




# VIRTUAL REALITY CENTER



*The Virtual Reality Center is an impressive, high-tech environment capable of providing useful, immersive design review services to aviation manufacturers and non-aviation related sectors such as bio-sciences and architecture. With impressive fly-throughs and the capability to make changes to simulations in real-time, the VRC is a useful collaboration tool for other NIAR laboratories such as Computational Mechanics, CAD/CAM and Human Factors.*

NATIONAL INSTITUTE FOR AVIATION RESEARCH  
WICHITA STATE UNIVERSITY  
[www.niar.wichita.edu](http://www.niar.wichita.edu)



## RESEARCH AREAS & SERVICES

- **Virtual Prototyping:** in conception and design phases from any Computer Aided Design (CAD) or Computer Aided Industrial Design (CAID) data
- **Digital Manufacturing:** used for Real Time Process Plan and Work Cell simulation from any CAD/CAM data
- **Digital Engineering:** used in pre- and post-processing of massive Computer Aided Engineering (CAE) datasets for analysis and certification purposes
- **Ergonomics:** in real-time anthropometrical analysis for assembly, accessibility and training evaluations
- **Sales/Marketing:** in photo-realistic, real-time simulation of customized products



## FACILITIES & EQUIPMENT

- 1,842 sq.ft. visualization room
- Seating for 25 viewers
- HP xw9300 PC-based cluster using nVIDIAQuadroFX 4500 cards & SGI Onyx300 (for legacy data)
- Panoram's PanoWall 2K 15 x 7 ft. flat screen, active stereoscopic, rear projection, 2 Christie's Mirage 5000 reaching a combined resolution of 2368x1024 pixels
- Panoram's Integrator2000 System hardware-assisted blender
- NVIS VisorSX head mounted display with 1280x1024\_60Hz and 60 degree diagonal field-of-view
- Fakespace Lab's PinchGlove
- VICON 602 optical motion capture with 10 MCam2 high-speed (120Hz) cameras for high precision ergonomics analysis
- Ascension's Nest of Birds extended range magnetic motion tracking for head, hands and wand
- Creston's control system and wireless RF touchpanel
- Extron's CrossPoint Plus 8x8HV and 8x4Hva matrix switchers
- 5.1 channel audio system with 4 speakers
- DVD and SVHS VCR players
- Sony's Digital8 IEEE 1394 firewire camera



## MAIN SOFTWARE APPLICATIONS

- DS CATIA/ENOVIA V5
- DS 3DVia Virtools
- PTC Division Mockup Reality
- EON Reality Professional/I-Catcher
- Right Hemisphere Deep Exploration & Deep View
- CEI Enight Gold
- Middleware: VRCO Trackd & VA RapidVRM
- OpenGL and OpenGL Performer-based proprietary codes

FERNANDO TOLEDO, MANAGER  
(316) 978-8333  
fernando.toledo@wichita.edu