



# TacSat-2 Micro Satellite

www.vs.afrl.af.mil

505.846.4704/4321

Space Vehicles Directorate

Air Force Research Laboratory

FACT SHEET

The Space Vehicles Directorate is developing the TacSat-2 micro satellite as the first in a series to demonstrate the objectives of the joint warfighting space (JWS) initiative.

The TacSat-2 mission is a funded Advanced Concept Technology Demonstration, which is to exhibit the tenets of responsive space concepts. It has three main objectives:

1. *Rapid Design, Build, Test* with a launch-ready spacecraft within 15 months from authority to proceed
2. *Responsive Launch, Checkout, Operations* to include launch within one week of a call-up from a stored state, perform on orbit checkout within one day, conduct lean operations and downlink data directly to the theater
3. *Militarily Significant Capability* to include obtaining images with tactically significant resolution provided directly to the theater

TacSat-2 is a joint project of the Air Force Research Laboratory (AFRL), the DOD Space Test Program (Space and Missile Systems Center's Space Development and Test Wing), the Naval Research Laboratory, the Army Space Program Office, Air Force Space Command and the Space Warfare Center. Project participants also include the National Aeronautics and Space Administration (NASA), as well as its Jet Propulsion Laboratory (JPL).

The spacecraft is scheduled for launch in December 2006 from NASA's Wallops Flight Facility, Wallops Island, Va., onboard a Minotaur I rocket. It will be placed into a circular (410 kilometers altitude) orbit at a 40 degree inclination. The micro satellite features the following 11 onboard instrument packages:

- Enhanced Commercial Imager
- RoadRunner On-board Processing Experiment (ROPE)
- Common Data Link (CDL)
- Target Indicator Experiment (TIE)
- Autonomous Operations
- Hall Effect Thruster (HET)
- Inertial Stellar Compass (ISC)
- Low Power Transceiver (LPT)
- Integrated GPS Occultation Receiver (IGOR)
- Atmospheric Density Spectrometer (ADS)
- Experimental Solar Array



AFRL provides the spacecraft and first year of on-orbit operations. SMC's SD& TW is providing launch services. The spacecraft is built by MicroSat Systems, Inc., with the command and data handling system, electrical power system, as well as the flight software supplied by Broad Reach Engineering. Finally, Jackson and Tull is responsible for innovative integration and testing of the spacecraft.