

Redefining the Use of Augmented Reality

Project Plan

Version 4.0 10 August 2015

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0.0 Version History

VERSION 1.0

Version 1.0 is the original version of the Project Plan Document. This version of the document was created as part of the Project Proposal Version 1.0.

VERSION 1.1

Version 1.1 has been changed to address the recommendation provided by the AUT project marking team. The log of changes is below:

Section	Overview of Changes	Date
Title Page	Updated version number and date.	06/05/15
2.0	Work Breakdown Structure changed to better show the iterative process of XP development.	14/04/15
3.1	Project Schedule revised to reflect the reduced number of hours remaining to complete the project.	14/04/15

VERSION 2.0

Version 2.0 reflects the plan proposed in the Change Statement 1 document. This plan changed the scope of the project to, instead, be focused on creating a 'wayfinding' application as specified by Auckland City Council.

Section	Overview of Changes	Date
Title Page	Updated version number and date.	27/05/15
1.0	High Level Overview changed to reflect the new project plan.	15/05/15
2.0	Work Breakdown Structure changed to reflect the new project plan	16/05/15
3.0	Project Schedule revised to reflect the reduced number of hours remaining to complete the project and the new project stages. Milestones changed to reflect the new project milestones.	27/05/15
4.0	Scope changed to reflect the new project plan.	16/05/15

VERSION 3.0

Version 3.0 reflects the plan proposed in the Change Statement 2 document. The project plan was changed back to an altered version of the original plan after contractual negotiations with the Auckland City Council regarding the 'wayfinding' application fell through. This new plan reflects the revised approach and reduced timeframes.

Section	Overview of Changes	Date
Title Page	Updated version number and date.	22/07/15
1.0	High Level Overview changed to reflect the new project plan.	15/07/15
2.0	Work Breakdown Structure changed to reflect the new project plan	17/07/15
3.0	Project Schedule revised to reflect the reduced number of hours and the new project stages.	21/07/15
4.0	Scope changed to reflect the new project plan.	20/07/15



VERSION 4.0

Version 4.0 reflects the plan proposed in the Change Statement 3 document. The project plan shifted scope from creating a full Augmented Reality platform to, instead, be focused on creating Unity plugins. The plugins would later be used by Luminary's development team to produce the completed platform.

Section	Overview of Changes	Date
Title Page	Updated version number and date.	10/08/15
1.0	High Level Overview changed to reflect the new project plan.	07/08/15
2.0	Work Breakdown Structure changed to reflect the new project plan	09/08/15
3.0	Project Schedule revised to reflect the reduced number of hours remaining to complete the project and the new project stages. Milestones changed to reflect the new project milestones.	07/08/15
4.0	Scope changed to reflect the new project plan.	09/08/15



1.0 High Level Overview

1.1 Augmented Reality Platform Plugins

Luminary Promotions have been in recent contractual negotiations with the Auckland City Council. The Council were exploring the idea of creating a 'wayfinding' application that would help tourists navigate through Auckland City. The negotiations have stalled as the Council currently feels that creating the application would be too "high risk." Luminary would like to produce a prototype of the application to demonstrate its potential to the Council.

As the time remaining is less than ideal, the scope of the project is limited to creating two prototype Unity plugins. The first, and most important, of the plugins is a GPS Service plugin which will allow the adding and modifying of GPS nodes. It will provide information about the user's current location and allow the displaying of nearby GPS nodes. The second plugin is an Asset Bundling plugin. This plugin will communicate with Luminary's servers, retrieving updates and allowing the streaming of content.

A prototype application will be used for development, testing and demonstration, but this project does not cover the creation of the final Augmented Reality platform.

1.2 Phase One: Requirements Elicitation & Specification

Phase One will be the requirements elicitation and specification phase. Requirements will first be elicited from Luminary as a feature 'wish list.' The group will leverage their prior background research of Augmented Reality technology to ask provoking questions, in order to create a full requirements list.

Bigger requirements will be broken down into their smaller counterparts. The small, specific requirements will be rewritten in a standardised format. After being confirmed by Luminary, the requirements will be prioritised. It is essential that this phase is completed in one week due to the extreme time constraints.

1.3 Phase Two: Development Preparation

Phase Two will include all preparation tasks required prior to development. The scope and expectations of the project must be completely understood by both the client and the group. An agreement will be signed by both parties to ensure mutual understanding.

Whilst this agreement is being prepared, other members of the group will perform specific research around XP development practices. The XP development practises used in Phase Three will be tailored to the dynamic of the group and project. This phase must be completed in only one week.

1.4 Phase Three: Development

Phase Three will be the development phase of the application, in accordance to the approved Requirement Specification document created in Phase One, and contractual agreement created in Phase Two. We will follow the Extreme Programming methodology, refined in Phase Two, for the planning, execution and evaluation of the software system.

Phase Three will result in a working prototype of the two Unity plugins for further development by Luminary Promotions.

The exact timeframes for Phase Three will be determined by the length of Phases One and Two, but the expected overall duration of Phase Three is 9 weeks.



2.0 Work Breakdown Structure

Disclaimer: The processes stated are indicatory only and subject to change later into development. It can be expected that some sub-processes cannot yet be accounted for.

Below is a high-level work breakdown structure in tabular form with PMI numbering:

- 1. Phase One: Requirements Elicitation & Specification
 - 1.1. Elicit requirements 'wish list' from Luminary
 - 1.1.1. Gather preliminary requirements
 - 1.1.2. Provoke further requirements
 - 1.2. Break large requirements down into smaller counterparts
 - 1.3. Rewrite requirements in a standardised format
 - 1.4. Confirm the gathered requirements with Luminary
- 2. Phase Two: Development Preparation
 - 2.1. Research of XP Development (based on Action Research Methodology)
 - 2.1.1. Plan
 - 2.1.2. Act
 - 2.1.3. Observe
 - 2.1.4. Reflect
 - 2.2. Establish scope and expectations of the project (concurrent with 2.1)
 - 2.2.1. Establish a priority hierarchy for the requirements
 - 2.2.2. Agree on the priority of each requirement
 - 2.2.3. Agree on which requirements are to be developed as part of the project
 - 2.3. Create a contractual agreement with Luminary (after 2.2)
 - 2.3.1. Create a draft contract
 - 2.3.2. Get supervisor approval, make any required changes
 - 2.3.3. Discuss contract with the client, many any agreed changes
 - 2.3.4. Ensure each party signs the contract and is in full agreement and understanding
- 3. Phase Three: Development (based on Extreme Programming Methodology)
 - 3.1. Execute Development Iteration (repetitive process)
 - 3.1.1. Plan
 - 3.1.2. Design
 - 3.1.3. Coding
 - 3.1.4. Testing
 - 3.1.5. Evaluate (Listening Through Feedback)
 - 3.1.6. Return to 3.1



3.0 Time Management

3.1 Project Schedule

Disclaimer: This project schedule is indicatory only and subject to change. It is to be interpreted as a high-level overview of the project tasks only and will be refined later into development.

Each project team member will work 10 hours per week during working weeks. A reduced number of hours will be worked during break weeks, as decided by the group on a case-by-case basis. Development tasks may be scheduled during break weeks, but meeting duration and frequency will likely be reduced during these times.

Project Start Date: 10 August 2015 (week 1) Project End Date: 25 October 2015 (week 11)



· Phase One: Requirements Elicitation & Specification

Duration: 2 working weeks

- Start Date: 10 August 2015
- End Date: 16 August 2015

· Phase Two: Development Preparation

Duration: 1 working week

- Start Date: 17 August 2015
- End Date: 23 August 2015

· Phase Three: Development

Duration: 7 working weeks + 2 weeks during breaks with reduced work hours

- Start Date: 24 August 2015
- End Date: 25 October 2015

3.2 Milestones

Each of the three phases' end dates will be considered a major milestone of the project, as will the project start date and end date. As the phases are broken into smaller sub-processes, minor milestones will be set during each phase (especially during development — Phase Three).

These milestones will be agreed with the supervisor and client, and will usually result in a deliverable of some description. The final deliverables of each phase are crucial for the following phase, with Phase Three resulting in the completed project.



4.0 Scope

The project is split into three phases: a requirements elicitation and specification phase, a development preparation phase and a development phase. The result of the requirements elicitation and specification phase and development preparation phase will determine the scope of the development phase.

The development preparation phase includes the creation of a contractual agreement. This agreement includes parameters of the scope and expectations of the project, based on the requirements gathered in the first phase. It is expected that the final Unity plugins produced will be working prototypes only. Luminary will further develop the plugins following the project.

Disclaimer: The information below is a current, incomplete view of the scope as of 10 August 2015. The scope of the developed phase will be determined by the result of Phases One and Two.

4.1 Objectives

We aim to create the following two Unity plugins which act as working prototype/proof of concept:

- A GPS Service plugin which:
 - Implements Augmented Reality to display nearby GPS markers.
 - Can have GPS markers added, removed and modified at runtime.
- An Asset Bundling plugin which:
 - Enables communication with Luminary's servers.
 - · Allows app updates at runtime.
 - Can stream content from Luminary's servers.

4.2 High-Level Requirements

The high-level requirements of the project are below. The requirements of the plugins will be fully defined in Phase one and refined throughout Phase Two of the project.

- A complete, prioritised requirements specification document needs to be created.
- · An agreement around the scope of the project will be created and signed.
- · Preparatory research of XP development will be performed.
- A working prototype/proof-of-concept of the two plugins will be produced.

4.3 Major Deliverables

Each phase will result in a key deliverable:

- Phase One A complete, agreed requirements specification document.
- Phase Two Focused research of XP development and a contractual agreement about the scope and expectations of the project.
- Phase Three A working prototype/proof-of-concept of the two Unity plugins.

4.4 Boundaries

The boundaries of the scope are as follows:

- We will not be creating the Augmented Reality content or platform. This will be done by Luminary.
- We will not be responsible for marketing the application.
- We will not be creating the Augmented Reality technology itself. Vuforia will instead be used. Our focus will be on the implementation of the technology.
- The plugins will not be of deployable quality as it will be a working prototype only.