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Software
BlazeTech software prepares for the worst by looking for vulnerabilities

By Elizabeth Dinan

What would happen if all hell broke loose? Or a portion thereof?

Say a car bomb detonated in an industrial warehouse, a fuel truck plowed into a chemical tank, or a dirty bomb was dropped onto an urban neighborhood. How would the surroundings be affected? What gasses would be released and for what distance would they be a threat?

BlazeTech has the software that will illustrate those and other hells.

Specializing in explosive, fire, chemical dispersion, aerosol processes and structural failure analysis, the Cambridge company's software uses known information to quantify a variety of terrorist-related hazards. Using a combination of physics, chemistry and technology, the potential hazards that are revealed can be used to take preventative measures.

Founded in 1998 by Venkat Devarakonda (senior engineer) and Albert Moussa (president), the company's software products simulate the behavior of chemical and biological agents during storage, release and degradation. The company's focus a decade ago was on environmental concerns, while today it has shifted to homeland security.

Ten years ago the chemicals of interest were different, Moussa says, though he's not at liberty to identify those agents. Today the BlazeTech programs analyze a gumbo of chemical agents including sarin, anthrax, nerve gas, mustard gas, tear gas, cyclo-sarin and botulinus toxins.

"It's good to let people know that nobody's asleep at the wheel," Moussa says. "But we have to be sensitive. I can't say more."

BlazeTech clients include government and industry looking for analysis by tapping the company's database of agent properties combined with physics and chemistry-based models. The outcome is a prediction of vulnerabilities, possible technology to counterattack agents, as well as a basis for intelligent emergency planning, positioning for early detection and strategies for first-responders.

Industry uses the product for Environmental Protection Agency compliance and can opt to run the software, named ADORA, on their own desktops, or let BlazeTech run it and provide the outcome in report form.

Another BlazeTech area of expertise is airline crashes. Moussa's 1996 report detailing the potential for fuel tank fires from airline engine debris was cited as the exact cause of an Air France Concorde crash four years later and brought him international recognition as an expert on the subject. Along those lines, the company is developing its trademarked FuelShield to protect airline gas tanks against that threat.

But doesn't the disaster-centric nature of the business get depressing?

"Only when you fly," says Moussa, adding that when he flies to share his expertise at various forums, it's not uncommon for him to spook other passengers. That's because to prepare, Moussa has been known to hold slides with images of aircraft disasters up to overhead aircraft lights.

"That's part of the price," he says.

In a world under threat, business is good for the privately held company. So good that BlazeTech is looking to hire a computation engineer and, according to Moussa, "a young grad with a good engineering and physical chemistry background."

But don't look to them for any travel safety tips. Moussa says he behaves differently knowing what he knows but doesn't find it wise to share the knowledge.

"There are things the airline industry could do but don't," he says. "It could possibly create a lot of commotion."