

Advanced EHF Communications Payload

System Description

- The Advanced Extremely High Frequency 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

- Advanced EHF is a Department of Defense (DoD) program.
- Lockheed Martin Corp., the program's prime contractor, leads an industry team that is under contract to 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.
- Northrop Grumman Aerospace Systems is providing the satellite communication payloads to Lockheed Martin Space Systems in Sunnyvale, Calif.

Contract Details

- Northrop Grumman received a contract in 2001 from Lockheed Martin for the first two Advanced EHF payloads, and a contract for a third payload in 2006.
- The payloads consist of digital processors, antennas, radio frequency electronics, software and intersatellite crosslinks. Northrop Grumman has delivered all three fully integrated payloads to Lockheed Martin - one each in 2007, 2008 and the third in 2009. Launch of the first Advanced EHF satellite is scheduled for 2010.

Background

- 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.

The highly advanced technology to fly aboard Advanced EHF satellites includes:

- Nulling antennas that autonomously detect and counter enemy signal-jamming,
- Onboard digital processing, and
- Advanced phased array antennas capable of rapid beam-steering.

One Advanced EHF satellite will provide greater total capacity than the entire Milstar constellation currently on orbit. Individual user data rates will be five times improved. The higher data rates will permit two-way, jam-resistant transmission of tactical military communication such as real-time video, battlefield maps and targeting data.

In addition to its critical tactical mission, Advanced EHF also will provide the critical survivable, protected and enduring communications to National Command Authority including Presidential conferencing in all levels of conflict.

The Lockheed Martin-Northrop Grumman team has a legacy of developing new satellite communications technologies and integrating them into progressively more advanced military systems. Unlike commercial satcom, AEHF satellites are protected in all levels of conflict. Northrop Grumman specializes in developing protected milsatcom payloads.

Photos, videos and other information is available online at
<http://www.as.northropgrumman.com/products/aehf/index.html>

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