Prioria poised to take off with unmanned plane

By Anthony Clark
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Gainesville-based Prioria Robotics Inc. sold its first unmanned air vehicles to the U.S. military this year, as well as to a customer in the United Kingdom with sales pending in Asia.

BRYAN DA FROTA
30, president and CEO, Prioria Robotics Inc.

- **PERSONAL**: Married.
- **DREAM PARTNERS FOR LUNCH**: Albert Einstein, General Electric CEO Jack Welch, Napoleon and the Dalai Lama.
- **BEST ADVICE RECEIVED**: “Make my own luck ... Luck is where opportunity meets with preparation.”
- **RECENT BOOK READ**: “Blink: The Power of Thinking Without Thinking” by Malcolm Gladwell.
- **WAITING FOR DVD**: “Ironman” – “It’s supposed to be engineering porn.”
- **PLAYING IN HIS CAR**: CD mix with Röyksopp and The Postal Service.
- **HOBBIES**: Work, salsa dancing with wife, backpacking, hiking, bike riding.
- **EDUCATION**: Bachelor’s degrees in religion and business administration, University of Florida, 2001.
Within a year, soldiers could be sending up the 2-pound airplanes and watching from PCs on the ground as built-in cameras let them look for explosives or rooftop snipers, map areas or track targets.

With its Maverick ready-for-manufacture in February, Prioria entered the small UAV market that has sales of several hundred million dollars a year to the U.S. Army alone and is forecast for $55 billion over 10 years for other military branches and nonmilitary uses, according to Bryan da Frota, president and CEO.

The competition includes Air Environment’s Raven and Advanced Ceramic’s Silver Fox.

What sets the Maverick apart is its smart-camera technology that allows it to maneuver itself around obstacles, its faster speed, the ability to fly fast or slow and its ability to fly in high winds.

“In Baghdad, the wind is a constant 20 knots, so the Army’s Raven fleet, 740 planes, is grounded almost 100 percent of the time,” da Frota said.

The Maverick is also more portable.

While the Raven is carried in two suitcases and must be assembled, the Maverick fits in a single tube with its wings rolled up. The wings snap into shape and it’s ready to fly.

In addition to military uses, da Frota said UAVs are used by police, emergency responders, border security, commercial real estate and agriculture.

Firefighters can survey wildfires without endangering themselves. Investors can see construction updates from other locations. Farmers can survey crops.

“Our vision is to be the leader in making UAVs smart and coming out with a portfolio of products that enhance the capabilities of all unmanned systems,” da Frota said.

Prioria’s intention in entering the UAV field was to develop the electronics, not the entire plane. The company’s engineers had done graduate work at UF for the Air Force’s UAV research and Prioria developed hardware to run Carnegie Mellon professor Takeo Kanade’s imaging algorithm for UAV cameras. Da Frota said Kanade is the father of computer vision, best known for creating the yellow first down line on football broadcasts.

Prioria needed a plane to stage the hardware and licensed the bendable wing technology from professor Peter Ifju of UF.

“We realized we did have something that was pretty good and sellable in its own right, so we just decided to enter into the micro air vehicle market,” da Frota said.

The trick was putting imaging processing, an intensive application usually done with high-powered computers or computer clusters, and fitting it in a small UAV that can track targets and avoid obstacles using onboard processing. The Air Force was skeptical.
“They basically didn’t think that we could make hardware or software that could do what we were saying,” da Frota said. “Our whole premise was how do you do just enough image processing to solve the problem versus how do you get the best image processing possible.”

Prioria has sold 10 planes at $45,000 each and expects to sell 20 to 30 more by year’s end.

The company was founded by da Frota, Amir Rubin and Jason Grzywna, all teammates on the UF intercollegiate fencing team (da Frota is serving as assistant fencing coach this semester) and four other founders who dropped out during the first year’s struggles.

They created a robotic toy and won third place in UF’s business plan competition, but couldn’t sell the concept after talks with Mattel and Hasbro.

The founders started over and created an engineering services company designing embedded electronics that have included an explosives detector and a cancer treatment device. That has allowed them to grow from 10 employees in 2007 to 24 this year.

With its own product under its belt, da Frota said they expect sales of $3 million this year, up from $700,000 last year, and $8 million to $10 million next year, with 50 to 70 more employees over the next two years.

“You can make a living selling services, but you really build value in a company by building and selling a product,” he said.

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