MR Platform

Shinji Uchiyama, Kazuki Takemoto, Kiyohide Satoh, Hiroyuki Yamamoto, and Hideyuki Tamura

MR Systems Laboratory, Canon Inc.

2-2-1 Nakane, Meguro-ku, Tokyo, 152-0031 Japan

{uchiyama.shinji, takemoto.kazuki, sato.kiyohide, yamamoto.hiroyuki125}@canon.co.jp, HideyTamura@acm.org

1. Introduction

The technical details of *MR Platform* are described in a paper [1] at ISMAR 2002. This demonstration shows the functions and possibilities of *MR Platform* through simple applications built on it.

2. Simple Example

Figure 1 shows a simple example implemented on *MR Platform*. The four markers shown in Figure 10, one of which is hidden under a virtual windmill, are used for registration. A virtual building and a virtual windmill are placed on the table and the hexagonal column, respectively.

The PC used for this demonstration has a Pentium 4 1.9GHz CPU, a TwinView GeForce2 MX graphics card and two video capture cards. This configuration processes stereoscopic video capturing, registration, stereoscopic rendering and other related processings at 60 frame per second, although captured images can be refreshed at 30 fps.

This application was implemented in only about 450 lines of code, including virtual world rendering and window operations. Moreover, Open Inventor 2.1.5 for Linux by SGI is used as an upper level CG library, which can be used to handle a scene graph, for rendering a virtual world.

MR Platform makes it possible to implement MR applications rapidly, and to use conventional graphic APIs in the applications.

3. AquaGauntlet : An Entertainment in Mixed Reality Space

Figures 2 shows a more practical example where our mixed reality entertainment   [2] was ported onto the *MR Platform SDK*. For handling and rendering the virtual objects, OpenGL Performer 2.4 for Linux by SGI is used.

References

[1]   S. Uchiyama et al.: "MR Platform: A basic body on which mixed reality applications are built," *Proc. ISMAR2002*, 2002 (to appear).
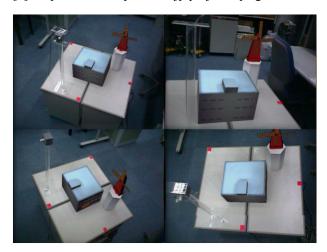
[2]   http://www.mr-system.co.jp/project/aquagauntlet

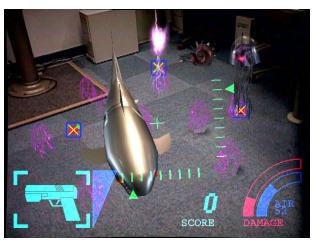**Figure 1.   MR Platform based simple system**

Figure 2.   AquaGauntlet