Cubesat Tech Demo
P-POD

Prepared by
Hawk Institute for Space Sciences
in collaboration with
CalPoly

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Introduction

• Full potential still untapped due to limited launch opportunities
  – This is “a” solution, not “the” solution

• It is now understood that PPOD/Cubesat combination is a valuable asset also for NASA/DOD programs
  – Hardware
  – Human resources of tomorrow

• “Cubesat Tech Demo” P-POD will carry three cubesats with payload dedicated to test technology to be used for future picosatellites.
  – Very short time to create the flight manifest

• HISS and CalPoly will use this opportunity to establish mutual collaboration
  – HISS to provide support on the East Coast
Our approach to responsiveness

- Important to establish a long term relationship
  - Use TacSat3 flight to establish procedures and know-how for future opportunities.
  - Create a good experience with Wallops to increase future opportunities with pico and small satellites community.
- Everything will be as close as possible to a replica of the system used by AMES for GeneSat-1
  - Coordinate for complete symbiosis with PharmaSat
- AFRL/OSC has a single technical POC that coordinates the effort and represents the cubesats developers.
  - HISS provides the POC, NASA WFF provides program oversight
Cubesats

**CP-X**
- A continuing CP generic bus with a payload under development
  - Results will be key to establish future standards

**AeroCube 3**
- Mission goals
  - Test bus performance
  - Photograph LV final stage
  - Further develop mission operations for this satellite class

**HawkSat I**
- Main objective is to kick start the effort on the MD and VA Eastern Shore and validate first generation system.
- Carrying payload for private company
- Validate collaboration with WFF and access to facilities.

**Backups available on short notice**
NASA Wallops involvement

• **WFF will be the location for all I&T effort of the P-POD.**
  – Cubesats Integration
    • P-POD and cubesats arrive at WFF
    • CP/HISS personnel integrate P-POD
    • Will have spare P-POD available
  – P-POD qualification
    • Environmental tests are performed at WFF
    • Final opportunity for cubesats’ batteries charging and health monitoring
  – P-POD is then stored in controlled environment until delivery to OSC.

• **Use of clean room for P-POD integration, functional test and storage.**
  – Testing performed using base facilities
Future

• Tentative launch date is March ‘08
• Maintain a good relationship with SDTG and OSC through serious work and respecting deliverables
• Plan now for future flight opportunities
• Campaign for lowering price to broaden opportunity
• Continue develop cubesat with same level of professionalism… *they* will listen
  – But…be ready to compromise a little

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