

Speaking the same language

Homeland security has agencies looking to improve communications

BY PHIL PRIMACK

A savvy technology entrepreneur is always on the lookout for new opportunities, especially in a market as hot as security. So Vanu Bose was ready when the National Institute of Justice (NIJ), which is now part of the Department of Homeland Security, called for proposals to improve “interoperability,” the clunky but apt label for technology that allows police, fire, and other agencies to communicate with each other when responding to acts of terrorism and other emergencies.

“Interoperability means different things to different people,” says Bose, son of stereo-speaker pioneer Amar Bose and CEO of Cambridge-based Vanu, Inc. “But the fundamental problem is that different organizations show up at an incident with different radios, using different bands and different standards. If you have a terrorist attack, police, fire, ambulances, and federal agents are often all over themselves. They can’t talk to each other, or to the governor, who is probably using a commercial cell phone.”

The cost of upgrading or replacing every communications system in a state or region is prohibitive, so NIJ was looking for more efficient solutions. Bose thought he had one in his Virtual Patch System. The size of a personal computer, Bose’s Virtual Patch uses software to link different communications hardware or frequencies, enabling a fire department on analog radios to speak almost instantly to police on digital systems or on different frequencies.

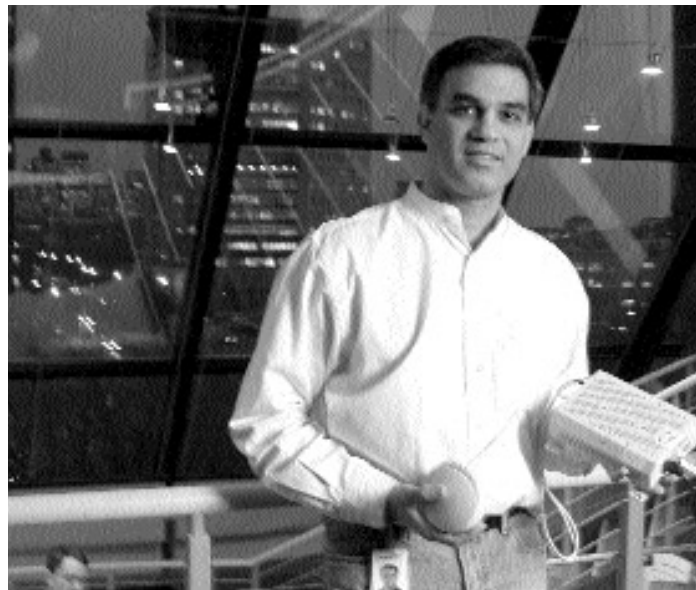
With so much federal homeland security money flowing into the states, business must be pretty good, right? Not exactly, says Bose.

“We have stopped pursuing the Virtual Patch project because we don’t know what to sell” or to whom, says Bose. “We have demonstrated the technology, but where do we go now? What are the requirements and specifications? We can invent the widget, but we need to know what you want the widget to do.”

M/A-COM saw similar opportunity in those homeland-security hills, recalls Rick Hess, former president of the Lowell-based company. “After September 11, everyone was talking about interoperability,” says Hess, who is now CEO and president of Integrated Fuel Cell Technologies

in Burlington. Even before the World Trade Center attacks, M/A-COM had developed an Internet-based system into which first responders could tap in order to communicate, he says.

“We thought everyone would sign up and the interoperability problem would be fixed, especially with [the Department of] Homeland Security devoting enough money to do so,” says Hess. “Then the politics and reality set in. The technology exists to largely solve the interoper-



Vanu Bose: waiting to patch together police and fire radios.

ability problem, but who pays for it? Who organizes it? Under what circumstances do people get to talk to each other, and which people? Someone has to set the rules.”

NEED-TO-KNOW MENTALITY

Other states can use strong county governments—which the Commonwealth lacks—to centralize disparate communities and jurisdictions. In Portland, Ore., for example, the Connect & Protect program centralizes all 911 centers in the city and surrounding Multnomah County into a single center that uses Internet-based technology to automatically—no humans involved—send emergency

alerts to state and local public safety agencies, schools, hospitals, and private sector organizations over what the program calls a “centrally managed, highly survivable, highly secure wide-area network.”

In September, Connect & Protect was named one of five finalists for the first Mitretek Innovations Award in Homeland Security, a prize given out jointly by the Ash Institute for Democratic Governance and Innovation at Harvard’s Kennedy School of Government and by Mitretek Systems, a nonprofit scientific research and systems engineering firm.

Connect & Protect’s technology, which was developed by a public-private partnership called Regional Alliances for Infrastructure and Network Security (RAINS-Net), enables each participant in the network to set criteria for the alerts it wishes to receive over the Internet. For instance, the fire department in a particular town may want to know about serious fires only within three miles of its border. But according to RAINS-Net director Fred Granum, technology is not the only thing that makes Connect & Protect work.

“The technology is not magical,” says Granum. “The magic is getting the culture and the socialization to work. Getting jurisdictions to change from a need-to-know to a need-to-share format is a very difficult issue to overcome.”

Federal, state, and local public safety officials here in Massachusetts agree on the need to establish protocols for communications between them, and they have been meeting for years to do so. While progress may appear slow, it is real and steady, says state Secretary of Public Safety Edward Flynn, who as police chief in Arlington County, Va., led the recovery effort at the Pentagon after the September 11 attack.

“You can look at the time between 9/11 and now and say either, ‘I can’t believe how much hasn’t been done’ or ‘I can’t believe how much *has* been done,’” says Flynn. “Government authority is purposely fractured in this country. We have multiple levels of government, all of which have veto powers over each other.”

As if jurisdictional challenges weren’t enough, key players within a single jurisdiction—especially police, firefighters, and emergency services—are often fierce turf fighters. After all, at any major incident, whoever controls communications tends to control the scene. First responders are sometimes not on the same wavelength—literally

or figuratively.

“There’s interoperability, which relates to how the technology works, and then there’s ‘intertalkability,’” says Boston Police Captain William Bradley, the department’s night supervisor for 911 operations. “Each jurisdiction has jargon indigenous to its center. For example, for Boston police, ‘code 10’ means lunch. In Cambridge, it could mean a breaking-and-entering in progress.” Reaching agreement on such codes (and many departments no



Public Safety Secretary Edward Flynn: riding herd on a “purposely fractured” government.

longer use codes at all) might seem simple, but it requires intent and a clear direction, says Bradley. He says it took him a year just to get Boston police, fire, and EMS officials to the table to agree. Those three key first responders now have a communications agreement. But Boston’s schools, hospitals, utilities, and other institutions are not plugged into this communications protocol.

Key players are often fierce turf fighters.

Flynn has used both carrots and sticks to change the prevailing mindset. In early 2004, the state established five homeland security regional planning councils, each of which receives federal Homeland Security money that passes through the state—which last year totaled \$45 million, with 80 percent going directly to localities. Each regional council received \$2 million for interoperability, but Flynn required each to submit a comprehensive plan, including a risk assessment, before that money could be

spent. Those plans were filed in November. "These councils have often brought together people who have never talked to each other before," says Flynn.

Carlo Boccia is director of the homeland security planning council that includes Boston and eight other cities and towns in the metropolitan region. Since March, he has been Mayor Thomas Menino's top advisor on emergency management and homeland security, arriving in Boston after serving as agent-in-charge of the New York office of the US Drug Enforcement Agency. While Bradley has concentrated mainly on communications, Boccia says interoperability involves far more.

"We have to deal with all of the cultures and all of the different disciplines," says Boccia, who has the advantage of reporting directly to the mayor, not to the police or fire departments or emergency services. "Interoperability isn't just about communications. It's about what we need to do so we can function in any event and any discipline, whether it's communications, operational response, detection devices, or alarm and alert systems."

Boccia says Boston's various public safety players have signed a memorandum of understanding on such issues. "It has taken longer than I would like to get to this point, but now we're there," says Boccia. "The difficult job is over.

We have agreement on what we need and how we will implement it. Now we can begin to engage operationally."

Still, not everyone who would be involved in response to a terrorist act or other major incident, including area hospitals, is linked together yet. Emergency medical services communicate with hospitals through their ambulance vendors, but so far the city's medical institutions are not formally tied to an interoperability plan. Again, that reflects the problem of multiple jurisdictions and disparate authority, says Boccia. "In White Plains, [NY,] they have a new commissioner of public safety who can do things that bind police, fire, EMS, and all the environmental, housing, school and other agencies," says Boccia. "I cannot do that here. We have to negotiate with each entity."

TEARING DOWN SILOS

Not that he has to start entirely from scratch. Since the 1970s, for instance, more than 100 departments in eastern Massachusetts have had their radio systems linked through the Boston Area Police Emergency Radio Network (BAPEREN), which was formed in the wake of antiwar riots in Cambridge. Homeland Security funds are being used to upgrade that system, which hasn't been overhauled in decades, says Brookline Police Chief Daniel

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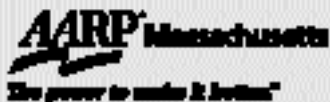
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O'Leary. He says recent events, such as the Democratic National Convention and the unruly celebrations that broke out after New England Patriots and Boston Red Sox championships, offered local departments real tests of their communications systems and other interoperability plans.

"I don't know how many parts of the country can say they have 122 cities and towns that can talk to each other," says O'Leary.

But fire departments are not linked to BAPERN. Neither are hospitals and schools. So about a year ago, when Brookline ran a test exercise, evacuating Brookline High School ostensibly due to an odor, the emergency management team worked together effectively. That team included representatives from police, fire, ambulance, public works, and other public agencies—but no one from hospitals in the nearby Longwood Medical Area.

That gap is common across the country, says Joe Trella, a senior policy analyst at the National Governors Association. "We have this silo mentality," he says. "Law enforcement has gotten better at providing information across jurisdictions, but the disconnect is in notification to hospitals and schools." Trella notes that the massacre of students taken hostage in the Russian town of Beslan in September may have served as a wake-up call.

Trella adds that while major cities such as Boston have at least moved toward interoperability, progress lags in rural areas. "At the state level, we've seen some fits and starts on progress in interoperability, but for the most part, it's in major metropolitan regions," he says. "States definitely understand the challenge to include non-urban areas in their planning, but major urban areas are just easier to deal with. And the issue is not the technology. A lot of people simply do not want to talk one another."

Technology may not be the issue, but it could *become* the issue if state and local officials are not careful, says Flynn. "We don't want to back into a vendor-driven strategy to spend on new technologies when all these communities have already hemorrhaged money on old technologies," he says. "We need interoperability that builds on old capacity," such as BAPERN. Flynn also says that any spending on interoperability aimed at dealing with terrorism or other major events needs to be applicable to ongoing crime fighting and other obligations.

In the end, says Flynn, it's important not to turn interoperability into an end unto itself. He recalls what happened when police, fire fighters, and other first responders showed up at the Pentagon on September 11, 2001. "Few of our radios were interoperable, but we managed to make things work," says Flynn. "Some level of interoperability will always make things easier, but it is not a cure-all in itself. And the lack of it does not mean we won't succeed in a given situation." ■