Models, Simulation, and Software

Johnson Space Center (JSC) offers capabilities in developing high-fidelity, real-time, human-in-the-loop engineering simulations with math models, scene generation, and realistic control station mockups. Expertise is available in software development, including flight and ground systems, real-time, mission critical, embedded software, software integration, and hardware-in-the-loop testing. JSC also provides computer graphics and model development for engineering visualization as well as state-of-the-art facilities for testing advanced simulation environments, allowing integration of multiple models into a single simulation.

Services Provided

- Software development, testing, and simulation
  - Flight and ground systems
  - Real-time, mission-critical, embedded software
  - Software integration and hardware-in-the-loop testing
  - Capability Maturity Model Integration (CMMI) certified software development organization
  - Advanced simulation environments allowing integration of software developed for many platforms
  - Integration of multiple models into a single simulation
  - Real-time analysis

- Simulation
  - Trick Generic Simulation Toolkit for rapid development of high-fidelity simulations
  - Design, development, and integration of high-fidelity, real-time, human-in-the-loop simulations
  - Six-degree-of-freedom simulations of single- and multiple-vehicle missions for various flight phases
  - User defined graphical user interfaces

- Models and Graphics
  - 3-D engineering visualization, modeling, and graphics custom software development
  - Animated Graphics for Engineering Analysis (AGEA)

- Dynamics systems testing
  - Physical emulation of spacecraft motion with motion platforms
  - Open and closed-loop testing of automated rendezvous and docking systems
  - Real-time, hardware-in-the-loop, human-in-the-loop testing
We have developed customer-friendly agreements to streamline business relationships and are eager to share our unique facilities and expertise with new customers. We invite your inquiries regarding application or adaptation of our capabilities to satisfy your special requirements. Briefings on general or specific subjects of mutual interest can be arranged at JSC or at your business site.

Facility Testing Information
http://jsceng.nasa.gov

Point of Contact
Associate Director ● JSC Engineering Directorate ● (281) 483-8991 ● jsc-ea-partnerships@mail.nasa.gov

FS-2011-07-032-JSC