Research Demo of

Tangible Sports based on Integration of Virtual World and Real World

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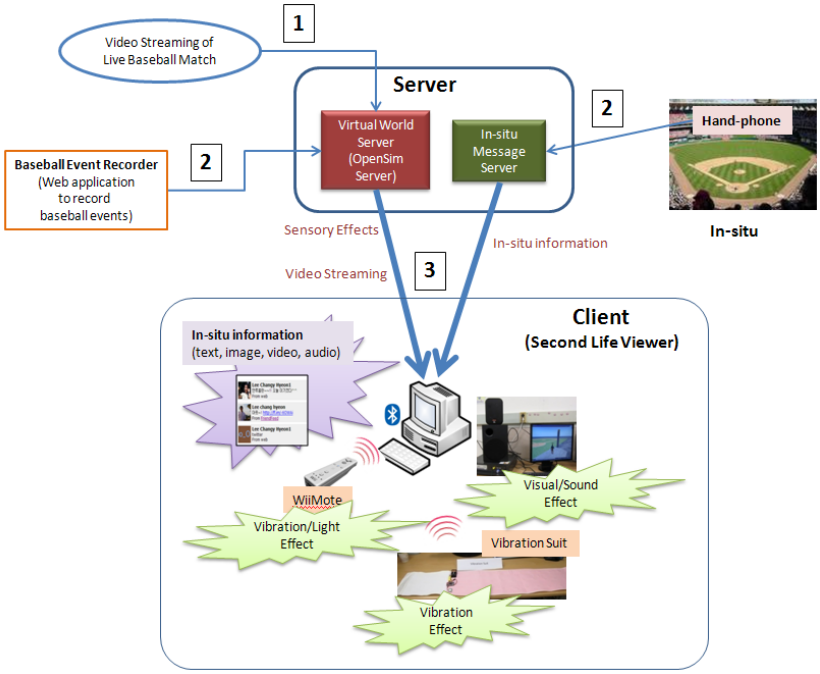
Description:

This demonstration is about experiencing live baseball match more than watching directly in real stadium. We use virtual world as main environment for watching live baseball match. In this virtual world, we provide 3D stadium and video streaming of live baseball match to the user.



We implement two things in here.

First is about the integration of real-time web information (baseball events) and tangible devices with virtual world. Our system will give user a realistic sensation on every baseball event (i.e. home run) by showing sensory effects (vibration effect, sound effect, visual effect, etc.). In this implementation, the main issue is about synchronizing real-time web information and multiple tangible devices (i.e. wiimote and vibration suit) that can give users of virtual worlds some kind of sensory effects (vibration, light, sound, etc.).

Second is about the integration of in-situ information with virtual world. During the match, user will get real-time in-situ information of the match (i.e. image, video, text, and audio) that gathered using hand-phone. We implement In-situ Message Server that analyzes in-situ information and connects to second life viewer. In this implementation, we use Twitter service and Tossi service (micro blogging service for sending message to twitter in Korea).

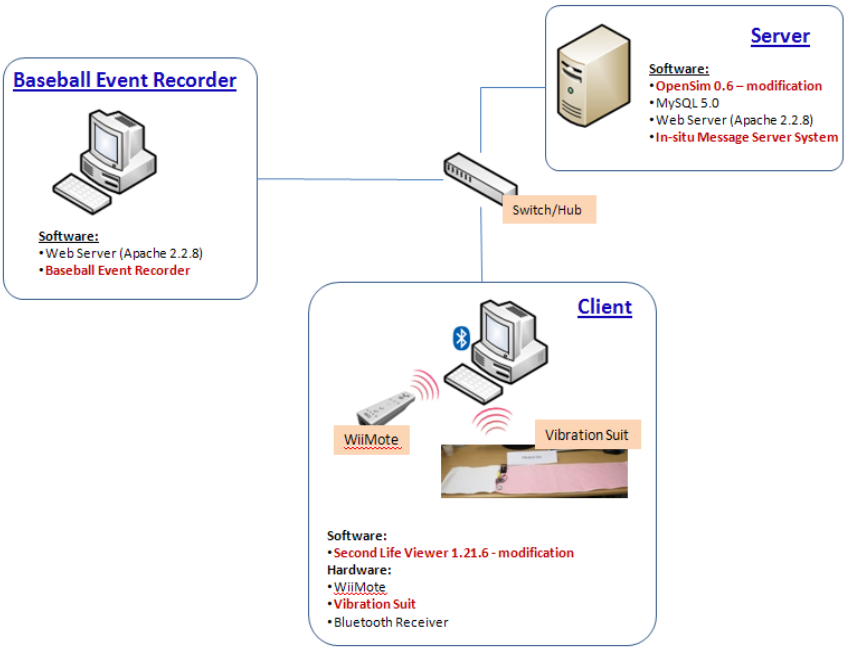
Setup System:

In this demonstration we use 3 computers that are connected with switch/hub.

We use dummy in-situ information that will be shown in the client viewer.

We implement baseball event recorder that provide baseball event information.

In the client side, wiimote and vibration suit are connected using Bluetooth.



Description of Our Research Lab

Our research area is on the integration of Web, Virtual World, and Physical Space. Several topics are already implemented:

1. Implementation of Responsive Virtual World to Sensor Network
   Basically the virtual worlds and sensor is proposed separately. In this research, we proposed possibility of combining these two concepts together. Making virtual world to be responsive to sensor networks is one way to make virtual world connect to real object. We implement responsive virtual world to sensor network. The main idea is send sensor status to virtual world using XML-RPC.

2. Tangible Shopping Technology in Virtual World
   The main idea is provide real information of the product to the customers and gives them ability to interact with the product. In the implementation we integrate web 2.0 mashup technology of Amazon.com with virtual world.

3. In-situ Message Server system based on Mobile Phone
   Twitter service is span physical space and web. In this implementation we want to integrate this social network technology with virtual world.

4. System Implementation of VRI (Virtual World and Real World Interface)
   We implement the concept of VRI by developing Sensory Effect System. The main issue is about synchronizing real-time web information and tangible devices that can give users of virtual worlds some kind of sensory effects (vibration, light, sound, etc.). MPEG-V working group already introduced the concept of sensory effect. Here, we focus on the implementation issue of sensory effect system based on virtual world technology.

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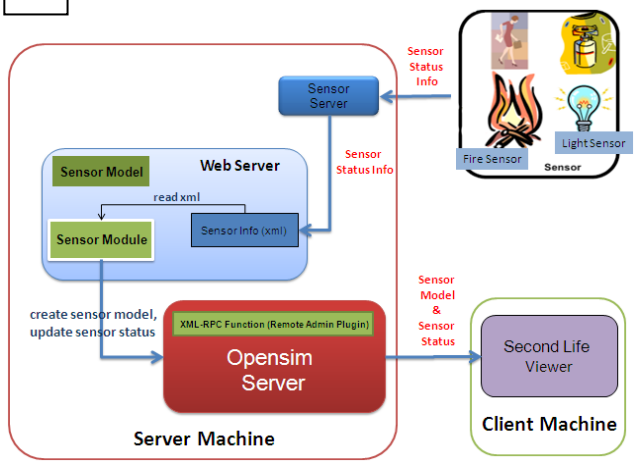

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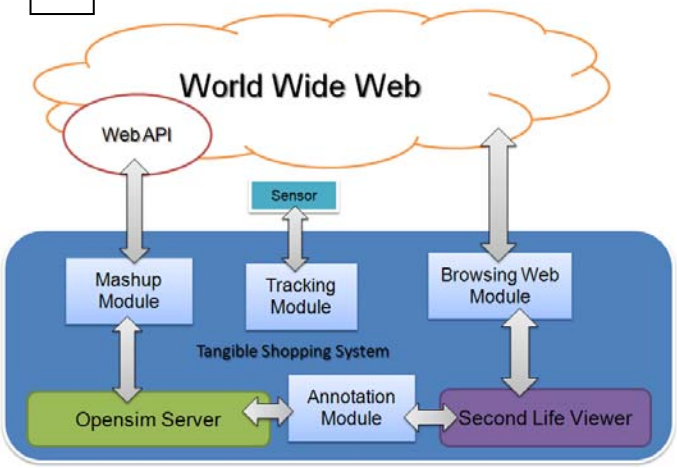

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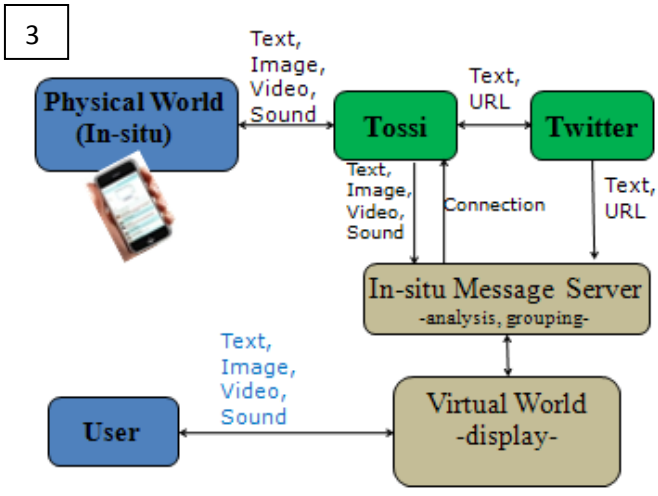

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