ADVANCED AIR TRAFFIC MANAGEMENT
CENTER OF EXCELLENCE

ROCKVILLE, MARYLAND, USA

EGG HARBOR, NEW JERSEY, USA

CHANTILLY, VIRGINIA, USA

CLEVELAND, OHIO, USA

Contact:

Robert Beard
rbeard@csc.com

Dave Rhodes
drhodes5@csc.com

Jim Hayes
jhayes@csc.com

CSC's Centers of Excellence help clients explore state-of-the-art solutions with minimum up-front investment, leveraging CSC's top talent to maximize innovation and results. Each center has a designated facility and staff who demonstrate and deliver solutions and evaluate products, methodologies and concepts.

CSC's Advanced Air Traffic Management Center of Excellence supports the worldwide aviation community with air traffic management (ATM) solutions. These range from researching new concepts and decision support tools for the Next Generation Air Transportation System (NextGen) to developing, deploying and operating current-day ATM systems. With more than 35 years of experience in ATM, CSC's unique capabilities span areas such as air traffic flow optimization; time-based flow management, including regional metering and arrival and departure metering; air-ground data link; and tactical air traffic control (ATC) for all phases of flight. The Center's affiliated labs in Maryland, New Jersey, Ohio and Virginia demonstrate CSC's capabilities as a product-independent ATM systems integrator and as a systems and applications developer.

The Center's functions are to support innovation, in the development and validation of ATM-related technologies and best practices, to facilitate the exchange of this expertise within CSC, and to provide a forum for customer interaction on current and future ATM needs — whether NextGen, SESAR or others. The Center also sponsors selected technical activities, white papers and prototypes as well as cooperative activities with government and industry organizations such as FAA, NASA, JPDO, RTCA, ATCA, NCOIC, GEIA, etc.

The Center's applications are typically systems that interact with ATC, including strategic traffic flow management systems, trajectory-based operations (TBO) such as time-based separation systems, systems that provide pilots with information on weather and airspace status, collaborative systems for flight planning and filing, and systems that support optimal use of scarce runway resources.

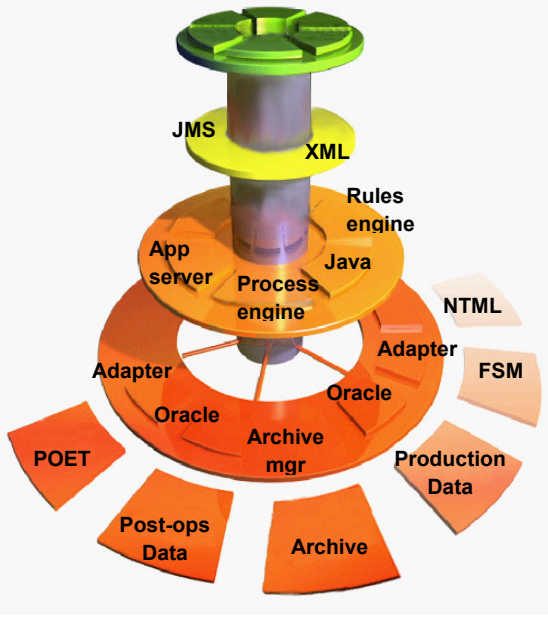
Now ranked as the leading air traffic controller training suite in U.S. colleges, the Center's NexSim™ simulation and modeling capability provides cutting-edge automated ATC training and highly realistic simulations. NexSim™ capabilities are invaluable for validating advanced air traffic management concepts, airspace and surface movement designs, new RNAV and RNP routes, delegated separation/interval management, integrated air/surface interactions and other near-term and advanced NextGen concepts.

The Center excels in applying the latest information technologies to ATM, including enterprise architectures based on service-oriented architectures (SOA) featuring CSC's proven e4℠ methodology and Web-based development approaches.

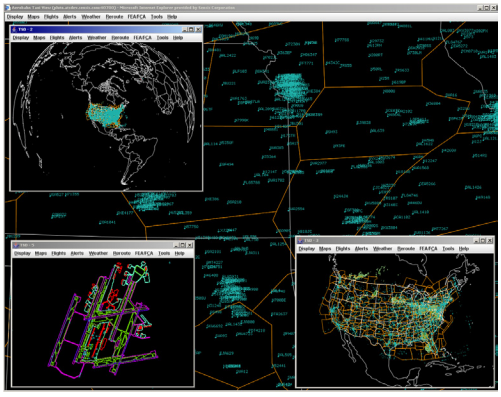
Recently fielded systems have provided arrival and departure traffic management functions, near-real-time display of static aeronautical data (routes, fixes, approach procedures/maps/charts) and highly dynamic aeronautical data (weather, traffic management constraints and Notices to Airmen), and graphical display of severe weather and airspace constraints.

ADVANCED AIR TRAFFIC MANAGEMENT CENTER OF EXCELLENCE

NexSim Air Traffic Control simulator



CSC's Traffic Flow Management System SOA Architecture



Advanced Traffic Flow Displays

CAPABILITIES

- Highly realistic, automated ATC simulation suite, NexSim™, which integrates controller ATC interactions from all ATC domains (tower, terminal, and en route) with new NextGen operational concepts
- Studies, prototypes and simulations of advanced trajectory-based operations (TBO) concepts, including near-term and future approaches for deploying new "green" RNAV and RNP routes and improved integration of strategic and tactical ATM operations
- Advanced NextGen solutions derived from the FAA's Traffic Flow Management System (TFMS)
- Key future TFMS-based concepts that are critical elements of the NextGen road map
- Air traffic flow management applications, decision tools, and airspace use and loading analysis
- Mobility enhancements to provide ATM capabilities on mobile devices
- Assessment tools for management of flight planning and airspace data
- Near-real-time collaborative operations and ATC using ground-based and aircraft-based technologies
- Strategic flow management planning (several hours in advance) for near-real-time operations
- Time-based flow management applications and advanced concept design
- Analysis, modeling and concept demonstrations of future operational concepts and tools
- Enhanced human-computer interfaces
- Simulation, testing and data analysis of decision support tools
- Advanced air traffic controller training simulation

RESOURCES

Center employees are active participants in the Air Traffic Control Association (ATCA) and the interagency Joint Planning and Development Office (JPDO), regularly providing papers and conference briefings to ATCA and JPDO. Center specialists also actively participate in special committees of RTCA, the industry-wide standards organization for ATM.

Center employees support special committees and task forces of several other ATM industry organizations, by developing, reviewing and assessing new R&D concepts and systems development strategies; they also work closely with the R&D programs of several colleges/universities.

Additionally, the Center has played an active role in collaborating with NASA's ATM R&D efforts, developing new concepts and prototypes for ATM systems of the future. Selected products developed by CSC under this research model have been successfully deployed and are now being used on a daily basis in FAA ATM operations.