

Hiroo Iwata Anomalocaris



Anomalocaris is an interactive work, which represents a virtual creature through visual and haptic sensation. *Anomalocaris* is the name of an animal that is supposed to have lived during the Cambrian Age. A virtual anomalocaris is displayed on the Haptic Screen. The Haptic Screen is a new configuration of a force feedback device. Compared with visual and auditory sensation, sense of touch is difficult to synthesize. Visual and auditory sensations are obtained by specialized organs: eyes and ears. On the other hand, force sensation occurs in any part of the human body and is inseparable from physical contact. These characteristics make it difficult to develop the force feedback device. The Haptic Screen has an innovative mechanism that creates a sense of touch in the whole palm of the hand. The device adapts itself to present the shapes of virtual objects. A typical force feedback device uses a grip or thimble. By comparison, users of the Haptic Screen can touch the virtual object without wearing anything on their hands. The Haptic Screen employs an elastic surface made of cloth. Actuators are set under the elastic surface. The original Haptic Screen employs 36 linear actuators arranged 6 by 6. The surface is deformed by the actuators. Each actuator has a force sensor. The hardness of the surface is made variable by these actuators and sensors. We have developed a simplified and robust mechanism of the Haptic Screen for the exhibition at the Ars Electronica Center.

A video image is projected on the elastic screen so that the participant can directly touch the image and feels its rigidity. Deformation of the virtual anomalocaris occurs according to the force applied by the participant. If the participant pushes the head of the virtual anomalocaris, it becomes angry and struggles.

