

## **Advanced EHF Communications Payload**

### **Description of System or Capability:**

The Advanced EHF program will provide the military's next generation of highly secure strategic and tactical communications satellites and its accompanying ground system. Advanced EHF is a follow-on to the Milstar system, which currently provides such services. While backwardly compatible with Milstar to ensure connectivity, Advanced EHF will make possible much faster, global and network-centric military communications.

### **Customer:**

1. Advanced EHF is a Department of Defense (DoD) program
2. Lockheed Martin Corp., the program's prime contractor, leads an industry team that will provide three Advanced EHF satellites and the mission control subsystem to its customer, the Military Satellite Communications Systems wing, located at the Space and Missile Systems Center, Los Angeles Air Force Base, Calif.
3. Northrop Grumman Space Technology is providing the satellite communication payloads to Lockheed Martin.

### **Contract Details:**

Northrop Grumman received a contract in 2001 from Lockheed Martin for the first two Advanced EHF payloads valued at \$1.3 billion, through 2009. In 2006, the U.S. Air Force awarded Lockheed Martin a \$491 million production contract for a third Advanced EHF satellite.

The payloads consist of digital processors, antennas, radio frequency electronics, software and intersatellite crosslinks. Northrop Grumman will deliver fully integrated payloads to Lockheed Martin. The first Advanced EHF satellite is scheduled for launch in 2008.

**more...**

## **Advanced EHF Communications Payload/page 2**

### **Background Data:**

The Advanced EHF system will serve users in the U.S. Army, Navy and Air Force, as well as special forces, the President and Secretary of Defense, and forces of international partners in the Advanced EHF program.

The highly versatile system will provide tactical communications, such as real-time maps and targeting information; it will also ensure a path for highly secure strategic communications.

Incorporating the latest technology, payloads for Advanced EHF will provide about 10 times the user capacity as Milstar payloads – yet cut size and weight substantially. Those size and weight savings will lower the cost of launching the satellites by permitting the use of the smaller Enhanced Expendable Launch Vehicle, or EELV, instead of the Titan 4.

The highly advanced technology to fly aboard Advanced EHF satellites include nulling antennas that autonomously detect and counter enemy signal-jamming, onboard digital processing and advanced phased array antennas capable of rapid beam-steering.

### **2006 – 2007 Highlights**

#### **Advanced EHF Military Communications Satellite Payload**

Jan. 2007 – Northrop Grumman delivers the payload module for the first Advanced EHF satellite two months ahead of schedule to Lockheed Martin.

Jan. 2007 – Northrop Grumman announces that the uplink and downlink phased array antennas developed by the company have been successfully integrated on the first flight structure, and their performance verified alongside other essential payload components.

Sept. 2006 – Nearly two months of rigorous tests conducted by Northrop Grumman showed that Milstar terminals operated by the U.S. Army and Air Force can send and receive data through the Advanced EHF military communications satellite system.

July 2006 – The downlink phased array antenna developed by Northrop Grumman completes range tests that confirmed performance predictions.