Vision and Scope Document

for

Interactive Projection Mapping

Version 1.0

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Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
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|  |  |  |  |

# Business Requirements

The project will supplement an architectural projection mapping prepared by Jean Jacques Gaudel for the UAB Alys Stephens Performing Arts Center. The project shall be limited to the two large projectors used for the main presentation. The project presentation must take less than 20 minutes. The project shall be an interactive program that any person(s) could control. The program shall be executable from multiple platforms.

## Background

Projection mapping uses large, bright projectors to map 3 dimensional points to a 2 dimensional plane, i.e. projecting computer graphics on the side of a building. Architectural Projection Mapping uses the façade of a building as a canvas for artwork, media, etc.

## Business Opportunity

The project is a joint opportunity with the UAB Alys Stephens Center. The presentation will be given to an audience of multiple demographic backgrounds. The presentation will increase the exposure of the UAB Department of Electrical and Computer Engineering.

## Business Objectives and Success Criteria

The program will provide extra presentation time for the Architectural Projection Mapping presented by the Alys Stephens Center. The controls should be simple enough that any member(s) of the audience could interact with the program with little or no training.

## Customer or Market Needs

The interface of the program must utilize the façade of the Alys Stephens Center. The program will be run from a Mac computer. A Microsoft© Kinect® shall be used as the controller. An Atari-like joystick may also be used as a backup controller. The entire program should be executable in less than 20 minutes.

## Business Risks

1. Less than 1 year to complete presentation
2. Using open source libraries to control proprietary hardware (Kinect)
3. Will need custom graphics to match building facade

# Vision of the Solution

Games should be designed and programmed to run within a 2-4 minute time span allowing for multiple players for a 20 minute presentation. Only two or three games should be available to for selection.

## Vision Statement

The Interactive Projection Mapping will provide a fun and engaging experience for a large audience as a supplemental presentation for Architectural Projection Mapping. The façade of the UAB Alys Stephens Center will be the user interface and physical features of the façade will be part of the interactive environment.

## Major Features

1. Large user interface
2. Utilizes elements of building facade
3. Uses motion tracking as a controller

## Assumptions and Dependencies

1. Projectors and computer will be provided for presentation
2. 20 minute presentation time

# Scope and Limitations

The interactive project will consist of two to three games, each of which will be playable within a two to four minute time limit. The interface for the program will utilize the façade of the UAB Alys Stephens Center for the display and a Microsoft© Kinect® as a controller.

## Scope of Initial Release

The initial release shall use a simple computer monitor or projector for the display interface. The Kinect® should be working as a controller for the initial release.

## Limitations and Exclusions

<Identify any product features or characteristics that a stakeholder might anticipate, but which are not planned to be included in the new product.>

# Business Context

There are no plans to sell this program. This program is meant to be free for Jean Jacques Gaudel to use during his program at UAB Alys Stephens Performing Arts Center.

<This section summarizes some of the business issues around the project, including profiles of major customer categories, assumptions that went into the project concept, and the management priorities for the project.>

## Stakeholder Profiles

<Stakeholders are individuals, groups, or organizations that are actively involved in a project, are affected by its outcome, or can influence its outcome. The stakeholder profiles identify the customers for this product and other stakeholders, and states their major interests in the product. Characterize business-level customers, target market segments, and different user classes, to reduce the likelihood of unexpected requirements surfacing later that cannot be accommodated because of schedule or scope constraints. For each stakeholder category, the profile includes the major value or benefits they will receive from the product, their likely attitudes toward the product, major features and characteristics of interest, and any known constraints that must be accommodated. Examples of stakeholder value include:

* improved productivity
* reduced rework
* cost savings
* streamlined business processes
* automation of previously manual tasks
* ability to perform entirely new tasks or functions
* conformance to current standards or regulations
* improved usability or reduced frustration level compared to current applications

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stakeholder** | **Major Value** | **Attitudes** | **Major Interests** | **Constraints** |
| Artist | Provides graphics necessary for project |  |  |  |
| ASC Staff | Provides Projectors | highly receptive, but expect high usability |  | must run on low-end workstations |
| Programmers | Write source code and amalgamate modules | Programmers are UAB students; they may not have a lot of time for development |  | Time commitment |
| UAB ECE faculty |  |  |  | no budget for retraining |

## Project Priorities

|  |  |  |  |
| --- | --- | --- | --- |
| **Dimension** | **Driver (state objective)** | **Constraint (state limits)** | **Degree of Freedom (state allowable range)** |
| Schedule | release 1.0 to be available by 8/1/12, release 1.1 by 11/1/12  release 1.2 by 2/1/13 |  |  |
| Features |  |  | 70-80% of high priority features must be included in release 1.0 |
| Quality |  |  | 90-95% of user acceptance tests must pass for release 1.0, 95-98% for release 1.1 |
| Staff |  | maximum team size is 7 developers/testers |  |
| Cost | $0 | $0 |  |

## Operating Environment

The programming will run on a Mac computer using two projectors for the display. The presentation will take place outside the Alys Stephens Center. The audience is expected to consist of people from multiple demographic backgrounds, but mostly with an artistic interest.

The Mac OSX machine will be expected to have an Intel processor, greater than 1 GHz CPU clock, and greater than 1 GiB of RAM.