



Intelligent Software Solutions

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Industry

Government

Challenges

- Create intuitive interface to central repository of mission-critical data
- Provide geotemporal, interactive data analysis

Solution

- Rich Internet applications
- Dynamic data analysis

ISS delivers mission-critical enterprise applications with the Adobe Flash Platform, enabling U.S. military operations to rapidly report and coordinate efforts from war zones across key decision-making organizations.

Results

- Rapid development tools shortened time to market by six months
- Increased interagency collaboration with standardized, scalable platform
- Provided advanced data visualization capabilities on common architecture
- Achieved ability to support multiple form factors for access, view, and rich data interaction

Systems at a glance

- Adobe Flash Platform. Components used include:
 - Flex[®] framework
 - Adobe Flash Builder™ 4
 - Adobe AIR[®]
 - Adobe Flash Professional
 - Adobe Flash Player 10.1
 - Adobe ColdFusion 8

Intelligent Software Solutions

Department of Defense software developers deliver mission-critical solutions in support of U.S. military operations worldwide with the Adobe[®] Flash[®] Platform

Meeting government needs from war zones to the capital

As leading providers of integrated solutions for a wide range of government agencies, ISS collaborates with the U.S. Department of Defense by building integrated, scalable solutions using Adobe software and technology to support military operations worldwide. Beginning with an Adobe ColdFusion[®] web application in 2005, ISS has expanded that original architecture through the Adobe Flash Platform—transforming the way the U.S. military collects, analyzes, and maps data. With advanced, multi-platform technology, military operations are being perfected on the battlefield, in tactical war rooms, and in the U.S. Congress.

Previously, thick Java™ client-side technology was limiting the scalability and flexibility of enterprise applications that the military needed. By migrating to rich Internet application (RIA) technologies using the Adobe Flash Platform, the ISS strategy was to shift the heavy lifting to the server side, while still allowing a series of componentized applications to rest on a common framework.

In the past, ground information was gathered in disparately formatted documents from multiple teams, making the data difficult to standardize and consume. Military personnel needed applications with intuitive, easy-to-learn interfaces that would expose the power of applications without needing extensive training, while at the same time providing multi-point mapping capabilities. At the ground level, the solutions needed to help military personnel review troop movements and conditions, enable decision-makers to more rapidly deploy medical support to injured troops, and better coordinate reconstruction of areas in need, particularly in Iraq and Afghanistan.

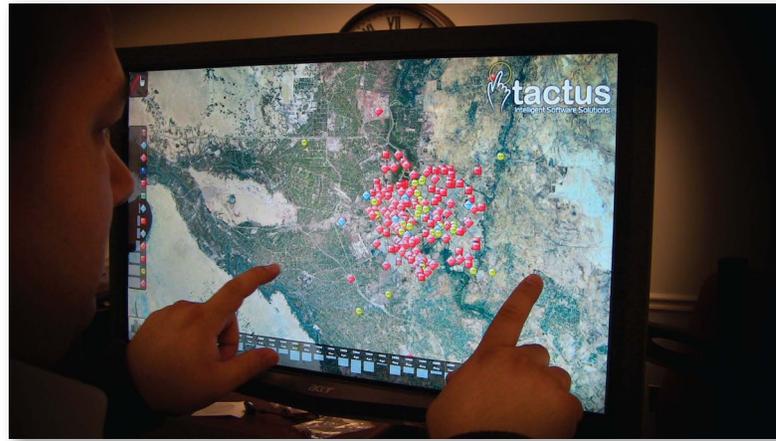
Carl Houghton, vice president of strategic initiatives at ISS, reports that ISS was previously a "Java house." But the company wanted a more comprehensive development environment that was faster and more efficient. The group evaluated various solutions, including Google Web Toolkit. The search for tools ended with the Adobe Flash Platform. Clearly, it offered the most powerful way to integrate existing resources, enable developers to rapidly build the kind of intuitive applications ISS clients require, and help ensure reliable delivery of those applications to the widest range of users.

"The Adobe Flash Platform enables us to serve the specific needs of government in the most flexible, robust, and cost-effective ways because we can reuse so much code across multiple platforms and devices—online, even in areas where connectivity is less than optimal, on mobile, and on multi-touch," says Houghton.

The commitment ISS made to the Adobe Flash Platform has resulted in a steady stream of new RIA initiatives for the U.S. military, as well as other government agencies, according to Houghton. "We discovered that in terms of total cost of ownership, the Adobe Flash Platform gives us the highest return on our investment in absolute ways," says Houghton. In a matter of weeks, 20 to 30 Java programmers transitioned to the new environment and rapidly became more productive than they had ever been.

Houghton estimates that over the course of building its first two Flex applications, the ISS team saved re-writing 38,000 lines of code by reusing programming components. That adds up to approximately six months of development, times ten developers. Additionally, when the ISS team undertook its first multi-touch application development process, they saved additional time by porting code yet again. "Investing in the Adobe Flash Platform has made it possible for us to scale for both the short and long term. The ability to write once and deploy to multiple devices has resulted in tremendous benefits for our team," notes Houghton.

By leveraging the power of the Adobe Flash Platform, Intelligent Software Solutions (ISS), a Department of Defense software solutions provider, offers a range of real-time mapping and data access applications that support troops on the ground and in the air.



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Intelligent Software Solutions

Prior to moving to the Flex framework, the ISS group had one Flash programmer assigned to making changes to the code each time there was a request. Now, that programmer is productive on more projects because there is a common mapping API that can be reused across many other product offerings.

Dynamic data access, on any device, anywhere

WebTAS FX, a web-enabled Flex analysis system, supports an arsenal of rich data collection and visualization applications, all built and deployed with the Adobe Flash Platform. The WebTAS framework supplies multi-modal data visualization components to help users correlate and sort data from multiple sources and produce standardized, polished intelligence reports.

The mainstay application under the WebTAS FX umbrella is (CIDNE) Combined Information Data Network Exchange—a massive, scalable SQL database fronted by an Adobe ColdFusion 8 application server and a Flex user interface. Supporting over three million hits per week, CIDNE helps users accurately track ground movement and trends and reconstruct events from data gathered into one central place. It also helps decision-makers rapidly respond to troops in harm’s way. Information can be easily shared across operations and intelligence units.

Using Geoquest 2, a Flex mapping application inside CIDNE that plots instance data using heat maps, users can visualize maps of operational areas from a temporal perspective. “Our end users have spent their careers relying on rich, interactive computing,” says Houghton. “Geoquest 2 delivers an intuitive point-and-click mapping interface that users can easily relate to.”

ISS recently released Tactus, a touch-screen Adobe AIR application created with Adobe Flash Builder 4, that enables users to remain productive while working in either offline or connected environments. The ideas for Tactus were derived from previous work ISS had originally done creating an application for the White House Situation Room, the application itself was highly successful, but the hardware initially necessary to leverage its visual capabilities was prohibitively expensive. ISS is also investigating taking this reporting capability to Adobe AIR for Android™ to provide mobile data collection, reporting, and synchronization when in a disconnected to connected use case.

To provide a less costly implementation, ISS deployed Adobe Flash Player 10.1 on a handful of more affordable touch screen monitors. “Adobe Flash Player 10.1 has new, intriguing multi-touch capabilities that work on inexpensive monitors,” notes Houghton. The result is a touch-sensitive, geospatially-focused Adobe AIR application that looks great and runs fast on screens common to most hardware.

ISS is using Adobe technology to migrate previous thick-client applications to RIAs, rapidly developing powerful applications accessible on the desktop, on mobile devices, in offline environments, and on multi-touch and tablet devices.



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ISS is also leveraging the power of Adobe Acrobat® Dynamic PDF, a new and exciting way to enhance the interaction between text via web services. While most dynamic data is saved in spreadsheets, Microsoft PowerPoint slides, and screenshots, ISS prototyped a solution in which a Flex application streams video of the flight of an unmanned aerial vehicle inside Acrobat Dynamic PDF. Viewers experience the complete replay of a mission, replete with zoom capabilities of the perspective and the terrain.

Increased deployments as the future unfolds

As far as future plans ISS has for expanding its use of the Adobe Flash Platform, the organization has research and development funding designated to expand its mobile device development efforts—fully expecting to migrate off the Android SDK to Adobe AIR for Android to support their new Motus mobile application. With Flash Platform applications installed on multi-touch devices running Microsoft® Windows® 7, ISS realizes that there is enormous opportunity to leverage existing code and port it across operating systems.

"The Adobe Flash Platform enables us to rapidly roll prototypes into cost-effective, marketable solutions for our customers," says Houghton. "In one integrated, rapid development framework, we can provide advanced functionality that makes it easy for users to interact with centralized data in ways never before possible. The bottom line is that these solutions are helping save lives."

For more information
www.adobe.com/flashplatform



Adobe Systems Incorporated
345 Park Avenue
San Jose, CA 95110-2704
USA
www.adobe.com

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