Abstract

Nowadays Virtual Worlds and MMORPG offer users the advantage of easy programming and creation of highly interactive content but restrict the presentation and provided interactivity to the world they are in. On the other hand there is wide variety of Hardware in Real World to support interactive content and multimedia presentation but the content creation isn’t has easy and the final result so interactive has it is on Virtual Worlds. The separation between Worlds and the way to provide support for something in the middle, in the “World” of Mixed-Reality, is the barrier blocking out users from the two Worlds to interact with the same contents and have the same advantages no matter in what World they are. This could be solved by taking advantage of the best in the two worlds and combine it to create a Mixed-Reality world(environment) with all the advantages of both and at the same time arrange ways to provide interaction to users in both worlds with this Interactive Contents in the Mixed-Reality environment context.

The objective of this project is to understand how support can be provided for interactive content on a Mixed-Reality environment. To help explore this issue, an architecture and mechanism were developed for playing interactive multimedia content in Second Life™ and in the real world. Mixed-Reality context interactivity is supported, with video on demand support on both worlds. System response to Mixed-Reality interactions bringing new functionalities in the Virtual and Real world, larger object variety and higher level of interactivity, to Real Users and a more Real, immersive, response to Virtual Users interactions by manifesting the result in a real fashion with supporting hardware are examples of benefits provided by our approach. After defining the goals of this project, we tested and validated an application architecture solution to use in Mixed-Reality Systems and a way to communicate between Real and Virtual World.

The contributions of the project are intended to make the experience of the Mixed-Reality User more fulfilling. Specifically provided support for interactive content on a Mixed-Reality environment composed by a Virtual World, Second Life™, and the Real World, a way to provide Audio and video streaming, including video on demand, in the same solution, a valid application architecture solution to deploy Mixed-Reality Systems and a possible low cost sensing solution providing the interactions for this kind of Systems, Mixed-Reality Systems.