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## FASTSAT – MISSION RESULTS FROM THE SPACE TEST PROGRAM S26 MISSION

**Abstract**

Space Test Program Mission S26 (STP-S26) was the twenty-sixth dedicated small launch vehicle mission of the Department of Defense Space Test Program. The mission of the Department of Defense (DOD) Space Test Program (STP) is to provide access to space for experiments from the DOD Space Experiment Review Board (SERB). Mission STP-S26 extended previous standard interface development efforts, implementing a number of capabilities aimed at enabling responsive access to space for small experimental satellites and payloads. The STP-S26 Minotaur-IV launch vehicle was configured in a Multi-Payload Adaptor configuration which launched FASTSAT and six other spacecraft on November 19, 2010. This paper will describe the FASTSAT spacecraft and key development and operations lessons learned from this ground-breaking mission.

The FASTSAT commercial satellite bus was developed by Dynetics in Huntsville, AL, USA in partnership with the NASA Marshall Space Flight Center (MSFC) and the non-profit Von Braun Center for Science and Innovation. The innovative approach allowed a small, co-located team to field this new bus on a very aggressive schedule: From authority-to-proceed to ready-for-launch in 15 months. Even with the fast pace, FASTSAT successfully completed both a DOD mission review and received a NASA Certificate of Flight Readiness. The capabilities of FASTSAT, which will be enhanced for future models, include: • 12 Month LEO Mission • Orbit: 650 km • 6 Instrument Capacity • Nanosat Payload Deployer (P-POD) • Spacecraft Mass: 150 kg • Payload Mass: 21 kg • Size 24" x 28" x 38" (ESPA compatible) • Payload Power: 60 W • S-Band Downlink 1 Mbps, Uplink 25 Kbps • Pointing accuracy: 2 degrees/3-Axis; 1 degree/Single Axis

Launched on November 19, 2010, nominal operations are planned through March, 2011. FASTSAT was controlled from the NASA MSFC Huntsville Operations Support Center using three network sites: Wallops, Norway and University of Alaska Fairbanks.