

Defense Advanced Research Projects Agency (DARPA) Awards F6 Satellite Program Contract To Lockheed Martin

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A team headed by Lockheed Martin Space Systems Company (LMSSC) has received a \$5.7 million contract from DARPA to compete in Phase 1 development of their System F6 space technology and demonstration program. F6 is shorthand for "Future, Fast, Flexible, Fractionated, Free-Flying Spacecraft United by Information Exchange."

The DARPA System F6 program intends to demonstrate that a traditional, large, monolithic satellite can be replaced by a group of smaller, individually launched, wirelessly networked and cluster-flown spacecraft modules. Each "fractionated" module can contribute a unique capability to the rest of the network, such as computing, ground communications, or payload functionality. The ultimate goal of the program is to launch a fractionated spacecraft system and demonstrate it in orbit in approximately four years.

"Our team brings together the perfect combination of innovation, expertise, experience and past performance to successfully demonstrate the value and flexibility of a fractionated approach to satellite systems," said Dr. Jim Ryder, vice president of the Lockheed Martin Space Systems Advanced Technology Center (ATC) in Palo Alto. "For our 12 Month Phase 1 preliminary design effort, we will evaluate fractionation technologies and system econometrics, simulate the fractionated space network mission with our extensive space-qualified hardware-in-the-loop (HIL) and Controls & Automation Laboratory testbeds and work closely with our DARPA partner to conduct a thorough stakeholder analysis to identify potential mission partners."

The Lockheed Martin effort comprises a multi-disciplinary team of leaders for all System F6 technology pillars. The ATC delivers advanced research in space system network architectures and control for fractionation. The LMSSC Surveillance & Navigation Systems (SNS) line of business delivers experience in mission partner concepts and fielding SmallSats for proximity operations. Lockheed Martin Information Systems & Global Services (IS&GS) delivers ground systems. Other teammates include Colbaugh & Heinsheimer (supported by several Stanford University professors), Aurora Flight Sciences (supported by several MIT professors), and Vanderbilt University.

The ATC is the research and development organization of Lockheed Martin Space Systems Company (LMSSC). LMSSC, a major operating unit of Lockheed Martin Corporation, designs, develops, tests, manufactures and operates a full spectrum of advanced-technology systems for national security, civil and commercial customers. Chief products include human space flight systems; a full range of remote sensing, navigation, meteorological and communications satellites and instruments; space observatories and interplanetary spacecraft; laser radar; fleet ballistic missiles; and missile defense systems.

Headquartered in Bethesda, Md., Lockheed Martin employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2007 sales of \$41.9 billion.

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