

**SMALL EXPLORERS (SMEX) 2014
ANNOUNCEMENT OF OPPORTUNITY (AO)
ELV LAUNCH SERVICES PROGRAM INFORMATION SUMMARY
06/17/2014**

NASA-Provided ELV Launch Services Ground Rules/Policy

This document provides additional information for NASA-provided ELV launch services. Under this AO, the Proposer may arrange alternative access to space. Reference the AO paragraph 5.9.4 for more information on those options.

Any Expendable Launch Vehicles (ELV) provided by NASA 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), all engineering and analysis, and minimum performance standards. LSP also provides technical management of the launch service, 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.

At the appropriate time following 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. Any such rationale should be clearly identified and 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://nodis.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=8610&s=7D>

<http://nodis.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=8610&s=23C>

<http://nodis.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=8610&s=24C>

Launch Vehicle Information/Configuration/Performance

For a NASA-provided ELV launch service, the proposal must be designed to the enveloping launch vehicle characteristics and capabilities provided in Attachment 1.

The LSP has developed a performance website for vehicles currently on contract to NASA. This website contains information relevant to NASA-procured launch services. This planning tool can be found at the following web address: <http://elvperf.ksc.nasa.gov/elvMap/>. Access to this site is available to anyone with an internet connection and is generally available at any time. For questions, utilize the point(s) of contact listed in this document.

Launch Service Costs

The Astrophysics Explorer Program will hold the launch service costs. Standard services provided in the launch service costs to be covered by the Astrophysics Explorer Program are:

- the launch vehicle, engineering, analysis, and minimum performance standards and services provided by the NLS contract in place at the time of LV selection;
- mission integration;
- launch site payload processing;
- range safety support;
- down range telemetry support (launch vehicle only);
- standard mission unique launch vehicle modifications/services –items typically necessary to customize the basic vehicle hardware to meet spacecraft driven requirements. Already budgeted for are items like Pre-ATP studies such as coupled loads and/or trajectories analysis, a GN2 or pure air purge prior to T-0 and 10,000 Class integration environments.
- potential additional funding needed to support selectees requiring launch from sites other than the LV base launch complex.

The Explorer LV budget set aside for SMEX 2014 does not include funding for launch delays.

Evaluation Criteria

Attachment 2 shows a preliminary Evaluation checklist to be used as a guide for the evaluators during the proposal evaluation phase. This checklist should give 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

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

Bruce E. Reid
Mission Manager
NASA Launch Services Program
Code VA-C
Kennedy Space Center, FL 32899
Phone: 321-861-8119
Email: Bruce.E.Reid@nasa.gov

Attachment 1

ELV Launch Services Characteristics/Capabilities

Performance Information:

Table 1 lists the performance from typical inclinations for most common launch sites. Any deviation from these inclinations will have an impact on available performance. For mission specific information utilize the point(s) of contact listed in this document.

Table 1 Launch Vehicle Maximum Performance vs. Launch Site

Launch Site	Assumed Inclinations	Altitude Range	Max Performance
CCAFS	28.5° - 51.6°	200 km - 2000 km	450 kg
RTS	0° - 60°	200 km - 2000 km	465 kg
VAFB	70° - 90° Sun-synch	200 km - 1200 km	375 kg
WFF	38° - 51.6°	200 km - 1300 km	435 kg

Ground Rules:

- This performance does not include the effects of orbital debris compliance, which must be evaluated on a mission-specific basis. This could result in a significant performance impact for missions in which launch vehicle hardware remains in Earth orbit.
- Guidance reserves account for 3-sigma flight performance.
- Performance is for baseline configuration; non-standard, mission-unique hardware will require additional assessment.
- 38-inch (0.96-meter) separation system.
- Mass of entire separation system is book-kept on the launch vehicle side.
- Listed performance is for separated spacecraft mass.

Payload Envelope:

Figure 1 below shows the static payload fairing envelope.

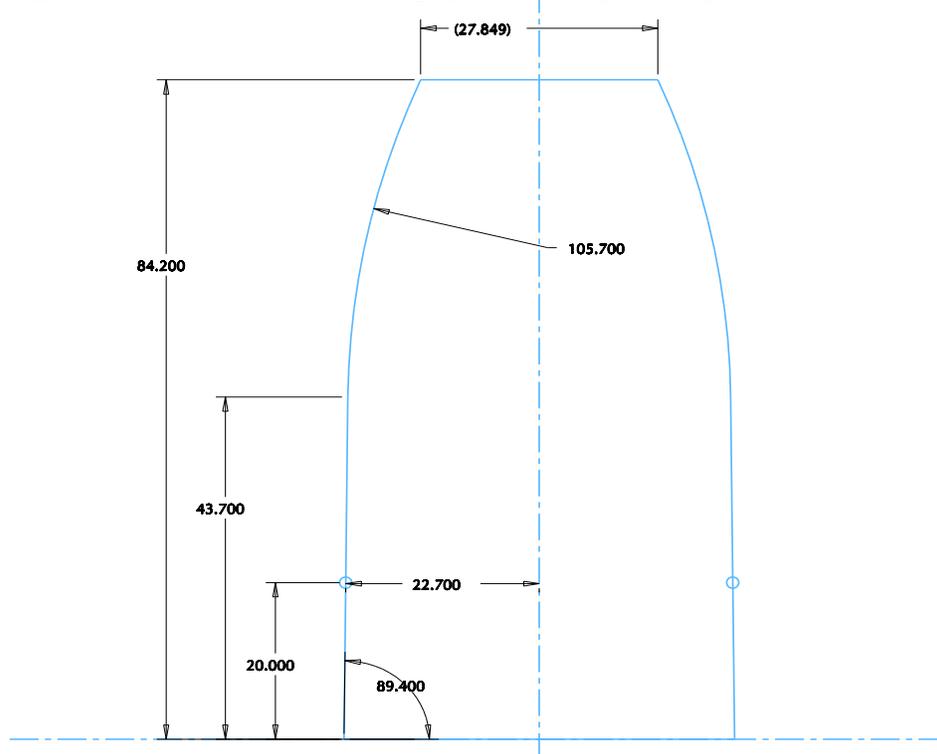


Figure 1
Static Fairing
Envelope
(in.)

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Attachment 2
Evaluation Form
Launch Services Program

Proposal Name: _____

Proposal #: _____

Evaluator POC: _____

Phone: _____

Email: _____

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: C3: _____ km²/sec² 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)

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 GN₂ 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)