

## FIRM TARGETS SMALL SATELLITE MARKET AND LICENSED DESIGN

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WASHINGTON - Huntsville, Ala.-based aerospace company Dynetics intends to enter the government market for small satellites, having recently paid \$4.4 million for rights to build spacecraft buses based on one designed by the Von Braun Center for Science and Innovation, according to Dynetics Chief Executive Marc Bendickson.

Dynetics has never built a satellite, Bendickson said, but the 35-year-old engineering firm has a diverse aerospace background that includes tactical and ballistic missile systems design, engineering support for electro-optical and infrared systems and prototyping of mechanical and electrical systems for the Pentagon.

The company sees a growing government market for standardized small satellites in the several-hundred-kilogram class, which Dynetics eventually expects to be able to provide for around \$10 million apiece, Bendickson said in a Feb. 18 interview.

The satellite Dynetics will model its future satellites after is called FASTSat-HSV, short for Fast Affordable Science and Technology Satellite-Huntsville. It was designed by the Von Braun Center for Science and Innovation (VCSI) - a not-for-profit research organization - in collaboration with NASA's Marshall Space Flight Center. VCSI and Marshall, like Dynetics, are located in Huntsville.

In November, VCSI signed a flight opportunity agreement with the U.S. Defense Department's Space Test Program to build the satellite to host six small payloads, VCSI Executive Director Marty Kress said in an interview. The satellite is about to go through its preliminary design review, and fabrication and testing will take place this summer prior to its scheduled December launch aboard a Minotaur-4 rocket, Kress said.

FASTSat-HSV will host two Air Force Research Laboratory payloads, the Threat Detection System, and the Roll-out and Passively Deployed Array, and three NASA science experiments, Dynetics spokeswoman Michelle Reavis said. It also will host the second flight of NASA's Nanosail experiment that seeks to demonstrate the concept of solar-powered spacecraft propulsion. The first attempt in August 2008 failed when its Falcon 1 launcher failed to reach orbit.

After FASTSat-HSV flies, Dynetics will take over the fabrication of future satellites the company hopes to sell to the Defense Department, NASA and eventually commercial customers.

While other low-cost government satellite bus programs have experienced cost growth and delays, the VCSI-Marshall team was able to stay on schedule and develop a prototype of the satellite in one year for less than \$5 million, Dynetics President Tom Baumbach said in an interview.

"NASA and DoD fly a lot of experiments, and there's just a significant need for low-weight microsatellites in the couple-hundred-kilogram class," Baumbach said. "There are potentially a hundred or more users

per year that would need these kinds of services, including some commercial users."

Jim Cantrell, president of Strategic Space Development consultancy of Tucson, Ariz., said the challenges facing a new company trying to break into the satellite manufacturing business - this niche in particular - are great.

"Most often the highest barrier to entry is the risk the customer is willing to take," Cantrell said. "The second challenge comes down the road when the difficulty of maintaining a business base tempts many in this market to move upscale in cost and capability."

Cantrell said small satellites are a foothold market, where companies start off before moving on to a larger, more capable class of satellite. Companies that started out building low-cost satellites, such as Orbital Sciences Corp., Ball Aerospace and Technologies Corp., and Spectrum Astro Inc. - now owned by General Dynamics - have essentially left the small end of market, he said.

"Orbital, Ball and Spectrum Astro built pretty much world-class satellites in the 400-kilogram to 1000-kilogram range for around \$30 million to \$100 million," Cantrell said. "I consider those pretty much 'main market.' The \$10 million to \$20 million class is still a struggling market.

"I don't know if there is a market leader in this area right now. Essentially you've got [Comtech AeroAstro Inc.] and [Microsat Systems Inc.]"

Cantrell said the uncertainty of the federal budget makes the overall market for this kind of satellite tough to estimate right now, but it looks like there are going to be at least a few satellites in the 100-kilogram class procured each year, making for perhaps a \$20 million to \$40 million market.