NASA
LAUNCH SERVICES PROGRAM

SALMON-3 SIMPLEx AO
PRE-PROPOSAL CONFERENCE
MAY 22, 2018

Garrett L Skrobot
Flight Projects Office
Launch Services Program Relationships (NASA/HEOMD/KSC)

NASA HQ
Bridenstine

SPACE TECHNOLOGY
Reuter(Acting)

SCIENCE
Zurbuchen

HUMAN EXPLORATION
GERSTENMAIER

DIRECTOR, LAUNCH
SERVICES OFFICE
NORMAN

ISS
CRS

Commercial Crew

FLIGHT PLANNING
BOARD

LAUNCH SERVICES
PROGRAM
MITSKEVICH

KENNEDY
SPACE CENTER
CABANA

ENGINEERING
SAFETY & MISSION
ASSURANCE

INDEPENDENT TECHNICAL
AUTHORITIES

Interfaces to other NASA Centers

SSC PROPULSION
SUPPORT

MSFC, GRC
TECHNICAL
SUPPORT

Support Contractor Interface

ELVIS (AI Solutions)
SUPPORT
CONTRACTOR

PROCUREMENT
RESOURCES
INFRASTRUCTURE
IT
LEGAL ETC.
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

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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”

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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
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
LSP Functional Structure

• LSP procures/provides a Launch Service
  – It’s 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 manufacturer’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
Technical Information flow into the MIT

Core Vehicle Test & Build

Integration & Test Facilities

Core Vehicle Systems

Vehicle Systems Lead

KSC Vehicle Systems
Resident Offices

Safety & Mission Assurance

Core Vehicle Team

ELV Chief Engineer

Mission Integration

NASA/KSC Mission Manager

LSP
Customer

NASA Contracts

NASA/KSC IE

NASA/KSC PIM

S/C Launch Site Team

Range Safety

Comm. & Telemetry

S/C Systems Engineer

NASA/Budget

Integrated Product Teams
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
## Options available for this AO (cont’d)

<table>
<thead>
<tr>
<th>Cubesats</th>
<th>Volume (interface)</th>
<th>Payload Max Launch Mass</th>
<th>Orbits</th>
<th>Availability of Opportunities (H/M/L)</th>
<th>Launch Vehicles</th>
<th>LV Risk</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1U</td>
<td>10×10×11.35 cm</td>
<td>**1.33 kg</td>
<td>multiple</td>
<td>Medium</td>
<td>Atlas V / Falcon 9</td>
<td>G</td>
<td>Certified; for low risk-tolerant payload</td>
</tr>
<tr>
<td>3U</td>
<td>12 x 12 x 36 cm</td>
<td>**5 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6U</td>
<td>12 x 24 x 36 cm</td>
<td>**12 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12U</td>
<td>23 x 24 x 36 cm</td>
<td>**24 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Surf Board</th>
<th>*two 3U dispensers</th>
<th>*two 6U dispensers</th>
<th>50 kg</th>
<th>multiple</th>
<th>Low</th>
<th>Falcon 9</th>
<th>G</th>
<th>Certified; for low risk-tolerant payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aft Bulkhead</td>
<td><em>51x51x</em>87 cm smallsat or cubesat dispensers</td>
<td>80 kg</td>
<td>multiple</td>
<td>Low</td>
<td>Atlas V</td>
<td>G</td>
<td>Certified; for low risk-tolerant payload (future &quot;CubeSat Express&quot; design may hold up to 200lb of CubeSats - currently at PDR level)</td>
<td></td>
</tr>
<tr>
<td>Platform</td>
<td>*23 x 31 x 33 cm smallsat</td>
<td>45 kg</td>
<td>multiple</td>
<td>Low</td>
<td>Atlas V / DeltaIV</td>
<td>G</td>
<td>Certified; for low risk-tolerant payload</td>
<td></td>
</tr>
</tbody>
</table>

* see provider websites for updated interface details

### ESPA Class Secondaries

<table>
<thead>
<tr>
<th>ESPA/ SHERPA</th>
<th>*61 x 71 x 97 cm (58cm clampband or sep system)</th>
<th>*six ports 180 kg each</th>
<th>multiple</th>
<th>Medium</th>
<th>Falcon/Atlas</th>
<th>G</th>
<th>Certified; for low risk-tolerant payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESPA Grande</td>
<td>*81 x 106 x 97 cm (61cm clampband or sep system)</td>
<td>*four or five ports 300 kg each</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>* see provider websites for updated interface details</td>
</tr>
</tbody>
</table>

LSP Point of Contact: Garrett Skrobot at 321-867-5365 or garrett.l.skrobot@nasa.gov
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:
  
  Garrett L Skrobot  
  Mission Manager  
  NASA Launch Services Program  
  Code VA-C  
  Kennedy Space Center, FL  32899  
  Phone: 321 867 5365  
  Email: garrett.l.skrobot@nasa.gov

LSP is ready to respond to your mission specific questions