

*Discovery 2010 AO*  
**ELV LAUNCH SERVICES PROGRAM INFORMATION SUMMARY**  
*06/07/2010*

**Domestic ELV Launch Services Groundrules/Policy**

Any domestic Expendable Launch Vehicles (ELV) proposed for this AO will be procured and managed by the NASA/Launch Services Program (LSP) using government contracts.

Under the provisions of the NASA contract, the launch service includes the launch vehicle (LV) and associated standard services, non-standard services (mission unique options), and all engineering and analysis. LSP also provides technical management of the launch service, provides technical insight into the LV production/test, coordinates and approves mission-specific integration activities, provides mission unique LV hardware/software development, provides payload-processing accommodations, and manages the launch campaign/countdown. (Reference Attachment 1)

Upon mission selection, LSP using its standing contracts, will competitively select a launch service provider and award a Launch Service Task Order (LSTO) for the mission based on customer requirements. The LSTO is awarded to the Contractor that provides the best value in launch services to meet the Government's requirements based on technical capability/risk, reasonableness of proposed price, and past performance. Accordingly, assumption of a specific launch vehicle configuration as part of the AO proposal will not guarantee that the proposed LV configuration will be selected unless there is firm technical rationale for sole source. This rationale should be clearly explained in the proposal.

All NASA-procured launch services are to be consistent with NASA Policy Directive (NPD) 8610.7, NASA Launch Services Risk Mitigation Policy. Expendable launch services acquired by NASA will be managed in accordance with NPD 8610.23, Technical Oversight of Expendable Launch Vehicle (ELV) Launch Services and NPD 8610.24, Launch Services Program (LSP) Pre-Launch Readiness Reviews. These NPD's can be accessed through the URLs:

[http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal\\_ID=N\\_PD\\_8610\\_007D\\_&page\\_name=main](http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_8610_007D_&page_name=main)

[http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal\\_ID=N\\_PD\\_8610\\_023C\\_&page\\_name=main](http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_8610_023C_&page_name=main)

[http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal\\_ID=N\\_PD\\_8610\\_024B\\_&page\\_name=main](http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_8610_024B_&page_name=main)

Dual manifested or secondary payloads will not be considered under the cognizance of this AO.

**Contributed Domestic or Foreign Launch Vehicles**

Foreign launch vehicles are not considered for this AO.

**Launch Vehicle Information/Configuration/Performance**

The LSP has developed an advanced planning documentation site for vehicles currently on contract to NASA. This web site contains information relevant to NASA-procured launch services. This planning tool can be found at the following web address: <https://elvppg.ksc.nasa.gov>. Access to this site requires a self-determined password, which is activated by the site administrator at the LSP. A user can request access/password activation by going to the site and following the directions provided on the log-in screen as well as providing the required information. Access to this web site can typically be activated within 24-48 hours during the week. For questions, utilize the point(s) of contact listed in this document.

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The Offerors should select the minimum launch service performance class that meets their requirements including adequate performance margins. Attachment 2 describes these performance ranges in terms of mass to orbit (kilograms) for a range of C3 values. The performance data in Attachment 2 is based upon the NASA Launch Services I (NLS I) contracted performance data and is to be used for planning purposes only. The NLS II contract is currently being negotiated. For variations from what is found in Attachment 2, refer to the contact listed in this document for an assessment. The Offerors should specifically state in the proposal the launch service performance range to meet their requirements for this mission.

**Launch Service Costs**

The launch service costs will be held by the Discovery Program. Provided in the launch service costs are the launch service, a nominal allocation for mission unique launch vehicle modifications/services, mission integration, launch site payload processing, range safety and launch vehicle telemetry support. Attachment 2 describes performance ranges for six categories of launch vehicles in the intermediate performance class. The standard service will result in the least capable launch vehicle (standard performance class with a 4-meter fairing). A charge will be counted against the PI-Managed Mission Cost for investigations that require the use of more capable launch vehicles as shown in Table 2 of the AO (ref: AO section 5.9.2.).

If an Advanced Stirling Radioisotope Generator (ASRG) is proposed to be used, the costs of non-standard launch services will be paid for by NASA. A charge will be counted against the PI-Managed Mission Cost for missions utilizing radioactive materials other than the ASRG per Table 3 of the AO (ref: AO section 5.9.2.).

**Evaluation Criteria**

Attachment 3 shows the Evaluation checklist that will be used as a guide for the evaluators during the proposal evaluation phase. This checklist should give the offerors an indication of the types of information that are expected to be contained in the proposals.

**NASA Launch Services Program Point of Contact for Additional Information**

Prior to AO release, additional information including performance quotes, mission integration inquiries and costs may be obtained directly from the point of contact below. Otherwise questions must be directed as indicated in the Technical and Scientific Inquiries section of the AO.

**Rex A. Engelhardt**  
**Mission Manager**  
**NASA Launch Services Program**  
**Code VA-C**  
**Kennedy Space Center, FL 32899**  
**Phone: 321-867-5150**  
**Email: Rex.A.Engelhardt@nasa.gov**

# Attachment 1

## NASA-LSP Standard Launch Services

This list provides an overview of the standard services that the spacecraft customer receives with NASA-LSP as their launch service provider.

### **Integrated Services:**

- Range support and services
- Payload processing facility and support
- Contractor Engineering support
- Base Support contractors
- Logistics
- Hazardous support

### **Launch Vehicle and Mission Unique:**

- Launch vehicle that meets customer's performance needs
- Payload Fairing with approximately 2 access doors with thermal and/or acoustic blankets
- Payload Separation System
- Payload Adapter
- Test Payload adapter availability
- Spacecraft Spin/De-spin capability for separation (if required)
- Collision/Contamination Avoidance Maneuver (CCAM) capability if needed
- Electrical interface connectors (approximately 3 sets)
- Mission Unique Reviews (approximately 3)
- Readiness Reviews (approximately 4)
- Risk Management
- Launch vehicle insight and approval
- Mission integration management & engineering support
- Launch campaign management
- Down range telemetry assets for LV data

## **NASA-LSP Standard Nuclear Launch Services for Missions utilizing a Radioisotope Heater Unit (RHU)**

- Nuclear Databook
- FTS/ADS launch vehicle modifications
- Ground video coverage
- NEPA/Launch Approval support Testing
- Range Support i.e. RSAS
- Near Pad Contingency Detectors
- DER Certification Support
- Nuclear Payload Processing
- Radiation Safety Operations
- Security
- Health Physics Support
- Radiation Contingency support
- Facility Modifications

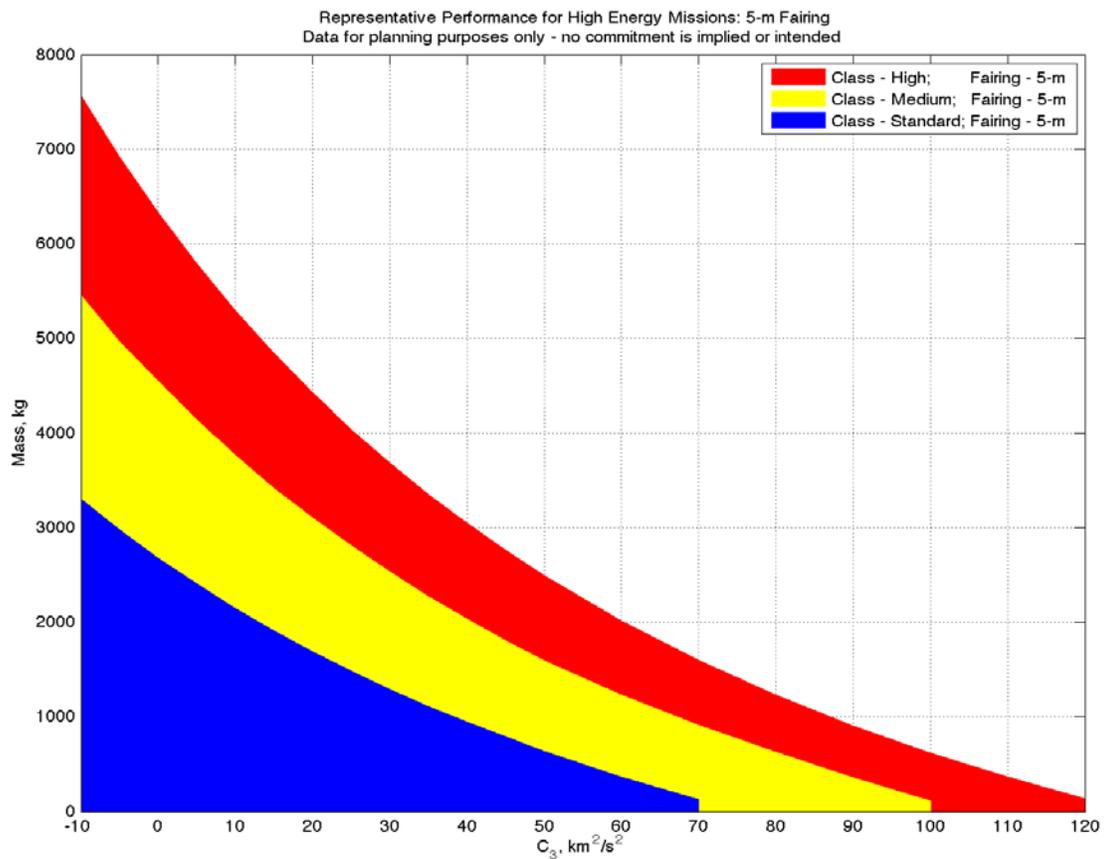
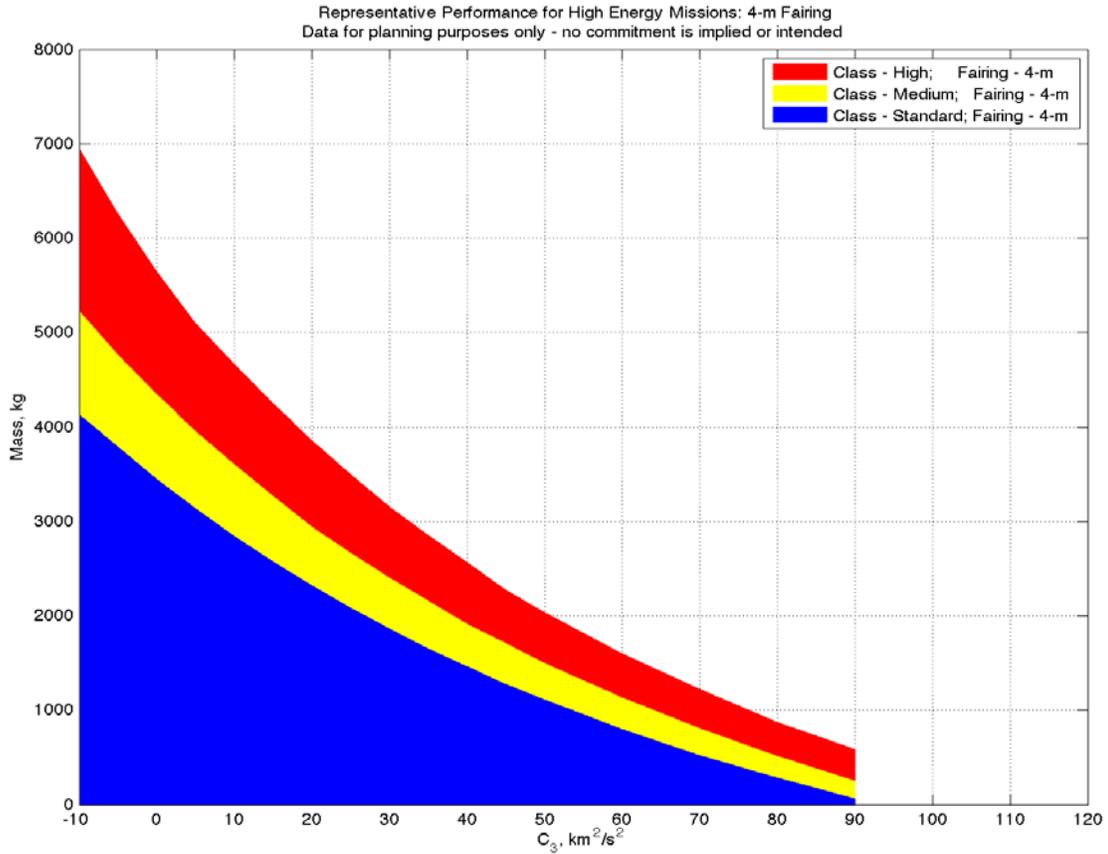
## **Attachment 1**

### **NASA-LSP Standard Nuclear Launch Services for Missions utilizing an Advanced Stirling Radioisotope Generator (ASRG)**

- In addition to all services listed above for the RHU, spacecraft customers utilizing an ASRG also receive the following:
  - Ship mounted Radar
  - ASRG Pathfinder (complete walkthrough with ASRG mockup, from storage, to the payload hazardous servicing facility, to the launch pad for a simulated mounting on SC)
  - Government Facility for storage of ASRG

# Attachment 2

## Launch Service Performance Ranges in the Intermediate Class



# Attachment 3

## AO Evaluation Form Launch Services Program

Proposal Name: \_\_\_\_\_  
Proposal #: \_\_\_\_\_  
Evaluator POC: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

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### **Launch Service Technical Evaluation:**

**Overall Assessment:** - Given the ground rules in the AO, is the proposed launch vehicle (LV) concept feasible for this application? ( Yes or  No)

Comments: \_\_\_\_\_  
\_\_\_\_\_

**LV Performance:** Area of concern ( Yes or  No)

Proposed LV configuration: \_\_\_\_\_

Proposed Launch Date: \_\_\_\_\_

Launch Period (MM/DD/YYYY to MM/DD/YYYY): \_\_\_\_/\_\_\_\_/\_\_\_\_ to \_\_\_\_/\_\_\_\_/\_\_\_\_

Launch Window (On any given day of the launch period Minutes:Seconds): \_\_\_\_ : \_\_\_\_

Orbit requirements: Apogee: \_\_\_\_ km Perigee: \_\_\_\_ km Inclination: \_\_\_\_ deg.

High Energy requirements: C<sub>3</sub>: \_\_\_\_ km<sup>2</sup>/sec<sup>2</sup> DLA: \_\_\_\_ deg RLA: \_\_\_\_ deg

Proposed LV Performance: \_\_\_\_\_

Mass (including reserves) Dry Mass: \_\_\_\_\_ kg Wet Mass: \_\_\_\_\_ kg

Dry Mass Margin: \_\_\_\_\_ kg \_\_\_\_\_ %

Wet Mass Margin \_\_\_\_\_ kg \_\_\_\_\_ %

Formulas:

Mass Margin kg = LV Performance – S/C Mass (including reserves)

Mass Margin % = [(Mass Margin kg) / S/C Mass (including reserves) kg] X 100

LV Performance Comments/issues/concerns:

\_\_\_\_\_  
\_\_\_\_\_

**Launch Service Cost Assessment:** Area of concern ( Yes or  No)

Is there additional funding for any mission unique modifications/services? ( Yes or  No)

**LV Integration:** Area of concern ( Yes or  No)

Does the proposer have experience in LV integration? ( Yes or  No)

### Attachment 3

**LV to Spacecraft Interface:** Area of concern ( Yes or  No)

Proposed Payload Fairing (PLF) \_\_\_\_\_

Spacecraft (S/C) Dimensions: Radial: \_\_\_\_\_ m Height \_\_\_\_\_ m

Any intrusions outside of the PLF usable dynamic volume? ( Yes or  No)

**Mechanical Interface:**

Standard Adapter: \_\_\_\_\_

Custom Adaptor: \_\_\_\_\_

**Electrical Interface:**

Standard \_\_\_\_\_ Pin(s) Connector(s): ( Yes or  No)

**Mission Unique requirements:**

Instrument T-0 GN<sub>2</sub> Purge: ( Yes or  No)

T-0 S/C Battery Cooling: ( Yes or  No)

Planetary Protection Requirements: ( Yes or  No)

Contamination Control Requirements: PLF: ( Yes or  No) LV adapter: ( Yes or  No)

Cleanliness Level: \_\_\_\_\_ other: \_\_\_\_\_

**Unique Facility Requirements:** ( Yes or  No)

Pad: \_\_\_\_\_

S/C Processing Facility: \_\_\_\_\_

**S/C Environmental Test Plans**

Environmental Test Plan/Flow described: ( Yes or  No)

Test Levels provided: ( Yes or  No)

Test Schedule provided: ( Yes or  No)

Comments/issues/concerns: \_\_\_\_\_

**Spacecraft Schedule:** Area of concern ( Yes or  No)

**Adequate timing of:** Launch Service Integration Start Time: ( Yes or  No)

S/C Environmental Test Program: ( Yes or  No)

Delivery of Verified S/C Model: ( Yes or  No)

S/C ship date: ( Yes or  No)

S/C to LV integrated Operations: ( Yes or  No)

**Missions with Radiological material** Area of concern ( Yes or  No)

List the Radiological Sources: \_\_\_\_\_

Are unique facilities required to store/process the Radiological Sources? ( Yes or  No)

Any LV modifications required for additional safety or Launch approval? ( Yes or  No)