

Regional Effort Forges Emergency Coordination System

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Multistate program aims to develop peer-to-peer information sharing, situational awareness capability.

The Port Authority of New York and New Jersey has launched an initiative to enhance interoperability between area command centers during an emergency. The effort will create a common communications architecture to enhance participating organizations' situational awareness in a crisis.

Events such as the September 11, 2001, terrorist attacks on the World Trade Center and the Pentagon have regional and national repercussions. The chaos at the epicenter of a disaster calls for immediate and accurate communications between first responders and emergency management organizations. However, while strides have been made to enhance the interoperability of first responder communications systems, emergency management officials note that coordination between command centers is lacking. Regional organizations are beginning to fill this niche by promoting efforts to coordinate and manage information sharing. Through these area cooperatives, municipal and state bodies seek to create systems that will connect to federal agencies seamlessly during a crisis.

The regional Information and joint awareness network (RIJAN) is an effort by the Port Authority of New York and New Jersey to form a multiagency emergency planning and collaboration system. The initiative is important because the region is home to some of the busiest commercial cargo ports and transportation hubs in the United States. By coordinating area agencies, the Port Authority plans to create a more rapid emergency response capability in the event of a major disaster or terrorist attack.

The Port Authority's regional information and joint awareness network (RIJAN) is one such effort. Its goal is to test and showcase command, control, communications, computers and information systems for interagency data sharing and coordination. RIJAN is a multiagency collaboration hosted by the Port Authority to provide consequence management planning, training, response management and exercises across the region. "The notion is to jointly develop at the local, state and federal levels communications technology and protocols to facilitate the exchange of information between command nodes throughout the full life cycle of a security crisis," says John P. Paczkowski, the Port Authority's director of operations and emergency management.

Noting that little or no attention is focused on communication and integration between regional and national command nodes, Paczkowski maintains that a need exists for peer-to-peer communications and information sharing. While interoperability between first responders is a necessity for a localized hazardous materials incident or a fire, larger events require command centers because their containment is a complex matter involving many agencies. For example, although the September 11 attacks were local to downtown Manhattan, the impact was both regional and national. "You had a major shutdown of the transportation system. We shut down the port. There are all kinds of things that must be communicated between agencies when an event like that happens, but we don't have an effective command and control medium that's secure and survivable to do that," he says.

The Port Authority is responsible for operating transportation, trade and commerce facilities in a 1,500-square-mile area that includes New York City's greater metropolitan area. Reporting to the governments of both New York and New Jersey, the Port Authority manages all of the region's major commercial airports, marine terminals and interstate bridges and tunnels.

To meet its goals, the Port Authority took an approach similar to the U.S. military's efforts to create joint command and control systems. "Like the military, we had to figure out how to coordinate disparate organizations over extended distances for a common mission or objective. That led us to begin

investigating the issue of how our emergency operations center interfaced with other emergency operations and command centers in the region," Paczkowski explains.

RIJAN was inspired by an existing regional multiagency effort called TRANSCOM, which was formed to coordinate the construction and management of major transportation arteries throughout Pennsylvania and its neighboring states. As transportation systems became more sophisticated, a system of command and control protocols and technology standards became necessary for efficient management.

TRANSCOM has an operations center that maintains a common operational picture of the regional transportation situation. Staffed 24 hours a day, seven days a week, the facility provides participating agencies with geospatial information systems (GIS) location data and other sensor feeds through a common network. Paczkowski adds that TRANSCOM is not a command and control node, but it serves to facilitate network coordination during a transportation crisis.

Emulating TRANSCOM's success is a key goal for RIJAN. "What we'd like to do is take that same approach for a regional coalition in partnership with the Department of Homeland Security [DHS] and other federal agencies and work on this region as a national test bed for interagency command and control," Paczkowski says.

The Port Authority has spent the past 20 months working to gain the acceptance of local agencies and organizations, says Jim Cooper, security systems manager with the Port Authority's Office of Emergency Management. The New Jersey state attorney general's office recently accepted the RIJAN concept through its homeland security planning group. This is an important development because it places the effort at the county level within the New Jersey state government. "We're now working with six counties and the City of Newark on the RIJAN concept. Now it's down to brass tacks to put together the architecture to support the network," Cooper says.

The Port Authority also is on the executive steering committee for the DHS High Hazard Urban Grant Program for New York City and Newark, New Jersey. Cooper notes that the participating counties and municipalities recognized the critical need for situational awareness in an emergency. "In a crisis, as an incident commander, you can't take the time to get the word out to everyone. There's a lot of action that needs to take place concurrent or parallel to what's going on at the main incident site. Unless those other agencies have situational awareness and can assess the situation on their own, they're more or less powerless to take any concrete action," he explains.

The RIJAN effort seeks to provide seamless communications and information sharing among state, local and federal agencies. Organizations such as the U.S. Coast Guard maintain several regional command centers in the New York metropolitan area.

The 2003 blackout that occurred in the eastern United States and parts of Canada offers an example of the need for added agency coordination. Although a number of government and state agencies were involved with response, they were not coordinated enough to operate efficiently. "At the end of the day, it worked, but thank God we didn't have another crisis on top of it, like a terrorist attack," notes Paczkowski.

The technology is now available to create a peer-to-peer network such as RIJAN. It is already in use with programs such as TRANSCOM and the U.S. Department of Transportation's intelligent transportation system architecture, Paczkowski shares. These efforts provide a template for adopting a set of standards and protocols to be implemented regionally. But the technology is the easy part, he says. The challenge lies in forging agreements between institutions and breaking down the communications barriers between agencies to facilitate interoperability.

While the DHS has shown interest in RIJAN, the Port Authority has not yet found a specific agency within that organization to fully support it because the effort's goals cut across several bureaus' areas of responsibility. "There is no single neat handhold for [RIJAN]. There's no natural champion in DHS for this kind of thing," Paczkowski explains.

Another difficulty is that the DHS is brand new and still in the process of building its internal architecture. As a result, efforts such as RIJAN must compete with many other related initiatives and programs seeking sponsorship.

Because support from the federal government has not yet materialized, the Port Authority is moving ahead by building a consensus within the New York and New Jersey region and sharing information with other efforts around the nation. One such undertaking is a coalition formed by Colorado, Oklahoma and Texas. Although these states share similar command and control requirements, they differ in distance and resource density, Paczkowski points out. While New York City represents a resource- rich, congested urban environment, many regions in the Midwest and West have the opposite problem-resources that are hundreds of miles away from a crisis point. The main challenge for these states is coordinating and sharing information to mass resources in an emergency, he explains.

By exchanging information with other regions and shared interests, the Port Authority seeks to inform the DHS better about the need for regional command and control and to highlight the number of initiatives underway in this area. Paczkowski hopes to convince the department to focus first on integrating command and control at the regional level before scaling up to national level coordination.

Another challenge is persuading local organizations to accept RIJAN. The first responder community in the New York area is known for its unique cultures and histories. These traditions can be resistant to change. But the Port Authority's concept does not require participating organizations to alter the way they do business, except to pass information across the network. "What we needed was a concept that didn't demand a change in culture or history, that was flexible enough to provide peer-to-peer communications and facilitate command and control and that was situation-driven. What we didn't do was presuppose any kind of new or fixed command hierarchy. We simply recognized that there is a collection of agencies with mutually supporting missions and different ways of doing things, and what we needed to do was to have a network and communications system flexible enough to support them," Paczkowski says.

To develop a peer-to-peer command and control system, the Port Authority examined a number of commercially available technologies. One product selected is Digital Sandbox's Site Profiler software. The product helps authority personnel determine a facility's vulnerability to a variety of terrorist attacks such as car and truck bombs (SIGNAL, February 2002, page 57). A key requirement for selected commercial systems is the ability to access GIS data. "We concluded that GIS needed to be the foundation upon which all these other tools would work," explains Cooper.

GIS-enabled software tools such as Site Profiler enable crisis managers to see the location of an event on a map of the region. The Port Authority is using a crisis management tool called EM 2000 that features sensor interfaces to integrate data from legacy systems such as video cameras. The agency has more than 1,000 currently installed in the region and plans to have more than 4,000 operational within two years.

Cooper notes that, when the agency first began looking for commercial management tools, it was unable to find any that permitted legacy systems such as cameras to be integrated. "There wasn't any one tool out there that could take these cameras and overlay them onto a GIS environment to provide real situational awareness to someone not familiar with the facility or location," he says.

The Port Authority also ensured that the tools it adopted met specific standards for content and communications to interface with other agencies. Cooper notes that the goal was not to be application-centric but to operate on a standard communications backbone using Defense Department approved content management tools. The Port Authority also is working with the U.S. Army's Communications Electronics Command at Fort Monmouth, New Jersey, to develop a Microsoft Office-based environment. By using familiar tools such as Microsoft Word, Excel and Outlook, commanders can have an intuitive, easy-to-use tool in a high-stress, chaotic environment, Cooper says.

Additional information on the Port Authority of New York and New Jersey is available on the World Wide Web at www.panynj.gov.

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