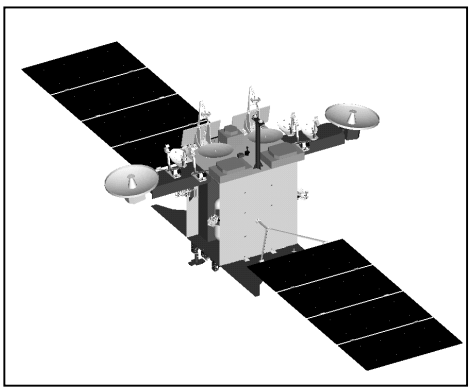
ADVANCED EXTREMELY HIGH FREQUENCY (AEHF) SATELLITE COMMUNICATIONS SYSTEM



The Advanced Extremely High Frequency (AEHF) satellite communications (SATCOM) system is designed to provide secure, survivable communications to the U.S. warfighters during all levels of conflict. It will follow Milstar as the protected backbone of DoD's Military Satellite Communications (MILSATCOM) architecture.

BACKGROUND INFORMATION

In lieu of an additional Milstar satellite to replace Flight 3 (which placed the satellite in a nonoperational orbit), the first flight of the Advanced EHF satellite program, named Pathfinder, will be programmed to operate initially as a Milstar II satellite. The second flight will then be launched as a fully capable Advanced EHF satellite. After it is operational, Pathfinder will be reprogrammed on-orbit as an Advanced EHF satellite.

The first three program phases, Advanced EHF Technology, Engineering Models, and System Definition, have been completed. At Milestone B, the DAB authorized fabrication and assembly of the first two satellites (SV1, SV2), development and deployment of the ground command and control segment, and advanced procurement for three additional satellites (SV3, SV4, SV5) within the FYDP. A separate tailored Milestone C is anticipated at the end of FY03, following completion of the system-level Critical Design Review to provide final authorization for production of SV3, SV4 and SV5. The first launch is scheduled for 3QFY06 and the second launch for 3QFY07. The newly approved acquisition strategy provides for a three-year delay before the third launch. The launch of the last three satellites, SV3, SV4 and SV5, will be 2QFY10, 1QFY11, and 3QFY11, respectively.

TEST & EVALUATION ACTIVITY

AFOTEC performed an Early Operational Assessment (EOA) and Operational Impact Assessment (OIA) in support of the Milestone B decision in 4QFY01. In addition, an Operational Assessment (OA) will look at the results of the DT/OT performed on the Pathfinder satellite to verify its full capability to function as a Milstar II LDR/MDR satellite.

MOT&E will evaluate whether or not the entire system, including equipment, personnel, procedures, training, and logistics support, is effective and suitable based on the operational requirements. The test will exercise satellite-to-satellite cross-links to evaluate theater-to-theater communications, network control, satellite control, and interoperability.

TEST & EVALUATION ASSESSMENT

AFOTEC performed an EOA and OIA based on results of the engineering model tests, the contractor system design review presentation, modeling and simulation, and a review of program documents. Satisfactory progress is being made on the four major technology risk areas: nuclear hardening and shielding, performance of the nuller spot beam, performance of the phased array antenna, and electric propulsion. The contractor should minimize the use of turbo coding because of its susceptibility to nuclear fading.

The lack of terminal synchronization is both a void in the program and a risk to successful MOT&E. The following risks to the test program were identified: pressure to reduce the minimum developmental testing as defined in the TEMP, insufficient software testing, the need for a payload simulator that is common for all the terminal development programs, and availability of Pathfinder for MOT&E after it has become an operational asset.

It is imperative to monitor the fidelity of the AUST-T terminal simulator and the payload simulators. If their configurations do not remain standardized and consistent with the true payload, the new terminals will not be compatible with the payload or with each other.