

Application Success Story



Simulation

Control Design

Implementation

XSS-10 Micro-Satellite wins AIAA Space Systems Award

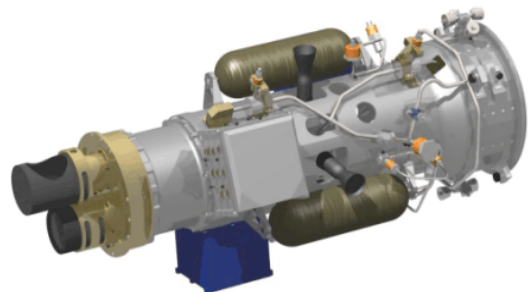
XSS-10, a 28 kilogram micro-satellite, was launched as a secondary payload aboard a Delta II launch vehicle carrying a Global Positioning Satellite (GPS). The XSS-10 mission, which was successfully launched in January 2003, was to demonstrate the complex interactions of line-of-sight guidance with basic inertial maneuvering.

The micro-satellite was attached to the Delta II second stage. Once the second stage separated from the GPS satellite, the XSS-10 micro-satellite waited for a sunlit Air Force Space Control Network pass before ejecting from the Delta II. Once ejected, the micro-satellite successfully commenced an autonomous inspection sequence around the Delta II, and live video was transmitted to ground stations.

In recognition of the outstanding achievements associated with the architecture, analysis, design, and implementation of the XSS-10 micro-satellite, the AFRL XSS-10 team received AIAA's "2003 Space Systems Award".

Key Technologies

- Lightweight propulsion system
- Guidance, navigation & control (GNC)
- Miniaturized communications system
- Primary lithium polymer batteries
- Integrated camera and star sensor



Octant Technologies was responsible for the GNC flight software development and integration. Additionally, Octant was responsible for the ground support software and the mission simulator for this experimental satellite. The XSS-10 Program Manager expressed his appreciation to Octant with the following:

“The Octant team was absolutely critical to the overall success of XSS-10. They performed flawlessly. Thanks for a job well done!”

Thom Davis, IPA
XSS-10 Program Manager
Space Vehicles Directorate
Air Force Research Laboratory

