**Portal Games**

**Design Document for:**

TRA: The Unknown

**A Truly Immersing Multiplayer Game**

“Who Plays Campaign Anyway??!!”™

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Version # 1.00

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# Design History

This is a brief explanation of the history of this document.

This is where you can find out the major changes in each of the different versions of the document.

## Version 1.00

The First Version, just filling out the Game Design Template I found, anything is up for grabs.

# Game Overview

## Philosophy

### Philosophical point #1

TRA: The Unknown is trying to give a truly 3d dimensional multiplayer experience. Any given situations will have multiple ways to come out victorious.

### Philosophical point #2

The Game will be Multiplayer only, ensuring the highest possible Multiplayer Quality (plus we don’t have to write a pesky script).

### Philosophical point #3

Spectators can have fun too! The game will feature cool little features that allow spectators to see the game play as if it was a TV broadcasted Football Game from ESPN.

## Common Questions

### What is the game?

A Multiplayer ONLY, First Person Shooter. The game will include features for commentary, editing game types, and watching games in theater. The game play online will allow a New Player to get into the game and a Pro player to enjoy the game. The game will feature a learning curve that players must go through to be the BEST. Spectators will be able to watch other players play and look at more advanced player’s tactics. There are able to use a mini map to see player’s positions throughout the game. Furthermore, players can review their played games using a Theater Mode, which uses saved game data for reviewing. The use of technology allows players to solve encounters in numerous ways, while encouraging teamwork.

### Why create this game?

Primarily, to learn and have fun, Game development can be fun and entertaining, getting over pitfalls is a learning experience.

Second, to provide the first game that will transcend traditional barriers, Spectators can have fun watching the game, Pro’s can play competitively, and players that are more casual can sit down and have fun with their friends.

Lastly, to set the stage for another game (with a story line), using the multiplayer game under the premise that the last game had been a training simulation. The real threat… aliens. This will allow an expansion of the sandbox, but that is unimportant for now (on to the Design!).

### Where does the game take place?

The game takes place on Earth in several training facilities and other buildings/sites used for training.

### How many characters can I control?

Well one character per game, your default character will be the automatic choice. You can be any of four armor/character classes:

Light

Normal

Heavy

Captain

See the concept document for more information of each class.

### What is the focus?

Competitive event play, meaning the competitive balancing of the game, and spectating of that play.

### What is different?

Well according to the template, I am supposed to tell you about the difference between this game and other games that are attempting to do it… well there are none. So that is the difference we are using new tools, new methods, new game play.

### Okay Buddy, what were those “Spectator Features you keep going on about”?

Buddy, huh. Well these features are in the Game Concept document; they allow players to spectate on ongoing games. A little networking blurb:

The game will be using a Host/Peer interaction, the Host will communicate with another Host that hosts the spectator relations.

### How is Online Matchmaking setup?

Well first, there will be a leveling system-using version of Microsoft’s True skill system. Then based on estimated leader board rankings the players receive a title listing their accomplishments. The system will track games won, games lost, and other game stats. The system should also take into consideration players abilities with each class.

Note: When entering a matchmaking game the player must select a player class before entering. This allows the system to match up the most balance selection of player classes instead of a

### How do players communicate?

Players can communicate through using their keyboards, microphones, and the tactical communication system outlined in the Concept Document.

# Feature Set

## General Features

3D Sound System

Doppler Sounds

3D Skeletal Animation

3D Key Frame Animation

Shaders

Network/Lan Play

## Matchmaking/Multiplayer Features

Online 12 Player Multiplayer

Saved Film Theater

Up to 20 Spectators watching a game

Commentary Modes

Cinematic Spectating Cameras

ESPN like Spectating

Easy to find a game

Matchmaking

Voice/Text Chat

Player Ranking

Game type/Setting Editor

## Gameplay

List stuff here that is key to the gameplay experience

List a lot of stuff here

Hey, if you got nothing here, is this game worth doing?

# The Game World

## Overview

Provide an overview to the game world.

## World Feature #1

This section is not supposed to be called world feature #1 but is supposed to be titled with some major thing about the world. This is where you break down what is so great about the game world into component pieces and describe each one.

## World Feature #2

Same thing here. Don’t sell too hard. These features should be awesome and be selling the game on its own.

## The Physical World

### Overview

Describe an overview of the physical world. Then start talking about the components of the physical world below in each paragraph.

The following describes the key components of the physical world.

### Movement

Describe how the player moves characters around in the world.

### Scale

What Scale Does the World Use

### Objects

Describe the different scenic objects that can be found in the world.

See the “Objects Appendix” for a list of all the objects found in the world.

## Rendering System

### Overview

Give an overview of how your game will be rendered and then go into detail in the following paragraphs.

### 2D/3D Rendering

The XNA framework will allow a 3D engine to be built. The XNA framework will handle most of the rendering work. Pixel and Vertex shaders will add to the realism of the world. Use Cone Step Mapping and Normal Mapping. Normal Mapping for smaller details and Cone Step Mapping for the bigger ones.

## Camera

### Overview

The Camera is a simple FPS camera attached at the player’s head level. The Camera will have a small amount of auto aim. The camera will be a perspective camera used to make the game look 3D. Objects

### Camera Detail #1

The camera will move around like this and that.

### Camera Detail #2

When the player is holding a mini-gun

## Game Engine

### 

### Overview

Describe the game engine in general.

### Game Engine Detail #1

The game engine will keep track of everything in the world like such and such.

### Water

There will be water in the world that looks awesome and our game engine will handle it beautifully. This is just placeholder text, replace it with other another detail.

### Collision Detection

Our game engine handles collision detection really well. It uses the such and such technique and will be quite excellent. Can you see I am having a hard time making up stupid placeholder text here?

## Lighting Models

### Overview

Describe the lighting model you are going to use and then go into the different aspects of it below.

### Lighting Model Detail #1

We are using the xyz technique to light our world.

### Lighting Model Detail #2

We won’t be lighting the eggplants in the game because they are purple.

# The World Layout

## Overview

Provide an overview here.

## World Layout Detail #1

## World Layout Detail #2

# Game Characters

## Overview

Over of what your characters are.

## Creating a Character

Tell about the different tags each player must have, like where the gun goes, position of gun, etc…

## Character Classes

Describe the character classes here.

# User Interface

## Overview

Provide some sort of an overview to your interface and same as all the previous sections, break down the components of the UI below.

## User Interface Detail #1

## User Interface Detail #2

# Weapons

## Overview

Overview of weapons used in game.

## Weapons Details #1

## Weapons Details #2

# Musical Scores and Sound Effects

## Overview

This should probably be broken down into two sections but I think you get the point.

## Red Book Audio

If you are using Red Book then describe what your plan is here. If not, what are you using?

## 3D Sound

Talk about what sort of sound APIs you are going to use or not use as the case may be.

## Sound Design

Take a shot at what you are going to do for sound design at this early stage. Hey, good to let your reader know what you are thinking.

# Training Videos

## Overview

Describe the single-player game experience in a few sentences.

Here is a breakdown of the key components of the single player game.

## Training Video #1

## Training Video #2

# Multiplayer Game

## Overview

Describe how the multiplayer game will work in a few sentences and then go into details below. What is the expected up and download times for each player. (Host, Normal Player, Spectator, Host Spectator, Commentator…)

## Max Players

12 Players can be in one game and 22 additional spectators in one game. Only players in the same game room can speak with one another.

12 Players – Playing

10 Players – Spectator Room 1

10 Players – Spectator Room 2

## Networking

The game play uses client/server using a group network topology to handle spectators. A peer-to-peer network covers the Voice, tactical communication system and text chats for the players. A peer-to-peer network covers the Voice, Commentary, Commentary Breakdowns, text chat and play pause (and other VCR) commands for the spectators.

Figure - Each Host Box will communicate with the next host box. A Brief Buffer and Delay Time Occurs

The chat for a peer-to-peer network only encompasses the members of one host box. The Host box is in charge of transmitting game data to each player or spectator at its level. The host box controls the peer-to-peer network. Two rooms can exist within a spectator network, one within a game network. Rooms are peer-to-peer networks, which are used for spectator chat, commentary, and game chat, tactical communication and text chats.

## Game Type Editing

How will game types be edited and transmitted to each player

## LAN Play

How does lan play work? How does the lag counter work? What technologies are used.

## Voice Chat/Game Rooms

How does the voice chat work? Describe how the game will function over xbox live, use code snippets if needed. How is lag dealt with, how will packet loss and packets received out of order be dealt with. Do players receive voices of players near them? Is the peer/peer network only for players on a certain team and players near each other or everyone? How is the voice compressed? What is the expected lag time? Update: All the needs to be put here is how proximity voice will work. Microsoft handles all of this.

## Xbox LIVE Functionality

Describe how the game will function over xbox live, use code snippets if needed. How is lag dealt with, how will packet loss and packets received out of order be dealt with. Do players receive less information about players they cant see? What information is sent. Tip: for rapid fire weapons, send a start fire, end fire message. For 1 shot, burst weapons just send when it fires. How will out of sync games be dealt with. How ill the host leaving be dealth with?

Getting Around The XNA 1 game session limit. My Idea: Use a simi peer-to-peer network for all the other spectators, but its really a host network

## Custom

How will custom Games be made since no player invites can be sent (using the LIVE service). A Workaround/Hack must be made

## Spectators

How do spectators deal with a host box leaving. Describe how the game will function over xbox live, use code snippets if needed. How is lag dealt with, how will packet loss and packets received out of order be dealt with. Do players receive less information about players they cant see? What information is sent. Tip: for rapid fire weapons, send a start fire, end fire message. For 1 shot, burst weapons just send when it fires. How will out of sync games be dealt with. How ill the host leaving be dealth with? How do the game rooms work. How does the specatating buffer work

## Saved Films

How is game data saved? Is it possible on the xbox 360 using XNA? How do player watch films together?

## MID Match Joining/Leaving

How do players join in the middle of a match (players will be in play at the start of each new rounds). What happens if a player leaves or a host box leaves (think about spectator players too!) Remember the buffer, so spectator players will continue to transmit to the next host box (if part of the chain is broken) and find a box that can connect to the game host.

# Character Rendering

## Overview

Provide an overview as to how your characters will be rendered. You may have decided to include this elsewhere or break it out to provide more detail to a specific reader.

## Character Rendering Detail #1

## Character Rendering Detail #2

# World Rendering

## Overview

Provide an overview as to how your world will be rendered. You may have decided to include this elsewhere or break it out to provide more detail to a specific reader.

## World Rendering Detail #1

## World Rendering Detail #2

# Extra Miscellaneous Stuff

## Overview

Drop anything you are working on and don’t have a good home for here.

## Junk I am working on…

Crazy idea #1

Crazy idea #2

# “XYZ Appendix”

Provide a brief description of what this appendix is for and then get down to business and provide data to the reader.

Here are a few examples of some of the appendices in my latest design…

# “Objects Appendix”

# “User Interface Appendix”

# “Networking Appendix”

# “Technical Appendix”

# “Character Rendering and Animation Appendix”

# “Matchmaking Appendix”

# “Multiplayer Appendix”

Okay, that’s it. I wanted to spend more time on this and really make it a great roadmap for putting a game design together. Unfortunately it would take a ton of time and that is something that we don’t have enough of in this business. I think you get the idea anyhow. Also, don’t get the impression that I think a design should provide the information in any particular order, this just happened to be the way it fell out of my head when I sat down. Change this template any way you want and if you feel you have improved on it, send it back to me and I can pass it out as an alternative to anyone that asks me in the future.

Good luck and all that!

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