虛擬實境系統與六軸平台之整合

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摘要

The purpose of this thesis is to accomplish a virtual reality system which is integrated with a Stewart platform. The objects in virtual reality are designed by using 3DS MAX software, and the virtual reality background for flying simulation is edited by using Virtools. The software kinematic control moduli for the simulated airplane are also developed. In virtual reality, the gesture of the simulated airplane and the distance change of the background are controlled by the control wand signal. The content of the virtual reality can be displayed simultaneously on the monitor screen and the head-mounted display. Some basic integration between the virtual reality and the Stewart platform is established. The gesture of the simulated airplane and the Stewart platform can be controlled by the same control wand signal.
The appearance of the head-mounted display is also designed and manufactured. Several factors are considered for the head-mounted display design, such as eye relief, Ergonomics, and mathematic model for curve surface. The rapid prototyping method, material properties, product weight limitation and tolerance are considered during the manufacturing.

關鍵字：Virtual Reality,Head-Mounted Display ,Stewart platform ,Virtools