SANTA BARBARA NEWSPRESS

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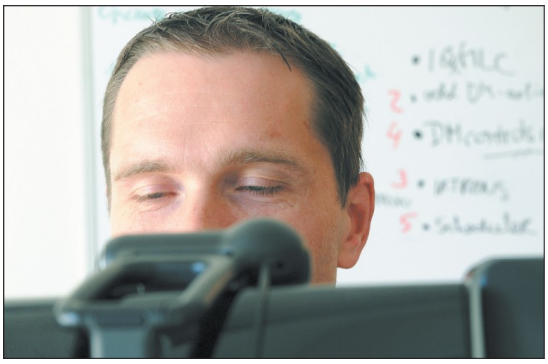


Ron Bessems stares at a list of tasks rolling on a computer screen. As he blinks, a camera above the screen detects the movement and the computer carries out an action, such as turning on a light or rolling down a window blind.

In a blink of an eye

New book mentions Santa Barbara inventor of automation software

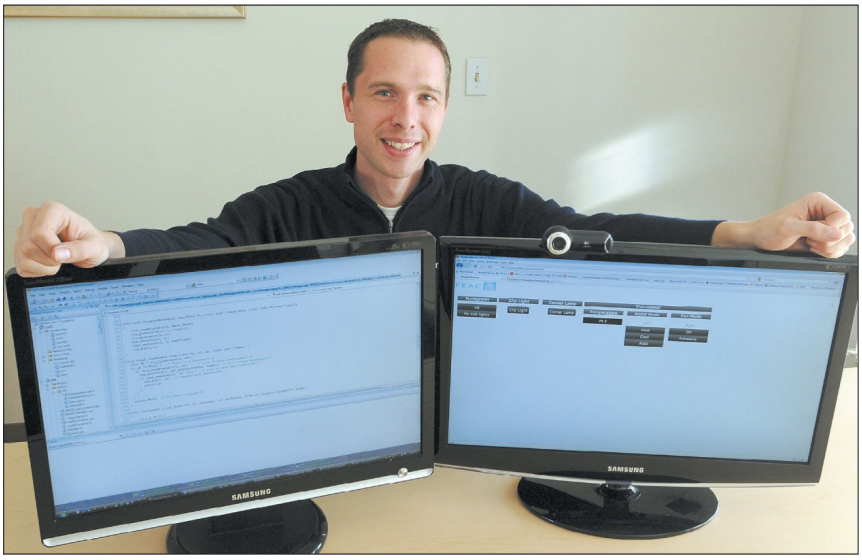
By Dave Mason

Ron Bessems turns on a fan, then a lamp, as he sits still and doesn't lift a finger.

All he has to do is blink. Mr. Bessems invented computer software that allows people, including those who can't use their hands, to control their environment simply by staring at a computer screen. The computer scrolls through a list of tasks, and when the user sees the desired action, such as turning up the TV or raising the heat, he or she blinks deliberately. A camera above the screen sees the eye movement, and the computer, linked to appliances, does the rest

The software allows the user to roll down a window blind, close a door or play a CD or DVD. Mr. Bessems says the software responds to blinking or sipping and puffing onto a tube or, in what sounds like sci-fi, a person's emotional state. More about that last part later.

"When you see people use this, they're so grateful," Mr. Bessems says. "You don't know how much we take for granted, tasks such as changing channels.



Mr. Bessems shows the PEAC (Promixis Enterprise Automation Controller) software for his automation program, which allows a user to pick a task for the computer to perform, such as turning on lights or controlling the heat.

It seems like such a minor thing. For you and me, turning on lights automatically is a luxury. For disabled people, it's a necessity."

Mr. Bessems, president and founder of Promixis LLC, says people blink at a computer screen attached to their wheelchair for tasks such as calling an elevator at the hospital or clinic. The elevator is connected to the computer through infrared signals.

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Once inside the elevator, the same software allows the users to tell the elevator the floor they need. Just by blinking.

Mr. Bessems and his software, which he has expanded to serve large health care facilities, are featured in "Hardcore Inventing: Invent, Protect, Promote, and Profit From Your Inventions" (Skyhorse Publishing, $17.95), co-written by Oxnard resident Ellie Crowe, Mr. Bessems' mother-in-law. (Mr. Bessems is married to her daughter, Caroline Bennet.) The other author is Dr. Robert Yonover, who invented a rescue device known as the RescueStreamer, an emergency signaling device used by the U.S. military and aboard submarines, and the book was illustrated by Micah Fry, a 17-year-old student at San Roque School in Santa Barbara.

In the book, Mr. Bessems describes how he promoted his software on the Internet by making a video about it.
Ms. Crowe says she picked Mr. Bessems for the book as an example of a young inventor. In addition, "he's really helping people" with the software, she says.

The inventor's interest in science began during his childhood.

"I've always been fascinated by electronics and how things work,"says Mr. Bessems, 33, a native of Heerlen, The Netherlands. "I was taking apart little devices at home, like the electric components of the radio," he says in his distinct Dutch accent. "I remember taking apart a cassette recorder. I don't think it went back together properly." He smiles.

But he eventually found himself wired for science, and in 1996, he began studies at the Technical University of Eindhoven in his country, where he earned a master's degree in applied physics. Two years later, he came up with Girder, the first version of his computer infrared remote-control software. At the time, he played DVDs on his computer, but had the image on his television set. He wanted to play them without getting up.

"A lot of software is born out of laziness," says Mr. Bessems, who came to Santa Barbara briefly for an internship in the chemical engineering department at UCSB in 2001. He liked the area so much that he returned in 2003 for doctorate studies at the university, but he dropped out to focus full-time on his new software business.

His original software allowed the user to turn off lights, etc., through commands in the computer. He hadn't added the blinking aspect yet, but tying the software to appliances was the first step.

He started Promixis in 2004 after seeing the popularity of his software, which he was giving away to friends. In 2009, he added the software's ability to allow control of the computer just by blinking.

The Girder software has been used by thousands of homeowners and schools across the country, and costs $50 for the standard version and $100 for the pro version, Mr. Bessems says. "The standard version is designed to control DVDs, computers, iTunes and can control them remotely. The pro version controls lighting systems and fans." It's available by calling Promixis LLC.

He said his software began as a hobby that became known by word of mouth. As it started to evolve into a business, he promoted it by making a four-minute video that he posted on YouTube.

What's more, he said, he has financed his entire operation through the software sales, getting office space and more as his revenue grew. No investors had to be brought in, he said, noting that software companies have low overhead.

It's a businessman's dream, Mr. Bessems says. "No one's behind me pulling the strings, telling me what I have to do."

Sales continue to fund the operation, though Mr. Bessems declines to say how much his company makes.

Mr. Bessems explains the Girder software can be used on any device with a Web browser such as a personal computer, Macintosh or a cell phone. It needs to be on or connected to a Windows operating system, though.

Mr. Bessems recently developed PEAC — Promixis Enterprise Automation Controller, an expanded software for the large number of patients at health care facilities. On Jan. 24, he said he'll spend two weeks at Leonard Florence Center for Living in Chelsea, just outside Boston. The patients there include those with multiple sclerosis and Lou Gehrig's disease (ALS or amyotrophic lateral sclerosis, a disease of the nerve cells in the brain and spinal cord).

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"A lot the hardware is there already," he says. "I'll be walking through the facility and training the staff there." He also will be checking the equipment and software.

The program will allow ALS patients stuck in their beds to control their TVs, lights and window blinds without having to call a nurse, Mr. Bessems says. The software will allow them to call the nurse simply by blinking at the screen.

"You are helping these people tremendously," Mr. Bessems says.

The PEAC software is designed for a large number of people and, unlike Girder, has strict or flexible security guidelines, Mr. Bessems says, explaining why it's ideal for clinics and hospitals.

Mr. Bessems picks up a piece of technology that represents the next step for his software. It's a headset that a manufacturer sent him. It consists of electrodes that go over the forehead and sides of the heads, and Mr. Bessems plans for it to allow the user to control the scrolling on the computer with his or her eyebrows. Right now, the user must wait for the computer to automatically scroll down to a desired task.

What's more, the headset can detect EEG (electroencephalography) signals in the brain, he says. So if someone gets excited when a particular task shows on the screen, the computer will sense it and react by performing that task, says Mr. Bessems, who's working on testing it.

The headset gives more options for the user, Mr. Bessems says. "You can lift your left eyebrow to turn the music down, raise your right eyebrow to turn the music up. You can use your smile to open the door. It's an infinite combination of events."

"It's not like it's reading your mind, but it detects your emotional state," he says. "It does sound like science fiction, doesn't it? It's exciting stuff."

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