



## SPACE



Space is the ultimate high ground, providing our nation and our allies with significant capabilities to support modern military concepts and operations. Space systems allow our warfighters to sense their environment clearly, communicate reliably, navigate precisely, and strike accurately. They have become so indispensable that the United States' future military success will largely be predicated upon our ability to influence the battlefield both from and through space.

As the Navy's pre-eminent laboratory for integrated C4ISR solutions, SSC Pacific is committed to delivering enhanced capability in U.S. Navy information warfare. To assure the Navy's continued advantage in the space domain—and thereby provide a solid foundation for achieving dominance in information warfare—SSC Pacific provides innovative capabilities for U.S. Navy operations in space, both by maximizing existing systems and by developing emerging technologies.

### SSC Pacific Unique Space Capabilities

Space systems provide crucial capabilities in the areas of intelligence, surveillance, and reconnaissance (ISR); missile warning; environmental monitoring; satellite communications; and position, navigation, and timing (PNT). Together, these capabilities underpin the United States' key military advantage—the ability to create a picture of the operating environment, then use that picture to dominate the battlespace in all domains.

SSC Pacific provides unique capabilities in the following areas:

- Satellite communications
- Global PNT systems
- Ground support system engineering
- Space command and control (C2)

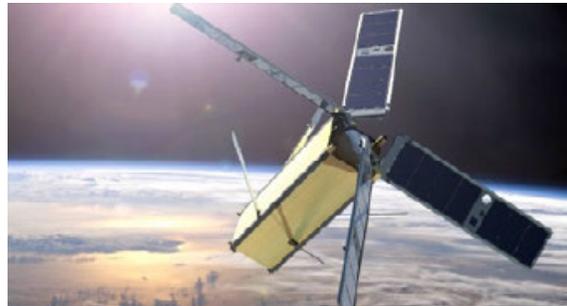
In addition to supporting major space programs of record, SSC Pacific is focused on developing space systems that assure their relevance in the future battlefield by incorporating dynamic constellations of heterogeneous, adaptive and reconfigurable platforms of various sizes and capabilities, all able to operate in denied or degraded environments.

## Some of SSC Pacific's current Space efforts include:

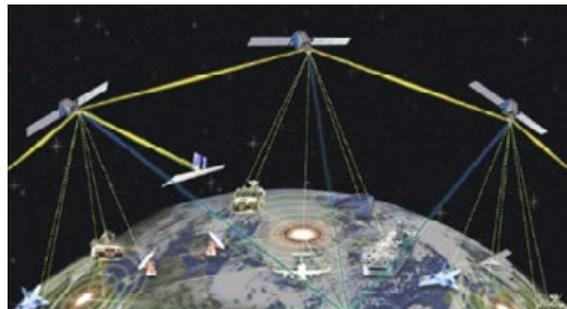
- **Mobile User Objective System (MUOS):** MUOS is a Military Satellite Communications (MILSATCOM) system that supports a worldwide, multiservice population of users in the ultra-high frequency (UHF) band. The MUOS system provides increased communications capabilities to newer generations of tactical radios through Wideband Code Division Multiple Access (WCDMA) cellular technology, while still providing interoperability with legacy UHF terminals.
- **Integrated Communications Extension Capability (ICE-Cap):** ICE-Cap will launch a low-earth orbiting nanosatellite (CubeSat) with a communications "cross-link" to the MUOS satellites in geosynchronous orbit.
- **Vector Joint Capability Technology Demonstration (JCTD):** The Vector JCTD launched two nanosatellites into orbit in November 2013 to test advanced communications capabilities.
- **The Global Positioning and Navigation Systems (GPNS):** GPNS tasking primarily involves the NAVSTAR global positioning system (GPS), a space-based radio navigation system that provides position, velocity, and time, both globally and continually. SSC Pacific engineers and scientists provide system engineering, and in-service engineering support, primarily to the Navigation Systems Program at PEO C4I (PMW/A170) and the GPS Directorate in Los Angeles, as well as conduct basic and applied research supporting development and/or test of new and/or future capabilities.
- **Joint MILSATCOM Network Integrated (JMINT):** An ACAT-IVT program of record, JMINT provides centralized control and access for all DoD UHF DAMA and DASA satellite channels worldwide, as well as remote communications planning and management of UHF satellite channels. This removes the "air gap" between the communications planner and the control sites.



Site Acceptance Test



Nanosatellite



Battlespace Awareness

## With the Warfighter

**Joint Space Operations Center (JSpOC) Mission Systems (JMS)** is an ACAT I Major Automated Information System (MAIS) providing C2 capabilities for space and replaces multiple legacy systems with sustainable hardware and open, evolvable software architecture. JMS is an integrated, net-centric Space Situational Awareness (SSA) and C2 capability that rapidly detects, tracks, and characterizes objects of interest, identifies/exploits traditional and non-traditional sources, performs space threat analysis, and conducts C2 of space forces in dynamic environment. Throughout the development and validation cycles, our engineers and scientists interact with the JSpOC mission personnel at Vandenberg Air Force Base (AFB) to validate system requirements, system usability, and operational assessment prior to new capability cutover.



JMS User Screen



JSpOC watch floor

### For more information

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