

Friday, December 14, 2007

Maine firm looks backward to solve GPS limitations

Mass High Tech: The Journal of New England Technology - by [Efrain Viscarolasaga](#) Mass High Tech

Last week, Vermont hunter Steven Wright survived nearly three snow-filled days lost in Northern Maine. The main reason, he said, was his faulty global positioning system (GPS).

"It told me I was a mile and a half from the truck," he told local reporters. "It took me farther and farther away from the truck, actually."

Less than 90 miles away, former Coast Guard officer Zachariah Conover and his team at Standish, Maine-based CrossRate Technology LLC were -- coincidentally -- busy working on technology to prevent such mishaps.

The four-person company, founded last year, is developing a positioning and navigation receiver that incorporates both satellite-based GPS and its terrestrial predecessor, Loran. The device is intended to eliminate the failings of GPS and act as a backup navigation system in mission-critical applications.

CrossRate recently landed \$500,000 in angel funding to add to nearly \$1 million it has brought in from a variety of organizations, including the quasi-public Maine Technology Institute, the Small Enterprise Growth Fund of Maine and an eLoran development grant from the Federal Aviation Association and the University of Maine.

As Wright would attest, GPS isn't as reliable as many people think, said Conover, a 30-year-old former configuration manager of North American Loran for the Coast Guard.

"It's unpredictable," he said of GPS failings. "Every time we pulled in to Acapulco, the GPS told us we were three miles inland."

Conover doesn't blame GPS, though. Truth is, he said, GPS just wasn't designed for the myriad applications to which it has been applied -- everything from dog collars to in-vehicle navigation to missile-control systems.

Loran, the predecessor of GPS, uses land-based towers and wireless communications to aid navigation. It fell out of favor in the late 1990s as GPS, sometimes more accurate, became the technology of choice for new devices.

Now, with GPS dominating most navigation systems, a backup system is needed, particularly in situations where a failure could be catastrophic, such as missile tracking or emergency communications. The industry is looking at Loran as a strong possibility to be that backup.

But a solution is not as simple as combining a GPS and a Loran receiver in one package, and that is where CrossRate comes in. The handoff between GPS and eLoran in the same unit is a complex piece of software, and CrossRate thinks it has the process solved, according to David Rubenstein, an aerospace consultant with Maine Aerospace Consulting in Falmouth, who has worked with the company on some aspects of the technology.

"(CrossRate's technology) exploits the accuracy of the GPS signal with the robustness of the Loran system in one unit," he said.

CrossRate's technology will be initially targeted at the maritime industry and is expected to be commercially available in the first quarter of 2008, according to Conover. Future applications include land-based trucking and transportation, aviation and first-responder communications systems.