Aerospace Communications and Engineering

A CSC CENTER OF EXCELLENCE

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The Aerospace Communications and Engineering Center of Excellence brings to CSC clients unparalleled aerospace knowledge in areas such as flight software, simulations, planning and scheduling, space communications, data processing, flight dynamics and systems engineering. Leveraging over 30 years of experience and expertise from serving the needs of the U.S. National Aeronautics and Space Administration (NASA), the U.S. National Oceanic and Atmospheric Administration (NOAA), and the aerospace industry across many disciplines, the Center offers innovative solutions to critical problems throughout the federal and commercial sectors.

The Center's leading-edge spacecraft support and operations solutions are adaptable to the broader aerospace industry and can be used in a variety of commercial applications in aerospace. The high reliability needed in aerospace systems translates to other applications as well, such as applications for power plants, factories, train stations, hospitals and network-centric warfare. The Center's existing solution set offers tailorable plug-and-play components, scalability, planned technology innovation infusion, technical flexibility and reduced cost of development and operations.

The Center offers CSC and clients focused expertise in areas such as:

- Flight software
- Ground control systems and middleware
- Mission planning and scheduling
- Science data processing and data archiving systems
- Spacecraft and ground simulators
- Space and earth science
- Spacecraft orbit analysis
- Network and security engineering
- Instrument checkout and calibration
- Lights-out, automation and process control
- Front-end processors
- Spacecraft requirements analysis and operations concepts
- Systems engineering
- Systems verification and validation
- Project management

CSC's Centers of Excellence enable exploration and testing of state-of-the-art solutions with minimum up-front investment and maximum innovation and results. Each Center has designated staff who work from a dedicated facility equipped with a laboratory for demonstrating and delivering client solutions and evaluating and testing products, methodologies and concepts

The Center maintains three in-house lab facilities that can be leveraged for a variety of purposes including newer technology validation, prototype design and development, demonstrations and project development. The labs enable CSC to effectively design, develop, test and manage aerospace and commercial projects. The Center maintains its cutting-edge focus through well-established, close working relationships with numerous alliance partners and more than 10 universities.

CSC and clients working with the Center benefit from the concentrated expertise of over 50 focused professionals with PhD, Masters or Bachelor of Science degrees, including CSC's astronaut-astrophysicist Dr. Ron Parise, who has flown as a mission specialist on two shuttle missions. Center staff participate in the American Institute of Aeronautics and Astronautics (AIAA), Institute of Electrical and Electronics Engineers (IEEE), American Astronautical Society (AAS), American Geophysical Union (AGU), and other professional and standards organizations. The Center is part of a business unit with ISO 9001:2000 registration and Software Capability Maturity Model (SW-CMM) Level 5 independent certification from the Software Engineering Institute (SEI).

Aerospace and Communications Engineering Development and Simulation Lab (ADSL)

The ADSL is currently used both as the Modular Integrated Solutions Toolkit (MIST) system product development lab and as a flight software lab.

As the MIST product development lab, the ADSL supports software development, testing and delivery preparation for the NASA James Webb Space Telescope (JWST) project and the NASA/NOAA/DOD NPOESS Preparatory (NPP) project. The ADSL also provides configuration management, development and testing of the MIST product software, and serves as a forum to demonstrate MIST capabilities to potential customers.

As a flight software lab, the ADSL supports research and development efforts in flight software technology, including the evaluation and testing of new software algorithms, and evaluation of new development tools and flight processors. The ADSL supports flight software technology demonstrations and acts as a training center for flight software development.