Development of a NASA 6-U Satellite

L. D. Thompson

NASA GODDARD SPACE FLIGHT CENTER-Wallops Flight Facility,

Wallops Island, VA 23337 (USA)

Linda.D.Thompson@nasa.gov / Phone: 757-824-1072 / Fax: 757-824-2149

ABSTRACT

NASA/Wallops Flight Facility has focused on the development of new technologies for the advancement of 6 Unit (6U) small satellites. From the design of the structure and instrument support hardware to improvements in the deployer, NASA is concentrating on maximizing the potential of small satellites for the benefit of science. The telemetry system provides much higher data rates than typical 1U UHF system. 6U provides up to several hundred kilobits per second and utilizes the existing NASA Ground Network for data reception. The guidance, navigation and control system keeps the satellite pointed within ±10° of the sun and has knowledge of the sun vector within 1°. The 6U power design increased the options for different voltages and power switching capabilities and is capable of supporting instruments with higher power requirements. The Command &Data Handling (C&DH) system includes a low-power 520 MHz flight processor which provides more processing capability than existing 1U processor technologies. These optimized technologies will offer the science community a greater opportunity for flying more sophisticated and complex instruments.