Christmas Lights Animation

Requirements and Research Document (Concept of Operations)

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Revision History

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| **Date** | **Author** | **Version** | **Comments** |
| 12/12/12 | Jordan Doell | 1.0.0 | Initial version |
| 4/20/13 | Jordan Doell | 1.1.0 | Updated user stories and other sections |

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# 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.

## Scope

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

## Purpose of the System

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

# Stakeholder Information

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

## Customer or End User (Product Owner)

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

## 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.

## 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.

# Requirements and Design Constraints

The XBMC plugin will run on most platforms. The iOS application will run on most iPhones, iPads, and iPod Touches. For the iOS app to work, the device must have an internet connection. Also, the server and machine running XBMC will also need an internet connection. The server will need a static IP address as well.

## System Requirements

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

## Network Requirements

* Connect to the system from any wide area network

## Development Environment Requirements

Development for the iPhone app is done in XCode on a Mac. The development for the hardware is done on a Windows pc. Most platforms should work as long as Python is able to be run on the system.

## 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.

# 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.

## User Story #1

The user would like to be able to sync Christmas lights to music.

### 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.

## User Story #2

The user would like to control the system on an iPhone.

# 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, he has gone through several podcasts and examples to learn Objective-C programming and using the XCode IDE. 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.

* + - 1. 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.