U.S. Coast Guard COFR and Claims

Situation

The Oil Pollution Act of 1990 and the Comprehensive Environmental Response, Compensation, and Liability Act require vessel operators to purchase Certificates of Financial Responsibility (COFR) prior to entering U.S. waters. COFRs prove that a responsible party is able to pay its legal liability in the event of an oil spill or release of a hazardous substance.

COFRs are issued by the National Pollution Funds Center (NPFC) of the U.S. Coast Guard (USCG). NPFC maintained normal office hours; employees were on-call after hours. Automated support was limited – no remote access, outdated hardware, a database system no longer supported by the USCG, awkward work flow, and many manual operations. NPFC needed a system to share data, interact with other enterprise systems, enable remote access, and eliminate redundant data entry.

Similarly, the USCG Natural Resources Damage Claims Division (NRD) needed a case management system to support prosecution of oil spill-related claims against the Government. NRD used Lotus Notes, but most processes were manual, resulting in delays in habitat restoration and compensation to affected parties. NRD wanted automated support to improve effectiveness and save money.

SPS – Problem Solved.

SPS replaced the legacy systems with web-based Intranet systems sharing an Oracle enterprise Relational Database Management System and interfacing with existing NPFC and USCG enterprise applications. The COFR system provides a workflow engine for administering COFRs and interfaces with a USCG central repository. The Claims Processing System (CPS) provides full life-cycle claims adjudication support with integrated workflow and document management.

COFR – SPS developed a 3-tier system based on Microsoft DNA. The presentation tier operates entirely within Internet Explorer, using Dynamic HTML and Visual Basic scripting. The Web services tier runs on a Windows NT server using an Internet Information Server and Microsoft Transaction Server. Active Server Pages and VB script handle browser requests and coordinate service calls. The database tier resides on a Sun Solaris server running Oracle. SPS developed a workflow engine and seamless interfaces with the Marine Safety Information System.

CPS – Using the same technologies as for COFR, SPS developed a 3-tier Claims Processing System (CPS). Using component based design, SPS developed individual software components to provide services via standard interfaces, and an innovative combination of HTML and XML to provide extensive, yet very responsive, functionality to CPS users. CPS also captures employee time spent on a claim, calculates labor costs, and automatically sends expenditure data to Oracle Financials for billing, replacing manual expenditure calculation, and data entry.

CPS provides the claims managers with an "Inbox", which represents their assigned claims, from which they can manage their workload. At appropriate points in the claim workflow, CPS sends the claim from the claims manager to the claims supervisor and legal

attorneys for review. This automatic flow replaces the informal requests for claim reviews, thus reducing the chance that a review is missed or undocumented.

Methodology

SPS introduced NPFC to the Rational Unified Process (RUP) and iterative development. The RUP methodology mitigates risk by frequently involving stakeholders throughout development. Development proceeds in multiple iterations, allowed stake-holders to SPS to review Use Cases, review navigational screen prototypes, preview completed software iterations, participate in user testing, and witness formal acceptance tests. Functional end-user and senior management involvement was key in prioritizing requirements, identifying risks, and allocating system features to iterations.

Lessons Learned

Remote COFR access required additional security controls. SPS implemented NT Challenge Response, enabling trusted users to be established within the browser. The new COFR system dramatically changed business processes and workflows. SPS responded to this challenge with RUP iterative development and additional test scenarios involving NPFC personnel. Regarding CPS, NRD claims usually involve very large payments, often in the tens of millions of dollars, paid out over time to correspond with a restoration plan. SPS incorporated payment plans and workflows into CPS, created correspon-dence templates, and automatic notification of due dates to claims managers.

Results

The systems developed by SPS for the NPFC are considered best practices for both SPS and the USCG NPFC because they were managed and developed using the best practices of software engineering, and the systems have achieved high customer satisfaction while also meeting information technology goals.

Utilizing the same staffing level, NPFC was able to process 60.7% more claims with CPS than in the previous year, while increasing the claim closure rate. The efficiencies in claims processing can be attributed to the enforcement of existing policy in CPS, improved data integrity, streamlined data entry, improved search capabilities, accurate and weekly tracking reports, tickler reports, and the integrated workflow and document management features. NPFC personnel now issue COFRs from home during off hours, saving themselves consid-erable time and greatly reducing costs to vessel operators.

SPS presented the innovative use of XML in the CPS n-tier web architecture at a Microsoft-sponsored TechNet seminar entitled, "XML Messaging in Web-Based Applications."

The CPS system was selected as a finalist for the prestigious 2002 Excellence.gov Award. CPS was one of the government program finalists, selected from more than 125 entries, for the excellence it has demonstrated in E-Government innovation.