Statement A: Approved for public release; distribution is unlimited (TBD).

PEO Space Systems Fact Sheet

NAVY IN SPACE

The Navy, with its unique needs for communications at sea, has a rich and successful heritage in space that began in 1955 with the first American satellite program, Vanguard. In 1957, the Navy constructed the first complete satellite-launching facility at Cape Canaveral, Florida where Vanguard I, was launched in 1958.

PEO SPACE SYSTEMS

Headquartered in San Diego, the Navy’s Program Executive Office (PEO) for Space Systems is an acquisition organization chartered by the Secretary of the Navy as the executive agent to develop, deploy, sustain, provide engineering support and influence space-based capabilities for naval, joint and allied operations. This includes advanced UHF narrowband communication satellites and associated ground systems, Intelligence, Surveillance and Reconnaissance systems, weather systems, and space-related Science and Technology efforts. PMW 146 reports to the Navy’s PEO for Space Systems on the Navy’s Mobile User Objective System (MUOS) and UHF Follow-On (UFO) programs. PEO Space Systems reports directly to the Assistant Secretary of the Navy for Research, Development and Acquisition.

Although the Air Force oversees most DoD space system acquisition, the Navy is responsible for DoD UHF narrowband satellite communications (SATCOM). The UHF spectrum is the military’s communications workhorse for disadvantaged, tactical warfighters on-the-move, as it is the most effective SATCOM frequency for penetrating jungle foliage, inclement weather and urban terrain.

MUOS

MUOS is the current narrowband military SATCOM system that supports a worldwide, multi-service population of users, providing modern net-centric communications capabilities while still supporting legacy terminals.

The first four MUOS satellites are in their operational slots and providing legacy UHF SATCOM service. MUOS-5 was launched on June 24, 2016 as an on-orbit space. In addition, the legacy UHF constellation is on station 24/7 supporting the warfighter.

The advanced MUOS payload is designed to support users that require greater mobility, higher data rates, and access to Defense Information Systems Network (DISN) voice and data services. The system will provide greater than 10 times the communications capacity compared with the current UHF constellation as well as voice quality.

The MUOS prime contractor and system integrator is Lockheed Martin Space Systems of Sunnyvale, California, with team members from Lockheed Martin Commercial Space Division in Denver, Colorado (spacecraft); General Dynamics C4I of Scottsdale, Arizona (ground and waveform); Boeing Integrated Systems of El Segundo, California (spacecraft legacy Ultra-High Frequency (UHF) payload and channelizer). The MUOS satellites are launched aboard Atlas V Evolved Expendable Launch Vehicles, which are managed by the Space and Missile Systems Center (SMC) from Cape Canaveral, Florida, and services by United Launch Alliance (Atlas V Space Launch Services).

PMW 146

The Navy Communications Satellite Program Office, PMW 146, is based in San Diego, California, and is responsible for managing narrowband communication satellite systems acquisition, integration, production, launch, test, and provides operational support to the DoD, various U.S. agencies, and joint and coalition forces. This small team of approximately 35 military and civilian personnel, with support from the Space and Naval Warfare Systems Command, leverages commercial advances in terrestrial and satellite technology to greatly expand communications opportunities and capability.

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MOBILE USER OBJECTIVE SYSTEM

MUOS WCDMA OPERATIONS

In 2012, PMW 146 was assigned as the single government lead responsible for delivering the end-to-end MUOS system capability including the teleport segment for access to DISN and user terminals. The first terminal to use the new MUOS WCDMA waveform is the Army’s Handheld Manpack Small Form Fit radio (AN/PRC-155). In early 2013, PRC-155 radios successfully completed the first WCDMA voice and data calls using the on-orbit MUOS-1 satellite and routed through the Hawaii ground station. Several legacy software-defined radios are undergoing developmental upgrades and waveform integration via both formal acquisition programs and internal research and development endeavors that will provide the MUOS capability to all warfighting segments including maritime, fixed and airborne platforms.

MUOS has successfully demonstrated secured communications capability beyond its specification of 65-degrees latitude north during a latitude in-flight assessment as well as during an extended duration Navy submarine Arctic exercise. In August 2014, during the North Command Arctic Shield Exercise on board Coast Guard Cutter Healy, the commanding officer stated, “MUOS is a very capable system and would appear to almost completely solve our high latitude communications issues.” In another 2014 exercise with an Air Force C-17 aircraft, MUOS achieved the first demonstration of a continuous real time aircraft and mission data link to Air Mobility Command Mission Data Center and the first interoperability between two different MUOS radios (PRC-155 and ARC-210).

MUOS proved to be just as effective in the southern hemisphere during Pacific Command’s Operation Deep Freeze in November 2014, providing simultaneous voice and data communications between McMurdo Station, Antarctica; the National Science Foundation Headquarters in Christchurch, New Zealand; Space and Naval Warfare System Center Pacific Lab, San Diego; and C-17 sorties in flight. Additionally, Navy Special Warfare Command executed operationally relevant scenario based testing, demonstrating MUOS tactical communications capability with operational Navy personnel.

As a result of recent Combatant Commander inquiries on allied interoperability, the Office of the Secretary of Defense and the Navy are exploring options that allow Allies access to the MUOS WCDMA capability.

FUTURE

MUOS WCDMA is a transformational communications system, and we are committed to working with our stakeholders to make MUOS’ game-changing capabilities available for warfighter use as soon as possible. MUOS WCDMA entered into an ‘Early Combatant Commander Use’ in summer 2016, enabling testing, training and exercise of the MUOS system, processes and operators.

In addition, PEO Space Systems is pursuing a number of Science and Technology endeavors to meet critical naval and joint warfighter needs and priorities. The projects range from frequency monitoring and interference mitigation solutions that will be incorporated into the MUOS ground system, to cutting edge developments in the Smallsat / Nanosat arena. These undertakings include a MUOS capability to complete the coverage gap in the polar regions, laser communications, altimetry to enhance the ocean model, star mapping for position determination, and sensors for nanosat tracking and identification.

An analysis of alternatives for future UHF SATCOM capabilities, is expected to commence in FY18.