CoreSHIELD

Integrated enterprise framework

It's no secret that government agencies strive to collaborate and communicate with greater ease, yet are challenged to find integrated technology solutions that allow people to reach across organizational boundaries—particularly during times of crisis. Knowledge, relevant research, and basic data have historically been siloed in public and private entities where it has been difficult for colleagues to find.

When Eric Hoffman, technical director at Minnesota-based Datastream Connexion began to work on a pilot project in 2004 to address these complex issues, little did he know how large an ecosystem would evolve. Nor could he have imagined how one infrastructure would so greatly impact the lives of the people who use it and the citizens it protects. CoreSHIELD is operated by the National Center for Food Protection and Defense, a Department of Homeland Security Center of Excellence.

What started as a single portal built on Adobe® ColdFusion® has matured to become CoreSHIELD, with 'Core' standing for 'common organization registry environment'. CoreSHIELD is the framework that holds together dozens of customized portals, such as FoodSHIELD and the Food Emergency Response Network (FERN), which share resources under a common umbrella.

Based on Adobe ColdFusion, and with multiple portals built entirely with Adobe ColdFusion Builder™ and Adobe Flash® Builder™, CoreSHIELD enables 350,000 users across federal, state, and local government agencies, as well as laboratories and academia, to work collaboratively toward improved national security, a more safeguarded U.S. food supply, and better public health practices.

Rapidly enabling enterprise architecture

Adobe technology permeates every part of the CoreSHIELD ecosystem. Hoffman lauds the ease, power, and rapid development capabilities that Adobe technology enables, noting that he is no longer hamstrung by unrelated technologies and application servers.

"Rather than develop siloed applications using other protocols, agencies are dropping Flex® applications onto the CoreSHIELD infrastructure using our API. Developers are amazed at what this integrated approach can do," says Hoffman.

Hoffman notes that Adobe technology is ideally suited for use in dynamic organizations that do not operate in repetitive, template-like ways. Greater interoperability among applications has resulted in increased end-user productivity and easier collaboration among disparate agencies. Adobe Acrobat® Professional enables users to share PDF documents, meeting stringent government security standards.

CoreSHIELD
Stillwater, Minnesota
www.coreshield.org

Datastream Connexion
Oakdale, Minnesota
www.dscxn.com

National Center for Food Protection and Defense
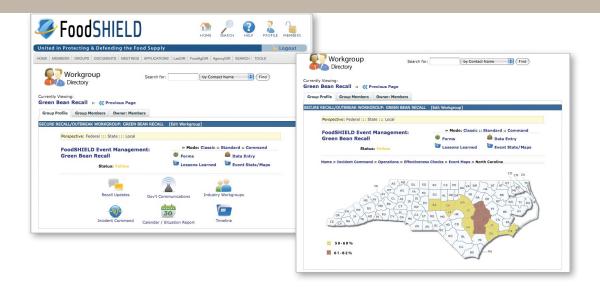St. Paul, Minnesota
www.ncfpd.umn.edu

CoreSHIELD participating federal agencies include:

U.S. Department of Homeland Security (DHS)

U.S. Food and Drug Administration (FDA)

U.S. Department of Agriculture (USDA)

Challenge

· Enhance domestic security with more secure interagency communication and collaboration platform

Solution

· Business transformation
· Training and collaboration
· Integrated infrastructure to support branded portals

Innovative CoreSHIELD ecosystem built with more than a dozen Adobe solutions is an extensive, web-based platform that enables federal, state, and local government agencies, as well as universities and private industry to collaborate and respond quickly to domestic threats.

Benefits

· Delivered backbone for dozens of portals for previously disparate entities
· Increased safety of U.S. food supply through disaster planning
· Shortened lifecycle of food recall
· Met evolving set of requirements
· Enhanced communication and collaboration via web and mobile
· Deployed secure training platform
· Increased development productivity threefold

FoodSHIELD: umbrella that protects food from farm to table

The FoodSHIELD portal touches personnel across local, state, and federal agencies responsible for inspecting, regulating, and transporting the U.S. food supply. Collectively, regulatory officials and food producers in all 50 states coordinate using FoodSHIELD resources.

Hoffman explains how FoodSHIELD has transformed the way disparate agencies and laboratories—with their own protocols and expertise—now interrelate to shorten the lifecycle of a food recall. In the case of a contamination outbreak, there may be one laboratory that has figured out the cause and knows exactly what to do. Previously, that knowledge would exist in a vacuum; but now with FoodSHIELD, information is exchanged efficiently among various teams.

FERN Online: collaboration and training for protection and response

One of many powerful portals that sit on top of CoreSHIELD is FERN Online, the integrated network of local, state, and federal food testing laboratories that comprises the Food Emergency Response Network (FERN). FERN detects threats, prepares for fast response, and helps the nation recover following incidences.

When a critical incident occurs, no matter which CoreSHIELD portal a user is currently working in, users rapidly utilize single sign-on functionality to access FERN and immediately participate in the crisis at hand—without leaving their familiar environment. Someone working in the FERN portal can transparently reach into CoreSHIELD to find a subject matter expert regardless of which agency they are with. They can also interact with other emergency response agencies.

The ability to communicate and collaborate via the web while working in the FERN portal is an excellent example of fully integrating Adobe Connect into an end-to-end solution. When users initiate an ad-hoc web meeting or a large-scale webinar, or participate in online training, they do not have to launch a separate application or sign in to any additional program.

Adobe Connect™ is being used extensively in three key areas. First, the CoreSHIELD project management team meets virtually on a regular basis, using the web communications capabilities in Adobe Connect to cost-effectively move the development process forward by sharing data, issuing reports, and conducting streaming video demonstrations. Collaborative web communications shortcut distances among remote team members, accelerate development cycles, and minimize travel time and expenses.

> *"The migration path from Flex 3 to Flex 4 was very straightforward. We were able to complete our migration, unit testing, and launch our application in about a day, which is pretty impressive considering the size and scope of the project."*

Eric Hoffman
Technical director,
Datastream Connexion

On a larger scale, CoreSHIELD accommodates thousands of people for one-to-many seminars that broadcast government updates and keep users current on all food and defense regulatory events and policies.

Finally, Adobe Connect is being used as a full-scale training platform across the entire CoreSHIELD user base—for teaching food inspection practices via streaming, on-site video, just-in-time education sessions during crises, and educational purposes on the fly, to name a few.

Lean team leverages full complement of tools

Starting with only two developers in 2004, Hoffman's development team remains lean with a headcount of five. The team stays small because they can quickly build proof of concepts that they know will roll out perfectly, can rapidly add entire new sections to applications, and can easily revamp core interfaces.

The Flex SDK is filled with many premiere components, all of which streamline workflow. Flash Builder supports new components in the Spark library that allow developers to shave build time while customizing user interactions—resulting in a greater level of personalization for end users, which helps to build application awareness and loyalty.

Hoffman adds that overall, Flash applications have faster load times and improved application responsiveness. "The migration path from Flex 3 to Flex 4 was very straightforward. We were able to complete our migration, perform unit testing, and launch our application in about a day, which is pretty impressive considering the size and scope of the project," says Hoffman.

ColdFusion makes it easier to manage the synchronization of CoreSHIELD databases and directories to Adobe AIR applications to provide offline access. Adobe AIR applications enable users to rapidly search databases to find relevant expertise and contact information offline, and then fully interface with web applications when Internet connections are available.

Many other Adobe tools are integrated into CoreSHIELD, including Adobe RoboHelp® for building help systems, Adobe Captivate® for creating screen walkthroughs, Adobe Contribute® for managing and updating web content, and Adobe Acrobat for helping to ensure that critical research documents can be distributed to as wide an audience as possible.

"The CoreSHIELD team remains fully committed to Adobe technology because Adobe has its eye on enterprise. It draws a strong and healthy roadmap for us to continue to rapidly respond to events and deploy advanced applications on an incredibly stable, scalable, secure infrastructure."

Eric Hoffman
Technical director,
Datastream Connexion

Toolkit

Adobe Flash Platform. Components used include:

• Flex framework

• Adobe Flash Builder

• Adobe AIR

Adobe ColdFusion

Adobe ColdFusion Builder

Adobe Connect

Adobe Acrobat Professional

Adobe RoboHelp

Adobe Captivate

Adobe Contribute

Platform

Windows 2008, Mac OSx and Red Hat Linux database-independent system currently deployed on SQL Server 2008

CoreSHIELD is being managed in a heterogeneous environment with ColdFusion running on Mac OS, Microsoft® Windows®, and Red Hat® Linux® operating systems and connecting to SQL Server 2008 databases on the back end.

Hoffman explains that Adobe technology maximizes the effectiveness of the CoreSHIELD infrastructure because of total product integration—emphasizing that Adobe ColdFusion does the heavy lifting better than any other native language, the Adobe Flash Platform is the most powerful, cost-efficient development environment on the market, and there is no easier, more reliable way to conduct training and enhance web collaboration than with Adobe Connect. He has a level of trust with Adobe that he does not experience with other vendors.

"The CoreSHIELD team remains fully committed to Adobe technology because Adobe has its eye on enterprise. It draws a strong and healthy roadmap for us to continue to rapidly respond to events and deploy advanced applications on an incredibly stable, scalable, secure infrastructure," says Hoffman.

For more information
www.adobe.com/flashplatform
www.adobe.com/government