

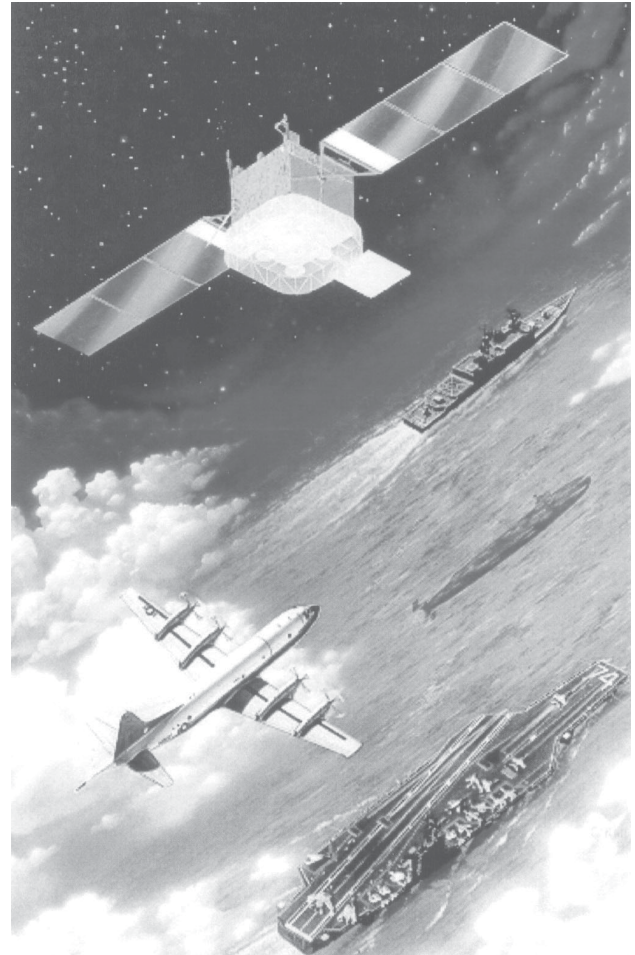
## Mobile User Objective System (MUOS)

### SUMMARY

- The Mobile User Objective System (MUOS) has the potential to provide improved joint interoperability for deployed forces, increased capacity and throughput, multi-hop capability, communications-on-the-move, and additional support for disadvantaged terminals.
- There are potential schedule and technical risks due to technical complexity of spacecraft, ground and software elements, dependency on successful implementation of the DoD Teleport and the Joint Tactical Radio System, and dependency on design architecture spectrum requirements.
- Failure to launch MUOS by FY09 could potentially impact ultra-high frequency constellation availability as older ultra-high frequency follow-on satellites go out of service.

### SYSTEM DESCRIPTION AND MISSION

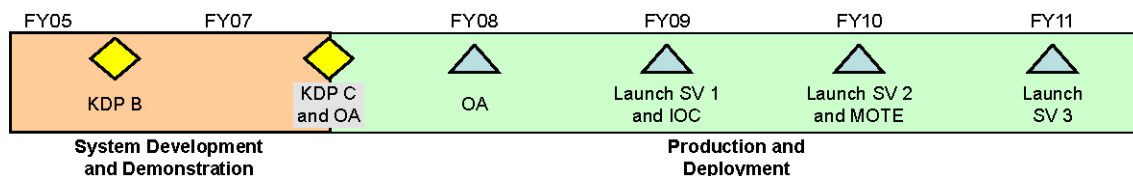
MUOS is a satellite communications network designed to provide a worldwide, multi-Service population of mobile and fixed-site terminal users with narrowband beyond line-of-sight communications services. Capabilities will include a considerable increase from current narrowband satellite communications capacity, as well as significant improvement in availability for small, disadvantaged terminals. The MUOS will provide graceful transition from the current ultra-high frequency follow-on narrowband satellite communications system. The MUOS consists of the space segment, the ground transport segment, the user entry segment, the network management segment, the satellite control segment, and the ground infrastructure segment.



*A series of MUOS operational assessments will lead up to a multi-Service operational test and evaluation.*

The MUOS is being acquired under new DoD National Security Space Policy directives tailored for space programs. Two contractors have now completed their efforts under the Component Advanced Development phase. One of these two contractors will be selected to continue into the Risk Reduction and Design Development phase following Key Decision Point (KDP)-B. KDP-B will authorize the prime contractor to develop and procure the first two satellites and associated ground infrastructure. There will be a single contract for design, development, production, and fielding of the MUOS through Final Operational Capability. The combined KDP-C and Options Buy Decision will authorize the procurement and fielding of the remaining system. It will follow the Critical Design Review and be implemented through contract options that execute the Acquisition and Operations Support phase.

### TEST AND EVALUATION ACTIVITY



# NAVY PROGRAMS

A Combined Test Force developed the evaluation strategy and was written with approval by the Office of the Secretary of Defense occurring in February 2004. The Test and Evaluation Master Plan is in draft with submission to DOT&E for approval slated to occur 180 days after KDP-B. A series of MUOS operational assessments will lead up to a multi-Service operational test and evaluation. The operational test agencies, led by the Navy's Commander, Operational Test and Evaluation Force, conducted an early operational assessment in late 2003 based on technology demonstrations and detail design information presented during design reviews at the two competing contractor facilities. There will be an operational assessment in preparation for the KDP-C and a second operational assessment in support of the launch of the first space vehicle. Dedicated operational test and evaluation will take place after the launch of the first satellite in FY08.

## TEST AND EVALUATION ASSESSMENT

The operational test agencies conducted a very thorough early operational test and evaluation and DOT&E agrees with the observations and conclusions of that assessment. Each contractor design offers both unique advantages and areas of risk, which cannot be reviewed in this report due to the competition-sensitive nature of this information. Risks to achieve effective communications include successful allocation of additional operating frequencies, potential interface issues between the MUOS system and the DoD Teleport, design of the space to ground feeder link, design of the automated network management system, the geolocation function, and development and certification of cryptographic hardware.

It is very important that there be a strong liaison and test program interconnecting the MUOS program with the Joint Tactical Radio System program. The assessment of system capacity provides the operational test agencies with a challenge and opportunity to develop a common, commercially-based modeling and simulation capability to augment hardware testing with modeling and hardware-in-the loop simulation capability.