Lockheed Martin Team Successfully Demonstrates High Performance Radiator Technology For TSAT Program

A Lockheed Martin /Northrop Grumman team has successfully tested a high performance deployable radiator system to meet the stringent mission requirements of the Transformational Satellite Communications System (TSAT) constellation.

TSAT will provide thousands of military users with wideband, highly mobile, beyond line-of-sight protected communications to support network-centric operations for the future battlefield.

Developed by Lockheed Martin Space Systems, Sunnyvale, Calif. and Thermacore, Inc. of Lancaster, Pa., the High Performance Loop Heat Pipe (HP-LHP) Deployable Radiator System has been demonstrated to significantly improve the heat dissipation capability over existing systems.

The HP-LHP, designed and matured for TSAT, will provide substantially more radiator area, resulting in a cooler, more stable thermal environment for Lockheed Martin's A2100 spacecraft bus and the communications payload provided by Northrop Grumman.

"This represents another major risk reduction milestone for TSAT," said Mark Pasquale, Lockheed Martin's TSAT vice president. "Our unique approach will afford greater reliability and longevity for TSAT's critical components and serves as another example of our thorough preparation and readiness to proceed with the next phase of this critical communications program."

The modular HP-LHP is designed to be compactly stowed during launch and has the ability to accommodate additional units in support of increasing thermal requirements in a scalable fashion. Subsequent to launch the modular system is deployed on orbit to achieve maximum thermal efficiency. LHP technology uses a passive, capillary pump to transport heat from the high power communications payload to the radiator surface and ultimately to the cold space environment.

This highly capable system more than doubles the heat dissipation capability over satellites similar in size. The robust hardware solution has been successfully tested through stringent government environments and specifications during the TSAT risk reduction phase, significantly reducing risk for the next phase of the program.

TSAT represents the next step toward transitioning the Department of Defense wideband and protected communications satellite architecture into a single network comprising multiple satellite, ground, and user segment components. The system ultimately will replace the Milstar and Advanced Extremely High Frequency (AEHF) programs and provide the Global Information Grid network extension to mobile warfighters, sensors, weapons, and command, control, and communications nodes located on unmanned aerial vehicles, piloted aircraft, on the ground, in the air, at sea or in space.

The Lockheed Martin/Northrop Grumman TSAT space segment team is currently working under a $664 million contract for the Risk Reduction and System Definition phase. This effort will culminate with a multi-billion dollar development contract scheduled to be awarded to a single contractor in late 2008.

The Military Satellite Communications Systems Wing, located at the Space and Missile Systems Center, Los Angeles Air Force Base, Calif., is the TSAT contract manager and lead agency for ensuring the capabilities of this system are made available to the warfighter.

About Thermacore, Inc.

Founded in 1970, Thermacore specializes in the custom design, development, and manufacturing of highly engineered thermal management systems and components for a variety of OEM applications across diversified global markets that includes Military/Aerospace, Computer, Communication, Energy Conversion, Medical, and Transportation.

About Lockheed Martin

Headquartered in Bethesda, MD, Lockheed Martin is a global security company that 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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