customer or End User (Product Owner)

The customer is June Knight of L-3 Communications, who will own all I.P.

2.2 Management or Instructor (Scrum Master)

Dr. McGough will act as Scrum Master for our project. We have sprints in 3 week cycles, with weekly meetings scheduled.

2.3 Developers | Testers

Jordan Doell and Austin Wentz are the developers and testers. Austin has been taking charge of the hardware side, and Jordan is handling the iOS application.

3.0 Business Need

Use this section to define what business need exist and how this software will meet and/or exceed that business need.

4.0 Requirements and Design Constraints

Use this section to discuss what requirements exist that deal with meeting the business need. These requirements might equate to design constraints which can take the form of system, network, and/or user constraints. Examples: Windows Server only, iOS only, slow network constraints, or no offline, local storage capabilities.

4.1 System Requirements

- Sync Christmas lights to music
- Control with an iPhone app

4.2 Network Requirements

- Connect to the system from any wide area network

4.3 Development Environment Requirements

Development for the iPhone app is done in XCode on a Mac. The development for the hardware is done on the Raspberry Pi board.

4.4 Project Management Methodology

The project is managed using the Agile methodology Scrum. The Scrum Master is Dr. Jeff McGough. Sprints are 3 weeks in length and weekly meetings are held. Trello is used for managing the backlog. All parties should have access to the backlog and sprint reports. For this project, there will be 6 sprints. Each sprint is approximately 3 weeks in length.

5.0 User Stories

This section can really be seen as the guts of the document. This section should be the result of discussions with the stakeholders with regard to the actual functional requirements of the software. It is the user stories that will be used in the work breakdown structure to build tasks to fill the product backlog for implementation through the sprints.

This section should contain sub-sections to define and potentially provide a breakdown of larger user stories into smaller user stories.

5.1 User Story #1

The user would like to be able to sync Christmas lights to music and control it with an iPhone.

5.1.1 User Story #1 Breakdown

Does the first user story need some division into smaller, consumable parts by the reader? This does not need to go to the level of actual task definition and may not be required.

5.2 User Story #2

User story #2 discussed.

5.3 User Story #3

User story #3 discussed.

6.0　Research or Proof of Concept Results

There has been quite a bit of research involved for this project. Jordan has not had any previous experience developing an iPhone app, so has been going through a podcast on iOS development. Austin has had to research different SSR's and controllers and how to solder them together. Also, he has had to learn about using the Raspberry Pi board, along with controlling the lights with software.

Appendix I: Supporting Material

This document might contain references or supporting material which should be documented and discussed in appendices. This material may have been provided by the stakeholders or it may be material garnered from research tasks.