4D World

Design Document

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1. Introduction

1.1. Purpose:

The purpose of this document is to express theoretical designs that should help in the final implementation.

1.2. Scope:

The main purpose of our project is to create the assets needed to create fully working multidimensional worlds with more then 3 spacial dimensions.

1.3. Overview:

This document is a b-s form created as a theoretical prototype. The designs and architecture in this document is complete speculation and may or may not be used in the final product.

2. System Architecture

2.1 System overview

The properties of a 4'th spacial dimension are basically an extension of the 3 normal dimensions. As fully simulating extra depth of dimensions is expensive and complicated, we will be trying to do this in a way that is less taxing. We will be tracking where the player is in the 4'th dimension and rendering objects based on the players position in the phase. This has limits though and will make some 4D tricks complicated or impossible to do. Rendering a series of worlds in parallel will probably be too expensive though.

3. Human Interface

3.1 Key components.
The user needs to be made aware of the 4'th dimension without being overwhelmed by it. With conjunction of controlling the number of 4D objects, we will try to create holographic images of objects the player is near phase with.

We plan to have a phase indicator bar to tell the player where they are in the phase, and give the player obvious limits of phase movement.

With the cursor locked and hidden at the center of the screen, a center target retical should help the player know where center focus is, making it easier to interact with objects.

3.2. GUI example
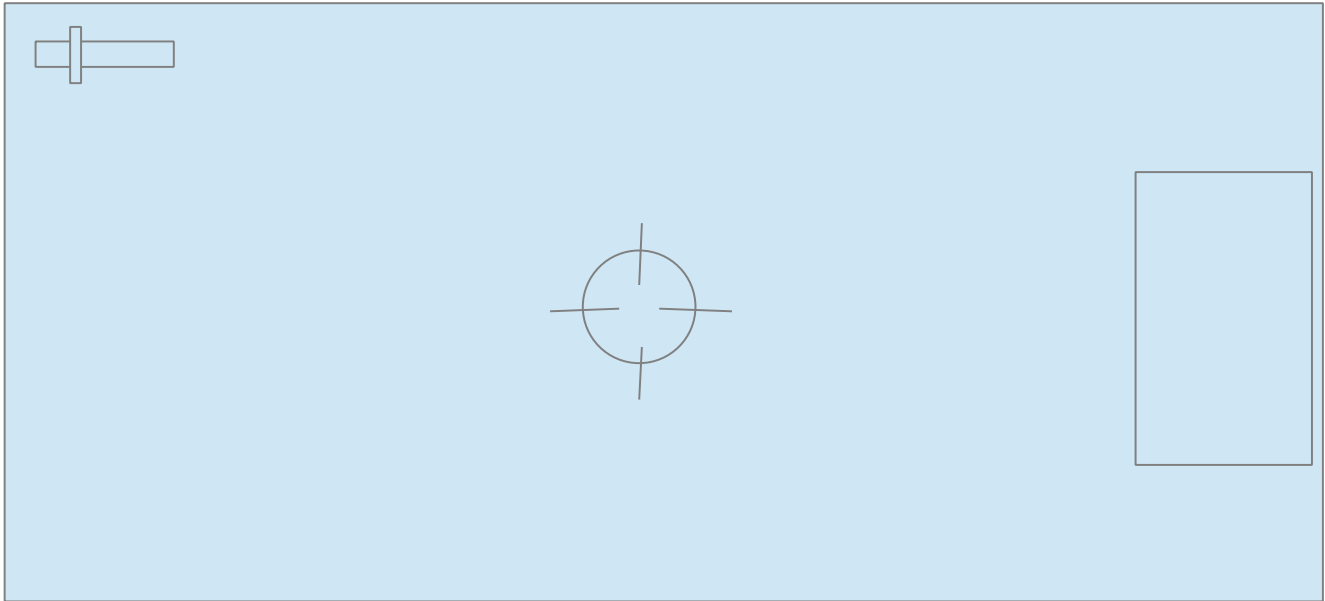
- Phase indicator
- Focus retical
- Frames per Second (optional)
- Objective tracker