Digital Display Case: The Exhibition Sysytem for Conveying the Background Information

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Figure 1: *Digital Display Case*

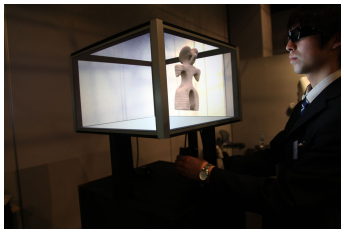

Figure 2: *The appearance of the system in operation*

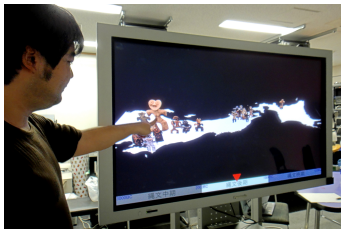

Figure 3: *Users observe and select exhibits on the Interactive Panel*

Figure 4: *Reproduction of the exhibit and its atmosphere*

1 Introduction

In our research, we aim to construct an interactive exhibition system for museums to convey the background information about its exhibit, which today's museums need. Museums have to preserve their exhibits, and that was a limitation on the exhibition form. They cannot hold a quite new type of exhibition because it might jeopardize their exhibits. So they cannot do more than the exhibition with conventional display cases and panels, in other words a passive exhibition to convey the background information. Digital technologies untie them from this limitation. We can convey the background information effectively using CG in exhibitions, without jeopardizing real exhibits.

There are some researches about this kind of exhibition systems featuring digital technology like Virtual Showcase[Bimber et al. 2003]. But few of them are actually introduced into museums. That is because they are greatly different from conventional display cases. Museums have a kind of knowhow about their exhibition. They know how to use conventional display cases efficiently in their exhibition. On the other hand, they are puzzled to use a quite new devices, then they cannot build such new devices into the exhibition effectively.

Therefore in this paper, we construct the system to convey the background information about exhibits compatible with conventional display cases and panels. We categorized the background information which museums want to convey into two categories, synchronicity and diachronicity.

- Syncronicity: Comparison of cutaneous exhibits
- Diachronicity:Temporal change of exhibit

Then we consider how to realize the exhibition to convey these two types of information with it based on the discussion with the Tokyo National Museum.

2 Exposition

We made these two systems.

Digital Display Case We made a system in the shape of conventional display cases which realizes the exhibition with CG (Fig.1). Figure2 shows the appearance of the system in operation. We constructed four 3D displays into box shape. A User wear glasses with sensor, and the system measures the position of view point. Based on this, it calculate the images to display, and he can see around the exhibit as if it were in the case. he also can handle the exhibit by handling the cylindrical object and he can see it in greater detail by bring it near.

Interactive Panel We also made a panel system (Fig.3). This can present many exhibits at the same time, and user can manipulate the contents on it with touch panel. It also has the synchronization function with the Case system.

Then, we consider the way to realize the background-telling exhibition with this system. We made exhibitions about the synchronicity and diachronicity of Doguu, which is Japanese ancient clay doll. We decided these contents based on the discussion with Tokyo Nation Museum.

Exhibition of Synchronicity Doguus are generally made during the Joumon era, and there are variety of Doguus excavated in variety of places in Japan. In this point Doguus has synchronicity.

To convey this synchronicity, we displays Doguus made at the same period on a map of Japan like conventional panels (Fig.3). In addition to this, when user select one of them, he can appreciate it in the Case System. With this, user can connect the information on the panel to the exhibit itself more efficiently. He can look down at exhibits on the panel and understand common or different features among them, and also appreciate one of them with his whole attention by selecting it.

Exhibition of Diachronicity Doguus are made in ancient times, so it is deteriorated to some degree. Many researchers have tried to restore their original appearance. We can consider it as the diachronicity of Doguus. Additionally, the atmosphere in Jomon Era that surrounded Doguus is also a part of their diachronicity.

We use the easiness to switch the images with CG to convey this. We used 3D models of present appearance and past appearance of the exhibit, and switch them to show how it changed or was deteriorated as time passes. We also reproduce the atmosphere of the exhibit by presenting it as background(Fig.4), and this shows the diachronicity around it.

References

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