**IBM**

# State of Missouri Office of Homeland Security: Boosting disaster preparedness across the state

## Overview

- **Business Challenge**

  To better prepare for future natural and man-made disasters and give first responders the ability to provide the speed and quality of emergency services that the public has a right to expect, the State of Missouri Office of Homeland Security needed to provide a new level of access to existing information and disaster management tools and resources.

- **Solution**

  IBM Global Technology Services worked with the state to design and implement the Missouri Emergency Resource & Information System (MERIS), a solution that makes diverse incident management systems, information systems, resources and databases accessible to first responders through an integrated, secure Web portal. MERIS also provides management and collaboration tools to make disaster response better coordinated, faster and more effective.

- **Key Benefits**
  — Enables faster, better coordination of emergency response efforts
  — Increases situational awareness
  — Enhances emergency preparedness

> "*[MERIS is] going to help us deal with disasters much more effectively than we ever could before.*"
>
> – *Paul Fennewald, director of Homeland Security, State of Missouri*

## Business Benefits

- Enables faster, better coordination of emergency response efforts through immediate access to a broad palette of critical information

- Provides access to a statewide incident management system

- Increases situational awareness, giving first responders a clear understanding of emergencies

- Enhances emergency preparedness through greater collaboration and access to information

- Leverages existing capabilities by integrating systems already in place

- Provides an open platform for future expansion

- Avoids the use of proprietary technological solutions for access through Web enablement

- Simplifies access through a single sign-on and consistent Web interface

*"We wanted MERIS to be a nearly transparent portal to access the good systems and resources we've already got. We didn't want to replicate or duplicate any existing capabilities. Rather, we wanted to integrate with them."*

*— David Finch, special assistant, Missouri Department of Homeland Security*

### Preparing for the "big one"

One day, Missouri may very well become the scene of a major natural disaster. It is the location of the New Madrid Fault, which in 1812 was the location of the largest earthquake ever recorded in the contiguous United States, a magnitude 8.0 temblor so severe that it caused the Mississippi river to run backwards in places. Like the more famous San Andreas Fault, a major quake along the New Madrid is overdue. When it happens, the impact will be almost unimaginable.

"There's a potential for millions of people to be displaced," says Paul Fennewald, director of Homeland Security for the State of Missouri. "We know a big quake is going to happen, we just don't know when—and we need to be prepared to respond to it."

When a disaster happens, rapid response saves lives. The faster and more coordinated emergency response efforts are, the more effective they can be. But with dozens of first responder agencies and multiple jurisdictions potentially involved, it becomes very difficult to manage the emergency in a cohesive manner.

During and after Hurricane Katrina, the nation learned first-hand how difficult it can be to provide the level of response, mitigation and recovery that the public has a right to expect. The populace should feel confident in the ability of emergency responders to handle any situation that arises—it's important in maintaining peace of mind.

In 2006, driven by lessons learned from the response to Hurricane Katrina and well aware of the threat caused by the New Madrid Fault, the state of Missouri concluded that it needed to find a way of responding to emergencies more effectively, in order to save lives and mitigate damage. The New Madrid quake was chosen as the planning model, according to David Finch, special assistant, Missouri Department of Homeland Security, for good reason. "We knew that if we could develop an effective way to respond to a New Madrid quake, we'd certainly be able to handle a lesser emergency."

### Emergency information not getting to those who need it

Emergency managers across the U.S. already have access to a wide variety of information resources and incident management tools that help them respond to disasters. These resources range from police dispatch systems to existing Geographic Information Systems (GIS) infrastructure with terabytes of spatial data to hospitals and EMS status and much more. In addition, there are incident management systems—collaboration tools and reporting databases—that are used by incident commanders located in Emergency Operations Centers (EOCs) at the state and/or municipal level to maintain awareness of and control over the response to incidents in the field.

The difficulty from a statewide perspective is that these resources are not necessarily accessible to *all* emergency responders. This is a problem because, as was clearly demonstrated by both the 9/11 attacks and Hurricanes Katrina and Rita, while all disasters start locally, once they become severe enough they can impact a very wide area and require the involvement of emergency responders from hundreds or even thousands of miles away.

The issue is one of ready, rapid access to existing information across the entire first responder and emergency management community and even beyond. By providing a high level of access, response efforts can be better coordinated and faster, and therefore more effective. St. Louis officials recognized this challenge and created a Virtual Emergency Operations Center (VEOC) under the aegis of the St. Louis Area Rapid Response System (STARRS), a collaborative effort of several municipalities and counties in the St. Louis area. The VEOC provides comprehensive incident management capability and access to all the information needed for disaster response from agencies such as the police, fire, EMS, military, DOT and even the private sector, throughout the St. Louis region.

The efforts of STARRS provided the impetus for a statewide initiative to provide similar capabilities across Missouri. MERIS is similar in concept to the STARRS' VEOC, which also utilizes IBM WebSphere collaboration tools and NC4's E Team Incident Management software. It is designed to provide near real-time situational awareness and synchronization of emergency response statewide. But the system has to meet other important goals as well. "When we conceived of MERIS," David Finch says, "we had some very clear goals in mind. First, we wanted to have a secure, robust platform that anyone with access to the Internet and the proper authorization could use. Second, it had to be open and expandable, to meet future needs. And last but certainly not least, we didn't want to saddle anyone with yet another system that they'd have to train on and support. We wanted it to be a nearly transparent portal to the systems and resources we've already got. We didn't want to replicate or duplicate any existing capabilities. Rather, we wanted to integrate with them."

**Doing business in a new way**

With so many different resources owned by so many different organizations, alignment and optimization of business processes was a critical part of MERIS development. This is where IBM came in. "The first step was for IBM to help us transform our existing business processes," Finch says. "In order for the system to work, we had to create clearly defined processes and protocols that would enable our users to transparently access any existing or future information system, all from a single, integrated user interface accessed by a single sign-on, using only a Web connection." IBM also acted as project manager, coordinating the activities of the

subcontractors that did the actual development of MERIS, as well as providing the WebSphere Portal software platform on which it is deployed. MERIS is based at the Missouri state EOC, which is located in a hardened facility with multiple physical and logical inputs and outputs to help ensure that it stays on-line during an emergency. There's also a remotely located back-up site. "It's important to understand, though, that this isn't a monolithic system," says Finch. "All we're doing is integrating existing systems located at various locations. Even if we go down completely, it won't affect those systems…nor would a failure of one of them affect us."

MERIS rests on key IBM middleware including WebSphere Portal Server, WebSphere Application Server and DB2 database software. Running on this platform is a core application, the VirtualAgility OPS Center, which integrates MERIS' other components and provides a single sign-on capability with secure identity management. These components include the VirtualAgility WorkCenter and Safeplans ERIP planning solutions; an enhanced version of the E Team online incident management tool; and Lotus Sametime for sharing information and communicating. The platform also offers Web conferencing, chat, e-mail and whiteboarding, as well as providing an incident mapping capability. This integrated portal solution positions the state to seamlessly add future functionality.

MERIS extends beyond the boundaries of the emergency management community. It can also make the private sector part of the picture, by opening up new channels for information exchange. For example, first responders could potentially find out about hazardous cargo on a derailed train by tapping information from the rail carrier, or learn what supplies might be available locally at warehouses and stores to help with emergency relief.

### It's all about the mission

The integration of emergency systems is powerful because it extends existing capabilities in a new way, and to new users. "A lot of our emergency personnel across the state have never had access to this kind of information or these kinds of emergency management tools before," says Paul Fennewald. "That's important. The systems have proven themselves time and again…they work. Now, for the first time, we're giving those tools to everyone who can benefit from them. That's going to make us all safer, and it's going to help us deal with disasters much more effectively than we ever could before."

### For more information

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