**Augmented Reality Game**

**Concept of Operations**

**COP 4331C, Fall, 2015**

Team Name: Project Pals

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| Version | Date | Who | Comment |
| V0.0 | 09/17/15 | Connor Heckman | Original ProjMang |
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Project Overview

Our team is creating an action based augmented reality application for Android mobile OS, complete with networking between players, and a high emphasis on player customization.

Reference Documents

* [Concept of Operations](https://github.com/ericmp/Augmented-Reality-Mobile-Application/blob/master/CONOPS.docx)

Applicable Standards

* Coding Standard: [Java Google Coding Standard](https://google.github.io/styleguide/javaguide.html)
* Document Standard:
* Artifact Standard:

**1.0** The Current System

Most augmented reality applications on the smartphone market are navigation based. (I.E. direction prompts displayed via the application or using the phone’s camera to find discounts and offers at stores). We will be creating an action based augmented reality game (in the style of a first person shooter). There are precious few of these action based augmented realities games available on the current market, but

The current system isolates users and has poor or nonexistent networking between application users.

Current System

* Mostly single player based
* Simplistic UI
* Direct flow upon launching the app (lack of customizable modes)
* No tutorials, learn as you go
* Singular theme

**2.0** Needs

Proposed System Needs

* Networking between users of the application
* Heads up display while in game
* Indirect flow, menu to allow for customization of experience (light settings)
* Tutorial for new players upon download
* Multiple themes for a diverse experience
* Scoreboards and achievement type system
* Variety of enemies per theme (progressing difficulty)

**3.0** Users and Modes of Operation

All users are created equal

Mode of Operations

-Single player operation (no networking)

-Multiplayer (competitive mode)

**4.0** Operational Scenarios

-Describe regular gameplay

-Describe new user experience

-Describe advanced user experience

-Collision problems

-Problems with networking interfering with single player

**5.0** Operational Features

Must Have

-Networking between users of the application

-Multiple themes for a diverse experience

-Variety of enemies (rising difficulty/sense of progression)

-Scoreboards and some sort of achievement system

-Indirect flow, initial start menu for technical options

Would like to Have

-Heads up display while in game (health bar)

-Tutorial for new players upon download

-Social media status updates

-Challenges to issue between users

**6.0** Expected Impacts

- Increased customization of mobile games

- Larger interest in the commercialization of artificial reality devices

**7.0** Analysis

Expected Improvements

-Better focus on competition between users

-Larger target audience due to variety of themes

- Sense of progression achievement system

- Sense of community (social aspect)

Disadvantages

-Singular platform  
-cyclical play, could become repetitious

-Active gameplay required (have to swivel camera around)  
-Have to use public domain video game market

Limitations

-Inability to integrate true multiplayer mode (no PVP)

-Network effect on enjoyment of game

- hardware limitations

Risks

- Limitation of market  
- Obscures user perception

Alternatives and trade offs

- Avoiding the development fee in mac  
- trade security and quality of app store for numbers in google marketplace