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Certification

Park IP Translations

I, Christopher Girsch, hereby declare:

I possess advanced knowledge of the Japanese and English languages. The attached translation is, to the best of my knowledge and belief, a true and accurate translation from Japanese into English of the VRSJ Research Report.

I declare under penalty of perjury that the foregoing is true and correct.



Christopher Girsch

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A Virtual Park on Top of Spline - Bicycle Media Park -
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We built the Bicycle Media Park, a virtual part in which multiple users can interact through a network. The Bicycle Media Park is equipped with the facilities of aquarium, space walk building, Ferris wheel and cycling racetrack inside a park that is 1.6 square kilometers, and multiple users who are distributed geographically can meet inside one park, share an experience with these facilities, and talk with one another by audio. This park was built with Spline, a software platform for distributed virtual environments (DVE) that we developed previously. We were able to confirm that it is possible to create distributed virtual environments flexibly and efficiently by employing Spline. In this essay, we describe the characteristics of the implementation of the service facilities inside Bicycle Media Park.

A virtual park on top of Spline — Bicycle Media Park —

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We have developed Bicycle Media Park (BMP) which enables multi-user interaction in distributed virtual environment (DVE). BMP has 1.6 km square terrain and provides several amusement facilities. Users of BMP explore the park, visit aquarium, space walk building, ferris wheel and bicycle stadium by riding bike. Geographically distributed users can come across, talk each other, and share their experience in the park. BMP is implemented on top of Spline, a software platform for building DVEs. Spline makes it easy and flexible to provide DVE applications. This paper describes design and implementation of facilities in BMP with Spline.

1. Introduction

In recent years, research on distributed virtual environments (DVE) has been thriving [1], [2], [3]. We built the Bicycle Media Park, a virtual part in which multiple users can interact through a network. This park was implemented on Spline [4], [5], [6], , a software platform for distributed virtual environments (DVE) that we developed previously. In this essay, we describe the characteristics of the implementation of the service facilities inside Bicycle Media Park.

2. Bicycle Media Park

In this section, we provide an overview of Bicycle Media Park and describe the service contents for each facility that is disposed inside the park.

2.1 Overview

This is a system wherein multiple users roam with a bicycle-type input-output device through 1.6 square kilometer park. The park is composed of a rugged topography, and the weight of the pedals of the bicycle-type input-output device change according to its uphill and downhill areas.

A user appears inside the park as an avatar (described below along with the motorbike), which is depicted as being mounted on a bicycle), and two users who meet one another can enjoy a chat with audio. Background noises, such as the chirping of birds, the water sounds of a pond, the fluttering of flags to express the wind or the rustling of the leaves of trees, elegant jazz sounds, etc., have been set for each place inside the park.

Service facilities that can be enjoyed by users like an aquarium and a space walk building, and user participation type service facilities such as a Ferris wheel and bicycle racetrack, has been set up inside the park.

2.2 Facilities and Services inside the Park

● Aquarium

At the huge water tank installed inside the park, users can enjoy the many fish swimming around inside it, as shown in Figure 1. In addition, when one approaches the water tank, the sound of bubbles can be heard.



Figure 1 Fish swimming around the inside of the water tank

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