

## Case Studies

### U.S. Air Force, Pacific Air Forces (PACAF)

#### ***The U.S. Air Force, PACAF Standardized Its Program Management Tracking System Using Microsoft .NET Tools in an XML-Browser Based Application, MCS, and MSF***

**This case study has been archived.**

##### CASE STUDY

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***The U.S. Air Force, Pacific Air Forces (PACAF) provides ready air and space power to promote U.S. interests in the Asia-Pacific region during peacetime, through crisis, and in war. When PACAF decided to standardize the way it tracked performance (past, current, and projected) of the various programs it manages, it implemented a solution utilizing Microsoft .NET tools and services, including Microsoft Windows 2000 Server, Microsoft SQL Server 2000, Microsoft Office 2000, and Internet Explorer.***


#### Situation

Inception of the Executive Decision Support System (EDSS) began in March of 1991 when the Pacific Air Forces (PACAF) Commander directed the Deputy Chief of Staff (DCS) Comptroller to develop and administer a PEER comparison program. The new program management system, which was to be modeled after the existing Tactical Air Command (TAC) and Air Training Command (ATC) programs, needed the ability to access critical command information in a timely manner and provide accurate, reliable, and consistent data for command resource decisions. The system, which would have to quickly accumulate, summarize, and access information for presentations, would dramatically improve communication of critical command information among Senior Officers and Wing Commanders.

In 1999, PACAF designed a prototype of a program management system using Microsoft® Access and Microsoft PowerPoint® presentation graphics program. In February, 2000, AF190-1102, Performance



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#### Solution Overview

##### Company

[U.S. Air Force, Pacific Air Forces \(PACAF\)](#)

##### Customer Profile

The U.S. Air Force, Pacific Air Forces is headquartered at Hickam Air Force Base in Hawaii. It provides ready air and space power to promote U.S. interests in the Asia-Pacific region.

##### Business Situation

AF190-1102, *Performance Management*, dated 1 Feb 00, provided new guidance to establish a fact-based, decision-making performance improvement system that assesses day-to-day accomplishments of mission-critical tasks.

##### Benefits

Rich XML support, easy integration with other environments, and the ability to leverage existing applications significantly lowered development, deployment, and

Management, provided new guidance to establish a fact-based, decision-making performance improvement system to assess day-to-day accomplishments of “mission-critical few” tasks. To meet AF190-1102, PACAF contracted Computer Training Academy/ Network Resource Center (CTA/NRC) and Microsoft Consulting Services (MCS) to develop its prototype into an enterprise-wide solution using Microsoft Windows® 2000 Server operating system, Microsoft SQL Server™ 2000, and Microsoft Office 2000. CTA/NRC provides planning, development, and implementation of applications designed to fulfill needs such as information management, collaboration, and information processing and specializes in delivering enterprise scale solutions using Microsoft software.

“ I believe the overall success of this project was a direct result of MSF, and the government’s decision to use a complete Microsoft solution ...the product speaks for itself—it sizzles!! ”

**Paul R. Fimano**  
Technical Sergeant  
Performance/Strategic  
Management Systems  
U.S. Air Force

## Solution

The EDSS solution, which

focuses on presenting the most critical data to the PACAF Commander, condenses, consolidates, and prioritizes data into useful information and data presentation formats, and provides current status, trend, and forecast of critical command facts. The system also provides for plans of action to achieve command goals and is adaptable to ensure that the information meets the priorities and expectation of the PACAF Commander.

Running on a Compaq ProLiant Server, all hierarchical data for each site is stored in a single SQL Server 2000 database. The system uses 40 related tables, approximately normalized to 3rd normal form for performance and coding convenience. Extensive audit trails were designed using SQL Server triggers to audit all

modification activity. A key benefit to PACAF of using SQL Server 2000 is its support for user-defined functions, a feature that saved CTA/NRC programmers numerous hours of back-end development time.

The solution was architected to scale to multiple sites, providing a wide view of any command-specific measure. It was secured using standard Microsoft Windows NT® based authentication, simplifying both deployment and administration costs. Using XSL stylesheets to generate a mixture of HTML and client side script (DHTML) provides a rich client interface, in spite of being a traditional thin client. Extensive use of XMLHTTP was used to provide very quick client/server like features for the application.

Office Web Components (OWC) is leveraged for all charting capabilities. Being able to bind an XML recordset to an Excel chart allows PACAF to very quickly build client-centric charts. Adding

administration costs.

### Software and Services

- [Microsoft Internet Explorer](#)
- [Microsoft Internet Information Services](#)
- [Microsoft Office 2000 Professional](#)
- [Microsoft Solutions Framework](#)
- [Microsoft SQL Server 2000](#)
- [Microsoft Windows 2000 Professional](#)
- [Microsoft Windows 2000 Server](#)
- [Microsoft Windows NT Server 4.0](#)

### Hardware

Compaq ProLiant Server

### Vertical Industries

Government - Public and Nonprofit Sector

### Country/Region

United States

### Solutions

Knowledge Management

### Audiences

Business Decision Makers

additional charts is "painless," and the performance, since all processing is done locally, is unmatched by any other Web technology.

The government's choice to use the Microsoft Solution Framework (MSF) eased the development process and was documented in such a way that it allowed the government to complete its detailed and normally lengthy System Security Authorization Agreement (SSAA) process with relative ease and effort. "CTA/NRC and its partnership with Microsoft through Microsoft Consulting Services (MCS) demonstrated its ability to deliver a reliable product quickly, as specified, within budget constraints, on time, and with a proven willingness to partner with the government. I believe the overall success of this project was a direct result of MSF, and the government's decision to use a complete Microsoft solution," states Paul R. Fimano, TSgt, NCOIC, Performance/Strategic Management Systems, and USAF. "And the product speaks for itself—it sizzles!"

## **Benefits**

Because the Microsoft .NET technologies are built on open Internet protocols and standards, this solution is providing PACAF with the tools and services to merge computing and communications requirements effectively. For PACAF, rich XML support from the browser through the Web server to the database server is a critical aspect of the solution.

Being easy to use and leveraging existing technologies already owned by the government were necessities in design of the EDSS solution. And ease of integration and administration within the existing Windows NT operating system environment was mandatory, as was the ability to use existing Windows NT-based account security. The agility of Microsoft .NET technologies met these requirements and significantly lowered development, deployment, and administration costs—the EDSS solution completely leverages Microsoft's latest XML technology and is a pure XML-based application. "Hands-down, EDSS is one of the best—it's by far one of the most user-friendly database applications I have experienced—EDSS is simple, flexible, and versatile", says Linda L. Winslett, GS-12, PACAF Performance Management Program Manager, and USAF.

Return on investment (ROI) for this application is measured by PACAF by the application's ability to meet the guidance specified in AFI90-1102. EDSS is also enabling the government to replace two existing stand-alone systems (Status of Resource and Training Systems Management and Biweekly Base Briefing Management) and is in line to accommodate one other future requirement (Expeditionary Air Force Management).

"I wish this approach to application development could be taught in all computer science curriculums. I would not hesitate to recommend MSF for all future government application development projects," concludes Fimano.

PACAF plans to continue to leverage the application's XML foundation to extend the client base to WAP devices and other PDAs. Future implementations of the product will extend the rich SQL Server 2000 support, such as automated import and cleansing of data using DTS, analysis services for data warehousing, SQL Server 2000, XML support, and replication to provide multi-site scalability.

With the release of Internet Explorer 5.5 and the future release of Office XP, PACAF expects to

further take advantage of the application functionality through the client. In addition, as the migration to Windows 2000 Server's Active Directory® directory service becomes a reality, this application should take full advantage of other Microsoft Windows Server System™ servers such as Exchange 2000.

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For more information on Headquarters Pacific Air Forces, Hickam AFB, Hawaii, call 808-449-4736 or visit their web site at: <http://www.hqpacaf.af.mil/>

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Press contact: [rrt@wagged.com](mailto:rrt@wagged.com)

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