HatchBasket
System for ISS-Enabled SmallSat Deployments and Externally-Hosted Tech Demo Payloads

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Altius Introduction

1. Space Logistics

2. Space Robotics

3. Aerocapture Technologies
HatchBasket Introduction

- SmallSat deployer carrier structure that mounts in the hatchway of ISS Cargo Vehicles
  - Mounted in lieu of pressure hatch immediately prior to ISS departure
  - Launched as pressurized cargo
- Carries a configurable mix of CubeSat/MicroSat payloads
  - Up to 40X 3U CubeSats or 1X Full ESPA-class payload
Notional HatchBasket CONOPS

- Maneuver to Deployment Orbit(s)
- Deploy Payload(s)
- Offload Cargo
- Load Trash
- Mount HatchBasket
- Load HatchBasket
- Launch to ISS
- Deorbit with Trash
Hosted Payloads and Services

- HatchBasket control avionics can also support externally mounted systems
  - Cameras
  - Sensors
  - Communications Systems
  - Robotic Manipulators

- Either as a hosted-payload platform or as support equipment for deployed payloads
Hosted Service Concepts: Chase Plane

- Cargo Vehicle follows Payload(s) post-deployment and observes with a HatchBasket-hosted sensor suite
- Enables standoff observation of CubeSats/MicroSats
Key Benefits

1. Flexible mix of payload sizes
   - 1U CubeSats to full ESPA
   - Can support taller MicroSats than will fit through JEM airlock
   - Elevator/Deployer system for encapsulating MicroSat payloads

2. Flexible deployment orbits (up to 500km altitude)
   - 2-5X Longer lifetime than directly ISS-deployed payloads
   - Or deployment in low elliptical orbits for reentry tech demos

3. Enhanced missions using hosted sensors/robotics
   - Robotic assembly of modular payloads
   - Observation of spacecraft deployment events
   - Multi-spectral observation of plasma devices
   - Not just “fire and forget” deployments
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