DISCOVERY 12 AO
ELV LAUNCH SERVICES PROGRAM INFORMATION SUMMARY
01/06/2006

Domestic ELV Launch Services Groundrules/Policy

Any domestic Expendable Launch Vehicles (ELV) proposed for this AO will be procured and managed by NASA/Launch Services Program (LSP) via the NASA Launch Services (NLS) contract. Under the provisions of this AO, domestic launch services cannot be procured directly by the PI/proposed team, nor can a partner contribute a domestic launch service.

Under the provisions of the NLS 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, mission unique LV hardware/software development, provides payload-processing accommodations, and manages the launch campaign/countdown.

Upon mission selection, LSP via the NLS Contract will competitively select a launch service provider for the mission based on customer requirements. 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 for award of a Launch Service Task Order, 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 from 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_007C_&page_name=main

http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_8610_023A_&page_name=main

http://nodis3.gsfc.nasa.gov/displayDir.cfm?Internal_ID=N_PD_8610_024B_&page_name=main

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

Foreign Launch Vehicles

The Launch Services Program can not procure foreign launch vehicles. Any foreign launch service offered as an international cooperative must be arranged and managed by the spacecraft program.

Launch Vehicle Information/Configuration/Performance

The NASA Launch Services Program (LSP) has developed an on-line payload planner's guide for NASA missions. This web site contains information relevant to NASA-procured launch services. The information provided includes all NLS LV configurations, standard/non-standards services that are available as well as payload fairing envelopes and environments. 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 KSC. 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, contact LSP/ELV. This web site contains no information on foreign LVs.

The Offerors should select the minimum launch service class that meets their requirements including adequate performance margins. As a reference tool, the LSP has developed an on-line tool to assist in determining LV performance. This tool is publicly accessible at the following web address: http://elvperf.ksc.nasa.gov. The performance information reflects figures consistent with the NLS Contractual commitments. All of these figures reflect separated Spacecraft mass and each have associated groundrules/assumptions (including the adapter-type). For variations from what is found on-line, contact LSP for an assessment. The Offerors should specifically state in the proposal the launch service performance range to meet their requirements for this mission. This web site contains no information on foreign LVs.

Nuclear Launch Approval

For missions using nuclear materials, the LSP is responsible for managing the development, coordination and technical content of the LV Databooks. The costs for the mission unique databook(s) and other LV-related items (e.g., range requirements for the LV, FTS system, event sequence diagrams, etc.) have been accounted for in the noted nuclear missions cost figures. These costs are only applicable for missions that are using nuclear materials on-board.

Launch Service Costs

Table 1 provides Launch Service cost figures for each of the given Launch Service performance classes. Based on the Offeror's selection of the individual ELV configuration(s) that meet their technical requirements, the Offeror should use the respective Launch Service class dollar figures in the overall mission cost. Cost risk within each Launch Service Class

should be considered constant for purposes of this AO (i.e. proposals should not attempt to distinguish differences in cost between launch vehicles within a respective class).

Funding estimates for the proposal are stated in real-year dollars and assume a launch NLT Sept 2013**.** The funding profiles provide for the launch service, nominal allocation for mission unique launch vehicle modifications/services, mission integration, launch site payload processing, and the LV-related tasks for the Nuclear Launch Approval process. The estimated costs for Nuclear Launch Approval covered in these figures include items such as LV Databooks, Launch site accommodations for nuclear materials, material handling/logistics by DOE, and Range Safety requirements associated with the LV. The funding profiles are for planning purposes only and may be adjusted after launch service award.

Evaluation Criteria

Attachment 1 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

Additional information including, but not limited to, availability of smaller or larger launch vehicles, performance quotes, mission integration inquiries and costs may be obtained from:

Norman M. Beck, Jr
Advanced Planning Manager
NASA Launch Services Program
Code VA-A
Kennedy Space Center, FL 32899

Phone: 321-867-6348
Email: Norman.M.Beck@nasa.gov

Table 1
Launch Services Performance Ranges and Cost Figures $M

ELV Launch Service Class (non-nuclear)

Discovery 12 SMD Pricing Exercise Summary - FY 2011 Launch								
Performance Range (Kg) See Notes		**Launch Date**	**Launch Site**	**FY08**	**FY09**	**FY10**	**FY11**	**Total**
500Km	**C3 = 0**							
0 to 1396	NA	FY 2011	CCAFS	**$1**	**$24**	**$26**	**$23**	**$74**
1397 to 4365	0 to 1235	FY 2011	CCAFS	**$1**	**$34**	**$37**	**$34**	**$106**
4366 to 5190	1236 to 1425	FY 2011	CCAFS	**$1**	**$39**	**$42**	**$38**	**$120**
5191 to 9445	1426 to 3500	FY 2011	CCAFS	**$1**	**$48**	**$52**	**$47**	**$148**

Nuclear Costs	**FY08**	**FY09**	**FY10**	**FY11**	**Total**
	$3	**$7**	**$5**	**$4**	**$19**

Discovery 12 SMD Pricing Exercise Summary - FY 2012 Launch								
Performance Range (Kg) See Notes		**Launch Date**	**Launch Site**	**FY09**	**FY10**	**FY11**	**FY12**	**Total**
500Km	**C3 = 0**							
0 to 1396	NA	FY 2012	CCAFS	**$1**	**$25**	**$27**	**$24**	**$77**
1397 to 4365	0 to 1235	FY 2012	CCAFS	**$1**	**$35**	**$38**	**$35**	**$109**
4366 to 5190	1236 to 1425	FY 2012	CCAFS	**$1**	**$39**	**$43**	**$39**	**$122**
5191 to 9445	1426 to 3500	FY 2012	CCAFS	**$1**	**$49**	**$53**	**$48**	**$151**

Nuclear Costs	**FY09**	**FY10**	**FY11**	**FY12**	**Total**
	$3	**$7**	**$5**	**$4**	**$19**

Discovery 12 SMD Pricing Exercise Summary - FY 2013 Launch								
Performance Range (Kg) See Notes		**Launch Date**	**Launch Site**	**FY10**	**FY11**	**FY12**	**FY13**	**Total**
500Km	**C3 = 0**							
0 to 1396	NA	FY 2013	CCAFS	**$1**	**$27**	**$29**	**$25**	**$82**
1397 to 4365	0 to 1235	FY 2013	CCAFS	**$1**	**$36**	**$40**	**$36**	**$113**
4366 to 5190	1236 to 1425	FY 2013	CCAFS	**$1**	**$41**	**$45**	**$41**	**$128**
5191 to 9445	1426 to 3500	FY 2013	CCAFS	**$1**	**$51**	**$55**	**$50**	**$157**

Nuclear Costs	**FY10**	**FY11**	**FY12**	**FY13**	**Total**
	$3	**$7**	**$5**	**$4**	**$19**

Notes:

- Performance class estimate to 28.5 degrees inclination at 500 km altitude

- All costs are estimated in real-year dollars (order year=L-27 mo.) based on current NLS contract information. Phasing reflects 30 months integration cycle standard for EELV class.
- The funding profiles provide for the launch service, nominal allocation for mission unique launch vehicle modifications/services, mission integration, launch site payload processing, range safety, and telemetry/communications
- Budget does not include launch delays.
- The launch service prices are estimates and are not to be considered commitments from the Launch Service Program
- Launch service estimates are subject to change.
- Performance ranges from 1397 to 5190 Kg are an estimate. There is no guarantee that launch services in this range will be available to support these launch dates.
- Prices based on POP '05 pricing assumptions using current NASA contract mechanisms.

- Performance class estimate to C3 = 0

- All costs are estimated in real-year dollars (order year=L-27 mo.) based on current NLS contract information. Phasing reflects 30 months integration cycle standard for EELV class.
- The funding profiles provide for the launch service, nominal allocation for mission unique launch vehicle modifications/services, mission integration, launch site payload processing, range safety, and telemetry/communications
- Budget does not include launch delays.
- The launch service prices are estimates and are not to be considered commitments from the Launch Service Program
- Launch service estimates are subject to change.
- Performance ranges from 0 to 1425 Kg are an estimate. There is no guarantee that launch services in this range will be available to support these launch dates.
- Prices based on POP '05 pricing assumptions using current NASA contract mechanisms.

Attachment 1

AO 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: C_3: _____ km^2/sec^2 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 Launch Service cost profile consistent with AO LV Appendix? (☐ 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 GN_2 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)