Tactical Satellite-3

Launched in May 2009, the Tactical Satellite-3 space vehicle features an onboard processor, which provides real-time data within 10 minutes of its collection to combatant commanders in the field. TacSat-3 project partners include the Army Space and Missile Defense Command, Air Force Space Command, the Department of Defense's Operationally Responsive Space office, the Office of Naval Research, the National Air and Space Intelligence Center, the National Geospatial-Intelligence Agency and the Air Force Research Laboratory's Sensors Directorate.

The program originated in 2004 as part of the Responsive Space Initiative addressing the military's need for responsive, flexible and affordable systems operating in the cosmos. TacSat-3 serves as the inaugural small satellite program to participate in a formal payload selection process based on the recommendations by the combatant commands and a review by a flag officer panel. The spacecraft consists of three distinct payloads: a hyperspectral imager, the Office of Naval Research's Satellite Communications Package, or SCP, and the Space Avionics Experiment, or SAE.

As the mission's primary experiment, the ARTEMIS HSI, developed by Raytheon, was designed to rapidly supply target detection and identification data, as well as information related to battlefield preparation and combat damage assessment. Secondly, the SCP trial was to collect data from sea-based buoys and transmit information back to a ground station for expeditious communication to the warfighter. Finally, the AFRL-designed SAE payload validated plug-and-play avionics capability, involving the use of reprogrammable components to integrate the experiment and the spacecraft structure. Weighing less than 400 kilograms (880 pounds), the small satellite demonstrates a first-generation modular bus, providing the adaptability for future TacSat missions.

The $55 million program has accomplished all key milestones to date. All three payloads were delivered to AFRL's Space Vehicles Directorate at Kirtland Air Force Base, N.M. and integrated with the ATK Space Systems-developed modular bus. TacSat-3 also completed system-level performance testing, and was space-qualified after accomplishing shock, vibration and thermal vacuum evaluations. AFRL then shipped the spacecraft to the liftoff site where it was mated with the launch vehicle.

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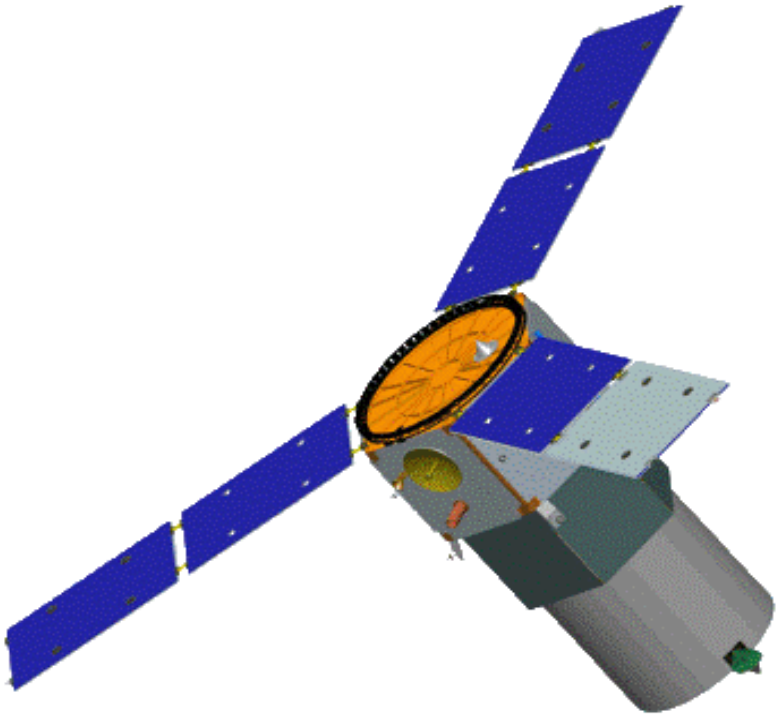
As a key team member in the TacSat-3 program, the Space and Missile Systems Center's Space Development and Test Wing, also located at Kirtland AFB, N.M., provided Orbital Sciences Corporation's Minotaur-1 launch vehicle. The four-stage rocket consists of two structures taken from retired Minuteman intercontinental ballistic missiles and another two stages from Orbital's Pegasus booster.

Launch occurred from the National Aeronautics and Space Administration's Wallops Flight Facility, Wallops Island, Va. on May 19, 2009. SMC's Space Development and Test Wing assisted with mission operations during TacSat-3's one-year experimental flight in Low Earth Orbit at approximately 425 kilometers (264 miles) altitude.

The TacSat-3's ARTEMIS sensor accomplished over 2,200 data collects during its initial employment in space. The system was transferred to the Air Force Space Command in June 2010 for operational use.



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