RocketPod™ Update

Rex Ridenoure, CEO
Ecliptic Enterprises Corporation
Pasadena, CA and Moffett Field, CA

2008 April 9-11
Spring CubeSat Developers’ Workshop
Cal Poly SLO
Ecliptic Products

- **RocketCam™**: Get the picture.

- **RocketPod™**: Get the ride.
RocketCam Space Heritage

• Launched on 59 projects since 1997
  – 35 rockets to orbit (76 cameras)
  – 22 suborbital launches (52)
  – 2 spacecraft (6)
• All relatively simple integrations
• All relatively low cost
• All successful
• Many more to come
RocketCam to RocketPod
(Delta II example)

RocketPod™ patented in U.S. and Europe
RocketPod Internal View

Sep velocities:
- 2.6 m/s for 0.6 kg payload
- 2.0 m/s for 1.0 kg
- 1.4 m/s for 2.0 kg

Std. CubeSat

“CubeSat+”
Project Accomplishments
2002-2004

• Delivered a flight-like RocketPod working model
  – 8 mos. after contract start (delivered 2004 Jul)
  – Verified functionality in lab and in simulated microgravity

• Delivered a preliminary User’s Manual

• Secured add-on funding for definitive Delta II secondary payload assessment via USAF/SMC
  – Completed 2004 Dec by Boeing

2004 Sep 16
Project Accomplishments
2005-2006

• Assessed integration issues for most other U.S. ELVs, plus some spacecraft
  – Delta IV, Atlas 5, Minotaur, Taurus, Falcon 1

• Settled on Atlas 5 “C Ring” as most desirable RocketPod (and P-Pod) location

Completed DARPA Phase-1 STTR with Cal Poly SLO to identify and work orbital launch opportunities for RocketPod and P-Pod
-- Focused on 2009 Atlas 5 launch
Mid-2007 Baseline Atlas 5 Concept

5 slots
2007-2008 Developments

• 2007-present: Continued with suborbital launch plans
  – Garvey Spacecraft Corp. reusable rocket

• 2007: Ecliptic and Cal Poly proposed DARPA Phase 2 STTR, continuing with C-Ring baseline
  – Awarded but not on contract yet
  – ULA funded by KSC to perform initial NRE for accommodating ** 6 ** standard P-Pod mounting locations
  – Make this interface the same for a single RocketPod mounting
  – Make P-Pod and RocketPod qualification and CubeSat integration processes nearly identical

• 2008: KSC funding for ULA halted before PDR
  – STTR plan and milestones in re-work now
  – Will re-assess other launchers such as Minotaur
  – Expect to be on contract this quarter; 2010 launch target
Two suborbital RocketPod launches (same day) originally planned for last fall on Garvey P-9A/B reusable rocket

- Now scheduled for early June
- Hardware layout designed and built up last summer by two Caltech undergrad interns
- Final system tests, pre-ship review and hardware delivery planned for this month
Ecliptic Summer Internship
(2007)

Jason Cerundolo (l) and Brian Hires (r)
Prepping for P-9A/B
(late last summer)
Garvey P-9A/B in Work
(2007 Dec)
Prepping for P-9A/B
(last week)
Garvey P-9A/B in Work
(Last week)