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He's confident system can stop any virus

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BY DAVE LUNDY

It sounds impossible, but Bodacion Technologies' Eric Uner claims to have discovered the holy grail of Internet security. Starting at a cool \$17,000, businesses can buy Bodacion's "HYDRA" system to protect their Internet servers from every single virus, worm, or Trojan horse on earth. If you don't believe it, you could have tried to penetrate HYDRA to win Bodacion's \$100,000 hacker prize. Tens of thousands of people signed up, but no one could, Uner says.

Uner began his career as a technology "firefighter," working on a small team at Motorola that tackled the tough stuff. After five years, he founded the software-consulting firm Virtual Media with another engineer, Eric Hauk, to build a SWAT team for business software projects. Virtual Media evolved into Bodacion in 2000 after Uner and his employees got tired of receiving emergency 3 a.m. pages when clients couldn't get into their e-mail. He decided to focus instead on building more reliable systems.

HYDRA's "secret sauce" is the constantly changing algorithms that prevent any type of electronic intruder from getting through. Based around the same "nano-kernel" operating system that Boeing uses to ensure safety in 747s, Uner says his code is verifiably bug-free. His goal is one day to be able to announce to an audience of IT professionals that he can "stop every virus on earth" without provoking laughter.

ERIC UNER

Title: Founder

Company: Bodacion Technologies (www.bodacion.com) develops Web Intrusion Prevention Systems to make networks 100% secure using embedded systems and biomorphic mathematics.

Passion: Pulling rabbits out of his hat

Q. *How did you get started in computers?*

A. I grew up on Logan Boulevard in Chicago and went to Iowa State in Ames. I graduated in 1990 with a degree in computer engineering, which was sort of like a computer science major with extra math.

I took a lot of strange classes like fractal geometry and chaotic dynamics, which I never thought would amount to much. But I ended up using them working on encryption technology at my first job at Motorola.

Q. *What did you do at Motorola?*

A. I worked on small teams as a software engineer on problem projects -- things that were already very late or had other serious problems. I got out of college and went right into firefighting mode and have been there ever since.

Motorola had a very different mentality from the rest of the world -- no bugs, no defects. Only when something was done bug-free were you done.

On one of my first projects, my manager sent me down to Florida to upgrade the software for a handheld radio system for the Florida State Police. I found myself climbing up a 60-foot tall hurricane-proof concrete tower in the Everglades, brushing aside every kind of living creature you can imagine, just to go insert this little tiny chip. When I got back I asked what the purpose of my trip was, and my manager said, "well, you won't want to update the software again anytime soon, will you?"

Q. *Why did you leave Motorola after five years?*

A. I had worked in small teams in stressful situations with a small bunch of engineers including Eric Hauk. He and I became good friends rather quickly. We had the same sort of engineering mentality even though we came from

different backgrounds. We actually went from project to project together by choice, and in 1995 we left to start Virtual Media.

Q. *What led you to want to start your own company?*

A. I thought at the time I had no entrepreneurial spirit that I was aware of, and I was extremely happy at Motorola. I can't really put my finger on why I left -- I just did.

It's funny. After I founded Virtual Media, I went back to see my old friends in Iowa and they congratulated me for achieving my goal of building my own business. But I don't remember saying anything like that at all when I was in school. I remember mostly just being broke, siphoning gas out of cars in a junkyard so I could get to and from school.

Apparently there is some kind of entrepreneurial spirit that comes to you when you're broke, just because you're very hungry. That spirit serves you well as an entrepreneur.

Q. *What was the idea behind Virtual Media?*

A. Eric and I had so much fun working in firefighting mode that we decided we wanted to be a software SWAT team. We built a really good reputation, but when the Internet took off we found ourselves doing a lot of system administration work, where we were getting paged at 3 a.m. because people couldn't check their e-mail.

We started running out of time to develop software and finally reached our breaking point in 2000.

Q. *What was the idea behind Bodacion?*

A. We thought we would take the knowledge we gained from working on embedded systems like cellular phones, radios, pagers and other kinds of small devices, combine that with a development methodology, and try to solve our own problems. The whole thing was designed to make [technology] more reliable and keep people from getting paged at 3 o'clock in the morning. We would then make our own products.

The secret sauce in almost everything we do is these algorithms we developed. We call them "bodacions." The algorithms generate special numbers that have no connection to each other and no pattern. This is the holy grail of mathematics and very important to cryptography. We have used them in projects from remote programming, ISDN cameras, and in our government-approved cryptography for generating very random numbers.

Q. *How did Bodacion get focused on security?*

A. We started off using our algorithms not for security, but to detect errors or anomalies in our systems. We realized the security implications of our products one day when retired Gen. Michael Davidson showed up in our conference room and told us we were thinking about our product all wrong. He said, "You don't have a product that's reliable, you have a product that's secure." All of a sudden we realized the two of them are the same thing.

Since then we've moved in a lot of government circles. When we briefed the White House, I called my mom from the White House lawn.

Q. *What is HYDRA?*

A. HYDRA is a Web intrusion prevention system that uses constantly changing algorithms to protect servers. We named it HYDRA because it constantly adapts. The codes disappear as soon as the unit is powered off or probed or analyzed or disassembled.

HYDRA will stop viruses, worms, Trojan horses, all the network attacks from ever getting to Web servers. It doesn't need to be updated. Put it in your server closet, forget it's there. That's the concept.

HYDRA also has a lot of reliability because our operating system is very small and testable. It's just under 13,000 lines of code, compared to 1.5 million for Linux or 50 million for Windows. HYDRA uses the same nano-kernel -- that's the term for operating systems in the embedded systems world -- that Boeing uses on its 700 series airplanes. It's actually certified to operate in an environment where any failure or error would cause loss of life. So when we tell people our system has no bugs, and they say bug-free code is impossible, I tell them there are hundreds of 747s in the air right now that can say otherwise.

Q. *If HYDRA is so incredible at stopping every single problem, why isn't it on every server on the planet?*

A. Because it works. A lot of people are not happy about HYDRA because it works and it's extremely simple. For example, we were at a government agency, and the woman there said, "I'm not going to use your product because if I use your product and I don't have any security problems at all, I can't explain my existence to my organization."

But that is a very narrow way to look at it. If she used HYDRA, she could enjoy an increased security posture, have very little work to do and apply herself toward things that are a little more interesting than hitting the update button every five minutes to get the latest vulnerability patch.

Q. *What is the HYDRA Challenge?*

A. We had a contest that offered a \$100,000 cash reward for hackers that were able to break in. You should see some of the people that come out of the woodwork for this. We have people from schools, and people who go to hacking and DefCon conventions.

We let them have at HYDRA because we know they're not going to find anything and we enjoy it. We had about 50,000 to 60,000 people sign up from all over the world. We even gave them hints, but nobody got very far.

Q. *What do you say to the people who say that your claims are just not believable?*

A. We've briefed the Department of Defense, we've been to the White House, and the reaction is always the same. "This is going to change everything. This is going to revolutionize the way people think about cyber security. This is the most fantastic thing that I've ever seen." Then you get down to the technical people and they say, "It's true. This is the most fantastic thing I've ever seen. It works perfectly. Now get the hell out of here as quickly as you can and I'm going to pretend you never came."

Q. *How will you know when you've succeeded?*

A. We want to change the nature of the IT industry. We want to take care of the rest of people's pain like spam and DNS. We want to keep going until we've solved all of the problems we used to have.

A lot of entrepreneurs want to make a lot of money to pay back their investors. Paying back our investors is very important to us, but my real goal is to be able to stand up in front of a few hundred people and tell them I can stop every virus on earth and not hear a round of laughter from the audience.

Dave Lundy is president of Aileron Communications, a Chicago-based strategic communications firm.

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