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NASA LAUNCH SERVICES PROGRAM

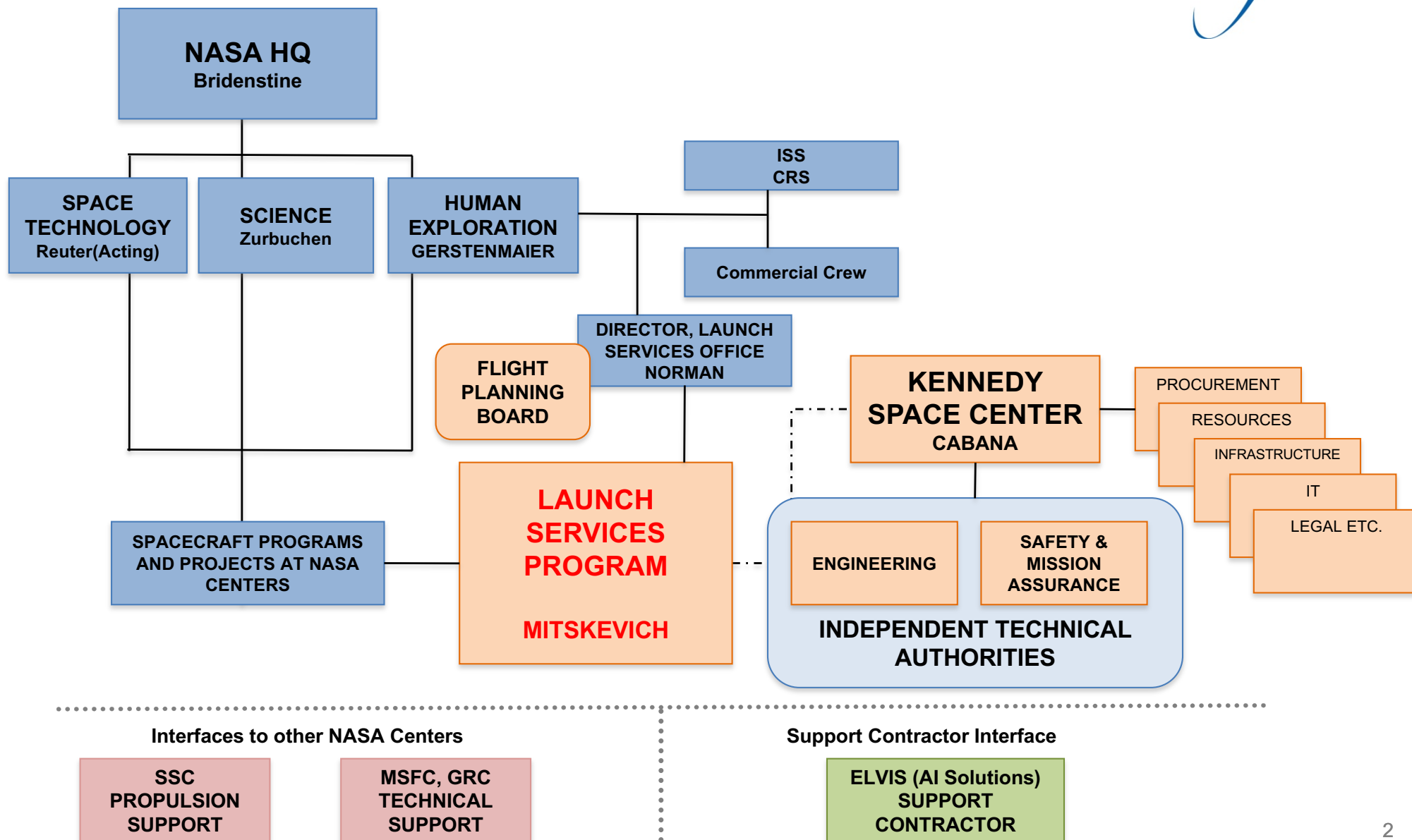
**SALMON-3 SIMPLEX AO
PRE-PROPOSAL CONFERENCE
MAY 22, 2018**

**Garrett L Skrobot
Flight Projects Office**



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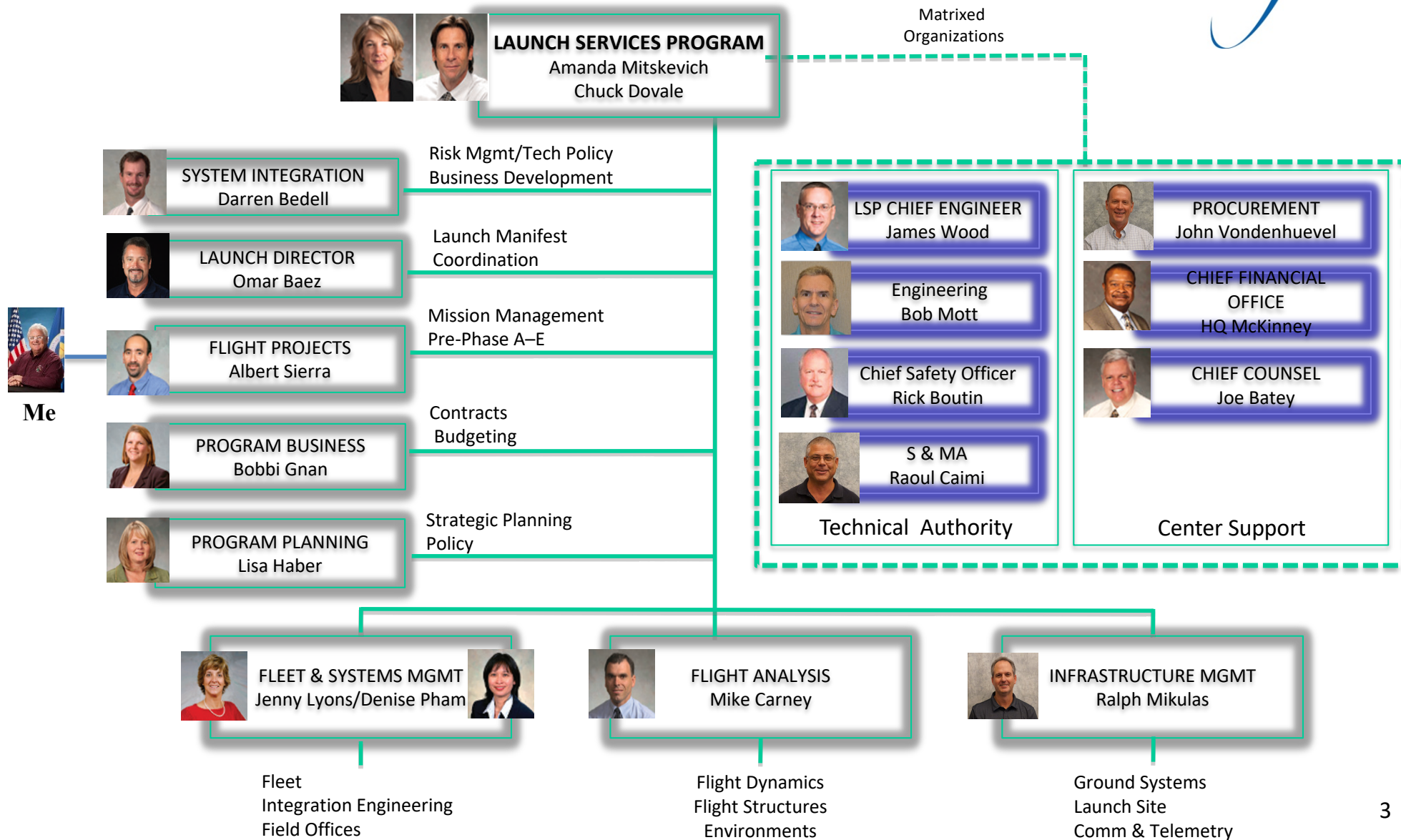
Launch Services Program Relationships (NASA/HEOMD/KSC)





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LSP Organizational Structure





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Launch Services Program



NASA Strategic Plan 2014

Strategic Goal 3:

Serve the American public and accomplish our Mission by effectively managing our people, technical capabilities, and infrastructure.



Objective 3.2:

Ensure the availability and continued advancement of strategic, technical, and programmatic capabilities to sustain NASA's Mission



Key Strategy:

Provide access to space

Lead Office: **HEOMD**

Contributing Program: **LSP**

Key Strategy "Provide access to space" citation:

"...certify and procure domestic commercial space transportation services for the launch of robotic science, communication, weather, and other civil sector missions"

"...provide robust, reliable, commercial and cost-effective launch services"

"...assured access to space through a competitive 'mixed Fleet' approach utilizing the breadth of U.S. industry's capabilities"



LSP Strategic Goals 2014

Goal 1: Maximize Mission Success

Goal 2: Assure Long-Term Launch Services

Goal 3: Promote Evolution of a U.S. Commercial Space Launch Market

Goal 4: Continually Enhance LSP's Core Capabilities





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Launch Services Program



The Launch Services Program provides

- **Management of the launch service**
- **Technical oversight of the launch vehicle production/test**
- **Coordination and approval of mission-specific integration activities**
- **Mission unique launch vehicle hardware/software development**
- **Payload-processing accommodations**
- **Launch campaign/countdown management**



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LSP Functional Structure



- **LSP procures/provides a Launch Service**
 - Its more than the basic launch vehicle
 - We don't buy a tail number
 - This is a commercial FFP procurement with additional insight and oversight
- **To enable this, LSP has two functional sides**
 - **Mission integration**
 - » Mission Integration Team (MIT) assigned to each mission
 - » Manages mission specific procurement, integration, and analysis
 - » Includes launch site integration and processing
 - **Fleet management**
 - » Personnel assigned to each contracted rocket
 - » Includes resident offices within the production facilities of all active providers
 - » We watch the production and performance of entire fleet – we certify the manufacture's production line, not just a particular unit (tail number)
 - » We have a say in any change/upgrade/anomaly
- **LSP maintains the final go or no-go for launch**
- **Interface with Safety and Mission Assurance**
 - Safety
 - Quality

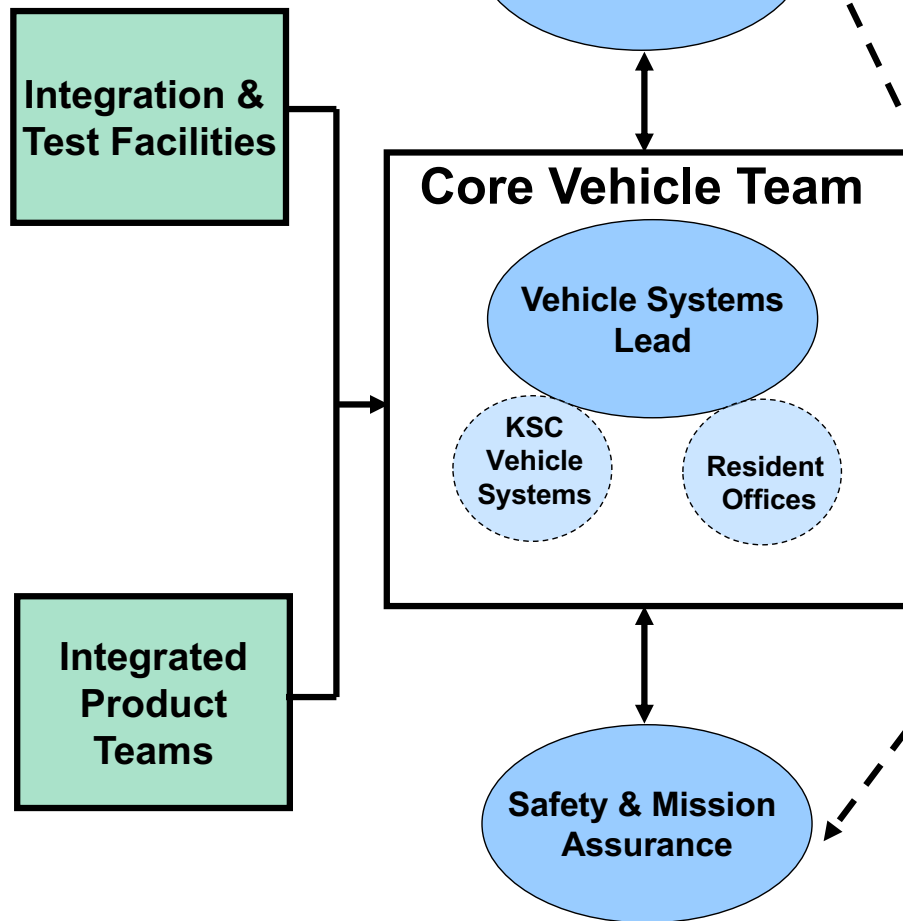


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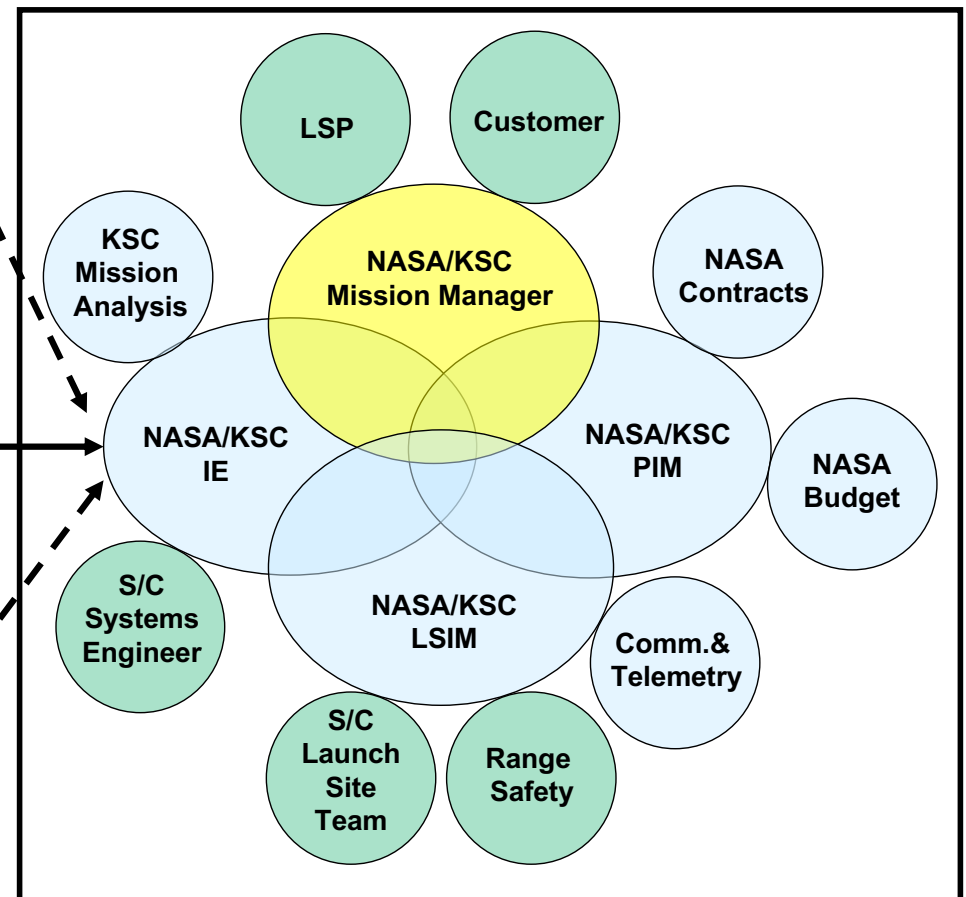
Technical Information flow into the MIT



Core Vehicle Test & Build



Mission Integration



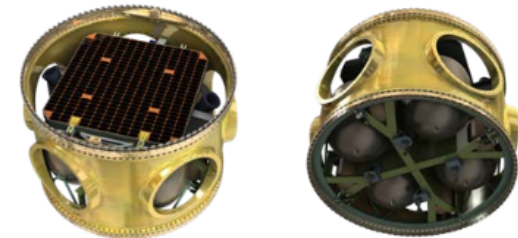
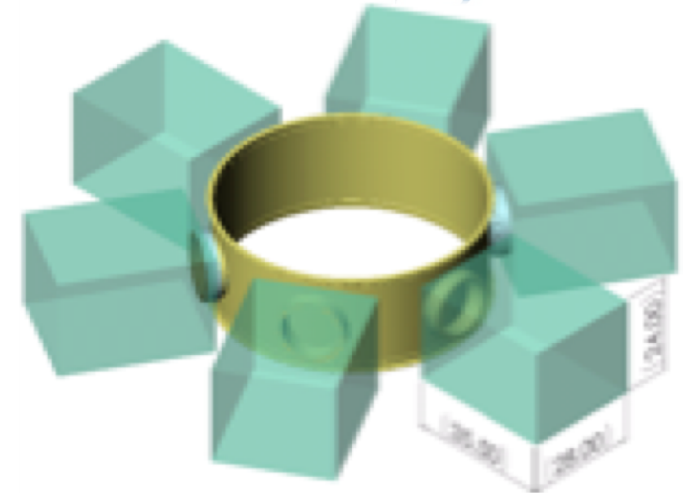


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Options available for this AO



- **Access to Space for the SIMPLEx AO is provided at no charge to the PIMMC for payloads up to the ESPA-Class size (180 kg and 61 x 71 x 97 cm)**
- **This includes CubeSats up to 12U configuration (nominal 24 kg and 2U x 3U x 2U)**
- **Extras for ESPA-class at PI cost:**
 - LV-provided power and telemetry
 - Propulsive ESPA









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Options available for this AO (cont'd)




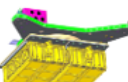
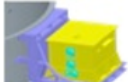
	Volume (interface)	Payload Max Launch Mass	Orbits	Availability of Opportunities (H/M/L)	Launch Vehicles	LV Risk	Comments
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Cubesats

1U		10x10x11.35 cm	**1.33 kg	multiple	Medium	Atlas V / Falcon 9	G	Certified; For low risk-tolerant payload
3U		12 x 12 x 36 cm	**5 kg					
6U		12 x 24 x 36 cm	**12 kg					
12U		23 x 24 x 36 cm	**24 kg					


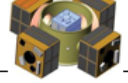
**At the cost of flexibility in manifesting/integration, violation of these mass limits may be allowed. Contact the LSP POC listed below.

Small Sat / Cubesat Constellations

Surf Board		*two 3U dispensers *two 6U dispensers	50 kg	multiple	Low	Falcon 9	G	Certified; For low risk-tolerant payload
Aft Bulkhead Carrier		*51x51x ~87 cm smallsat or cubesat dispensers	80 kg	multiple	Low	Atlas V	G	Certified; For low risk-tolerant payload (future "CubeSat Express" design may hold up to 200lb of CubeSats - currently at PDR level)
C-Adapter Platform		*23 x 31 x 33 cm smallsat	45 kg	multiple	Low	Atlas V / DeltaIV	G	Certified; For low risk-tolerant payload

* see provider websites for updated interface details

ESPA Class Secondaries

ESPA/ SHERPA		*61 x 71 x 97 cm (38cm clampband or sep system)	*six ports 180 kg each	multiple	Medium	Falcon/Atlas	G	Certified; For low risk-tolerant payload
ESPA Grande		*81 x 106 x 97cm (61cm clampband or sep system)	*four or five ports (300 kg each)					

* see provider websites for updated interface details



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Summary



- It is the Launch Service Program's goal to ensure the highest practicable probability of mission success while managing the launch service technical capabilities, budget and schedule.

- Questions must be officially submitted to:

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LSP is ready to respond to your mission specific questions