



Success Story



Clear Skies:

ConceptSolutions Works with FAA to Chart Safe, Secure Course Through U.S. Airspace



The Challenge: Satisfying a Congressional Mandate

The U.S. General Accounting Office filed two reports in the late 1980s, which were critical of the Federal Aviation Administration's (FAA) management of Special Use Airspace (SUA):

1. "Military Airspace: Better Planning Is Needed To Meet Future Requirements" (1987)
2. "Airspace Use FAA Needs to Improve Its Management of Special Use Airspace" (1988)

SUA is reserved exclusively for military operations and other special needs, including, but not limited to, restricted areas, warning areas, prohibited areas, alert areas, and controlled firing areas.

In 1987, Public Law 100-223 (1987) stated, "Operational Procedures will be developed for real time and dynamic coordination between the FAA and DOD so that DOD SUA requests can be accommodated rapidly with minimum disruption of civil aviation operations." As part of PL 100-223 requirements, the Secretaries of Transportation and Defense sent a joint report back to Congress in 1989. That report, titled "Report On The Joint Review Of Special Use Airspace," explained how FAA and DOD would address the deficiencies in airspace management:

"The FAA, in coordination with the DOD, is developing NAMFAC (Old name for Special Use Airspace Management, or SAMS) to enhance SUA tracking and management. NAMFAC is being designed to provide automated coordination and dissemination of SUA information and will have the capability for real-time tracking of SUA utilization."

In 1989, FAA and DOD began planning development of an interagency system, called MILOPS (Military Operations System), to safely manage and expand useable airspace. For the next 15 years, the two agencies sought the best technology partners and solutions to succeed in its mission, with limited success. A first step and vital component to a successful MILOPS upgrade would be development of a Military Airspace Data Entry (MADE) system.

The Solution: Improved Technology and Interagency Coordination

After seeking a SUA solution for nearly 20 years, FAA took a giant leap closer to achieving its mission in February 2005, by turning to ConceptSolutions (www.Concept-Solutions.com) as its technology partner for designing and implementing MADE, a new automated, Web-based system that would help meet the following critical objectives for FAA's MILOPS:

- ★ Provide the most efficient use of US airspace while ensuring maximum safety to users
- ★ Improve operations and provide maximum coordination between DOD, FAA and airspace users affected by SUA and other special-purpose airspace operations
- ★ Provide authoritative auditing and reporting of actual US airspace usage.

"We were extremely proud to be FAA's IT partner of choice to help upgrade its long-awaited MILOPS solution, not only because of its importance to air safety and national security, but also for the opportunity to play an integral role in the ongoing, vital coordination between DOD, FAA, and the aviation industry,"

- John Krahulec, ConceptSolutions
Executive Vice President and COO

Since MILOPS was first conceived as MAMS (Military Airspace Management System) in the late 1980s, operational demands and technological advances such as GPS and the concept of "free flight" created a critical need for a comprehensive, automated solution to special use airspace scheduling and management. The new MADE system would need to provide online airspace information to a variety of government and civilian agencies, cover more than 2,500 charted SUAs across the country, and offer the following unique features:

- ★ 24-hour "look ahead" access to SUA schedules via a Special Use Airspace Data Gateway (SUA/GW) for commercial and General Aviation interests
- ★ Enhanced, intuitive interface for data input
- ★ Graphical, interactive access to SUA data integrated with weather and other supporting information
- ★ Improved performance
- ★ Reduction in duplicated keying of data
- ★ Improved accuracy with data checking before uploads
- ★ Dynamic reporting
- ★ Microsoft Excel compatibility.

The new, improved MADE/MILOPS system also would support the following FAA and DOD applications:

- ★ Special Use Airspace Management (SAMS) – for monitoring/approving all SUA schedules input through MADE and SAMS
- ★ SUA.FAA.GOV Web site for public access
- ★ SUA/GW – SUA Schedules Data Gateway

MADE

Within three weeks of engagement, ConceptSolutions had produced a fully functional prototype for the new MILOPS system. In June 2005, just four months after prototype, ConceptSolutions initiated pilot testing of the first MILOPS upgrade: production release of the Military Airspace Data Entry (MADE) system for FAA's Air Traffic Office of System Operations Security. The new, Web-based system enabled DOD and branches of the military to safely and efficiently schedule Altitude Reservations (ALTRV) and use of SUA, Orbit Areas, Air Traffic Control Assigned Airspace (ATCAA), Military Operations Areas (MOA), and Military Training Routes. Working in conjunction with FAA's SUA Management System (SAMS), MADE provides real-time data for scheduling airspace usage, and facilitates maximum coordination between a variety of government, military and civilian agencies.

The new MADE system enables military users to:

- ★ Streamline the process for daily SUA schedule submission, activation, and dissemination to National Airspace System (NAS) users;
- ★ Enhance DOD's ability to edit previously submitted schedules – with cancellations or updates – resulting in a more accurate representation of the scheduled airspace;
- ★ Automate the process for Traffic Management Unit (TMU) review and activation of daily SUA schedules;
- ★ Reduce workload associated with manual processing of schedules sent by fax, email, or phone;
- ★ Identify when coordination is needed between two or more DOD organizations desiring to schedule the same airspace during the same timeframe.

To deploy the MADE capability throughout the National Airspace System (NAS), ConceptSolutions worked collaboratively with FAA, DOD, and The MITRE Corporation's (www.mitre.org) Center for Advanced Aviation System Development (MITRE/CAASD). MITRE/CAASD, the FAA's Federally Funded Research and Development Center, laid the groundwork for developing and subsequently deploying the MADE system. This was accomplished through a series of SUA research trials in Central Florida, Central Texas, and Ohio. These trials involved several DOD organizations, commercial and general aviation airspace users, and FAA field facility personnel.

"The system delivered immediate benefits, including increased public safety, reduced commercial traffic delays, and improved airline efficiencies through reduced fuel costs," said Dennis Rowe, MITRE Corporation Lead Systems Engineer. "We look forward to continued success in implementing the system."

Results: Achieving the Mission

When the MADE system was first tested in June 2005, at the Naval Air Station (NAS) Fort Worth, Texas, FAA officials recognized its impact, immediately.

"This [successful test of MADE] is a major milestone, and will break down some of the barriers so that we all can meet our goals," said Doug Gould, Manager of Strategic Operations Security, FAA Office of Air Traffic System Operations Security. "Job well done to all."

Using the latest Internet technologies, the MADE system enables:

- ★ All segments of the civil aviation community to access military SUA schedules from a central database, and determine when SUA's are available and safe to navigate
- ★ Efficient interagency collaboration between FAA, DOD and other users of SUA
- ★ Significant travel and fuel efficiencies for civilian users, while preserving the priority of military and other special government users
- ★ MILOPS to operate at half the cost with higher output

- ★ Completeness of data between MADE and SAMS, which provides the public with the benefits of safety (i.e., avoiding SUA in use by the military) and cost savings (i.e., ability to fly through SUA when available rather than taking longer routes around)
- ★ Best use of available resources, including staff, system hardware, and purchased software.

High Marks

In July 2005, use of the MADE system in Fort Worth again garnered strong praise from officials. FAA's Military Operations Specialist (MOS) in Fort Worth Mark Chanter provided ratings of 10 – on a scale of 1 (Strongly Disagree) to 10 (Strongly Agree) – in all six questionnaire categories for the Sheppard MADE Trial. Chanter “strongly agreed” in each category that:

1. MADE simplifies the process of DOD's daily SUA schedule submission to the FAA's Air Route Traffic Control Center (ARTCC)
2. MADE allows the FAA's ARTCC to receive timely, daily SUA schedules from DOD customers
3. MADE allows the FAA's ARTCC to receive accurate daily SUA schedule from DOD customers
4. MADE provides the flexibility to edit/update previously submitted schedules
5. MADE reduces significantly the amount of time needed to enter the DOD's daily SUA schedules into the FAA's Special Use Airspace Management System (SAMS) data base
6. MADE supports all items of airspace scheduling parameters that need to be communicated to the FAA's ARTCC (e.g., dates, times, altitudes, call signs, live fire designation, etc.).

In March 2007, the MADE system drew similar outstanding reviews from FAA officials in Anchorage, Alaska.

“We owe our thanks and a ‘Job Well Done’ to everyone at MILOPS that has helped us get MADE/SAMS up and running here in Alaska,” said Greg Sonnabend, MOS, Anchorage ARTCC. “The amount of SUA's we must manage is quite large, if it were all combined together, it would cover an area larger than some of our smaller centers airspace. The new MADE/SAMS system has helped us a great deal in SUA management. The automatic generation of Service B messages is a godsend, something we tend to with almost religious fervor up here. With the rapidity of the Internet responses and updating, it has greatly enhanced real-time use of SUA's here and helped reduce the impact to non-military users.”

Expanding the System

ConceptSolutions re-implemented the previous SUA.GOV site to MILOPS in just four months using JAVA technology and off-the-shelf ORACLE servers, allowing convenient, anywhere-anytime access to the new system. With that transition, the Special Use Airspace Data Gateway (SUA/GW) was conveniently, securely accessible online from anywhere in the world. **In addition, ConceptSolutions:**

- ★ Updated, stabilized and managed operations of Global Positioning System/Wide Area Augmentation System (GPS/WAAS) Outage Prediction system
- ★ Stabilized SAMS production and created a test and development environment

- ★ Set up Help Desk Service Level Agreements (SLA) and staffed the desk with customer service personnel that have posted 100 percent on-time problem resolution for more than 12 months straight
- ★ Implemented Quality Assurance standards and Standard Operating Procedures.

By April 2007, ConceptSolutions had completed nationwide rollout of the MADE system to 282 military SUA scheduling sites, as well as all FAA Air Route Traffic Control Centers (ARTCC) and combined center/radar approach control (CERAP) facilities. To date, ConceptSolutions has trained more than 450 MADE users across the country, a number that the company expects to continue growing over time as more sites become MADE candidates.

Customer Support Playing Crucial Role

Even though MADE has been the “face” in the field of the MILOPS program, it’s just one part of what the entire ConceptSolutions-led team makes happen. **Key to MADE’s success is the helpdesk support of:**

- ★ Customers and meeting their expectations
- ★ Stability of SAMS
- ★ Takeover of the SUA Web site that, for the first time, supports graphical depictions of all SUA and MTRs (the real issue why the public law exists)
- ★ Auto-scheduling to get a handle on published schedules
- ★ The ability to provide details on intersecting airspaces nationwide and provide conflict warnings (something the military does not have on a national scale); and
- ★ The stability of overall MILOPS systems.

Expanding Buy-In

Beyond providing technical expertise, ConceptSolutions also has played a key marketing role in order to secure support of DOD and FAA center users, which has facilitated the timely rollout and implementation of the system nationwide. ConceptSolutions secured a key endorsement from the Pentagon’s Policy Board on Federal Aviation (PBFA), which paved the way for crucial DOD buy-in and usage of MADE. In addition, ConceptSolutions now works with all branches of the military to identify future requirements to continuously improve scheduling of SUAs, and provide more accurate accounting of airspace usage.

In October 2006, ConceptSolutions won a two-year, BITS II contract worth an estimated \$6 million from FAA to continue the MILOPS upgrade. The new business win, using AnviCom, Inc.’s BITS II contract vehicle, was yet another endorsement of the project’s success.

“The FAA MILOPS contract extension was a major boost to ConceptSolutions’ overall expansion, particularly in the government marketplace,” said John Krahulec, executive vice president and COO, ConceptSolutions. “We’ve worked hard to build solid, long-term relationships with FAA and DOD and, by delivering outstanding results, we’ve earned additional opportunities to provide them both with solutions that make a positive impact on air safety and national security.”



Fulfilling One Mission and Scanning the Horizon

The upgraded MADE and SAMS, together, have satisfied the original safety, efficiency, interagency coordination, and reporting objectives set forth by the 1987 Congressional Order (PL 100-223). While scheduling military operations and Presidential Movements have been the most traditional use of SUA, ConceptSolutions' new system now provides effective, real-time management information to, and improved coordination among, a variety of groups, including:

- * FAA
- * DOD
- * General Aviation – including corporate and fleet operations for routine flight planning
- * Federal Emergency Management Administration (FEMA) – Control of airspace over natural disasters and providing air corridors for access to hospitals or logistics assets
- * US Forest Service – Control of airspace over forest fires
- * Immigration and Naturalization Service (INS) and Drug Enforcement Administration (DEA) – Airspace management along US borders.

ConceptSolutions continues to enhance MADE, and will explore ways to build in more functionality to the system to meet the ongoing scheduling needs of the military outside of the FAA requirements.

Put your organization's business information to work for you. For more information about how ConceptSolutions can support your government or commercial organization, please contact us at (703) 889-8444 or info@Concept-Solutions.com.