Effects of Force Feedback on VR Task Completion

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Evolution of VR (1950’s)
Evolution of VR (2013)
Project Description

- Design protocol
  - Measure human cognitive response/acceptance to virtual world
  - Achieve coupling, brain <- virtual avatar
  - Vary modes of presentation
  - Look for indications of task learning, etc.

- Build system
  - Immersive Virtual World in Unity3D
  - Integrate with Phantom 6DOF
  - Stereoscopic display
Unity3d
Phantom 6DOF
Procedure

Design Experimental Protocol Around Phantom 6DOF

Obtain IRB Approval

Recruit Subjects

Haptic Modeling

Phantom + Unity3D

Build Virtual world

Conduct Study & Post-Analysis
Relevant Studies


• G. Burdea, “Haptic Feedback for Virtual Reality”

• Fabiani, L., G. Burdea, N. Langrana and D. Gomez, "Human Performance Using the Rutgers Master II Force Feedback Interface"
Relevant Studies

Figure 4. Tracking task mean completion time for different graphics frame rates (monoscopic and stereoscopic displays).

Figure 5. Tracking task learning process for different graphics frame rates. (Monoscopic display)
References


- http://ti.rutgers.edu/publications/publications.html

- www.unity3d.com