

STATEMENT OF WORK FOR INTEGRATION AND LAUNCH OF U-CLASS PAYLOADS

May 14, 2015

OBJECTIVE

The National Aeronautics and Space Administration (NASA) Launch Services Program (LSP) is seeking a Commercial Launch Broker (CLB) capable of integrating and launching U-Class Payloads (UCP) with a Launch Vehicle Provider (LVP) in the CY15 – CY17 timeframe (February 2015 through December 2017). It is anticipated that NASA will require multiple launch opportunities for UCP during this period of performance. The UCP shall consist of a nano-satellite that typically uses commercial, off-the-shelf electronic components in a scalable CubeSat form factor of 10 cm x 10 cm x 10 cm. Miniaturized space research satellites flown by NASA are primarily developed by a variety of educational and Governmental organizations. This document defines the work to be performed by the CLB in support of this effort, including scope of work, ground rules and assumptions, deliverables, and schedule.

SCOPE

The CLB shall provide all labor and other resources, unless otherwise noted, to accomplish the work in this contract including, but not limited to, the following:

1. Determine the mass limitations, deployment time, and deployment direction for the UCP opportunities available to the Government.
2. Provide all mission requirements to the UCP provider through the Interface Control Document (ICD).
3. Develop and manage the verification matrix for the ICD requirements.
4. Revise the ICD between the launch vehicle and the UCP as appropriate.
5. Provide a schedule for the mission integration cycle.
6. Provide the flight dispenser for the UCP.
7. Integrate the UCP into the CLB provided dispenser, in accordance with the documented ICD requirements, for flight.
8. Integrate the dispenser (with the UCP) onto the launch vehicle both mechanically and electrically, in accordance with the documented ICD requirements.
9. Deploy the UCP into an orbit with an altitude in accordance with NASA Procedural Requirements for Limiting Orbital Debris NPR 8715.6A.
10. Separate the UCP from the CLB-provided dispenser.
11. Provide confirmation that the UCP separated from the dispenser.

GROUND RULES & ASSUMPTIONS:

General

1. The UCP providers are responsible for packing and shipping of their UCP to the Launch Integration Site or other facility as designated by CLB, in preparation for delivery to the Launch Integration Site, maintaining compliance with the ICD.

2. The CLB shall provide their approach to receiving approval/licensing (i.e., FAA) and obtaining the necessary coordination with the proposed launch site and Range, if applicable, including any Flight Termination System (FTS) approvals.

### NASA

1. NASA LSP will provide the CLB with a list of UCP to be manifested on the mission(s).

### CLB

1. Shall coordinate and facilitate all communication and data exchanges between the UCP and LVP.
2. Shall allow NASA to attend any integration review for the mission.
3. Shall ensure all UCP requirements are met in accordance with the CLB to UCP ICD.
4. Shall coordinate and conduct the UCP Mission Readiness Reviews to verify that the UCP are flight worthy and have met all flight requirements for the mission.
5. Shall deliver flight certified/qualified UCP to the LVP per mission schedule.
6. Shall support the development/maintenance of the UCP to Dispenser ICD.
7. Shall provide any UCP data, UCP to Dispenser ICD requirement verification evidence to the LVP as required.
8. Shall integrate the UCP in the CLB provided dispenser and then integrate onto the LV at the LV integration site both mechanically and electrically.
9. Shall submit any required Federal Communication Commission frequency utilization applications for the applicable UCP mission.
10. Shall produce and submit the mission specific Missile System Prelaunch Safety Package (MSPSP) for the UCP and obtain range approval.
11. Shall coordinate and conduct the UCP Mission Readiness Review (MRR) in support of the mission.
12. Shall deploy the UCP into an orbit with an altitude in accordance with NASA. Procedural Requirements for Limiting Orbital Debris NPR 8715.6A.
13. Shall provide confirmation that the UCP separated from the dispenser.
14. Shall provide NASA LSP with a list of potential available missions with their capability.

### DELIVERABLES / SCHEDULE:

The CLB shall meet the following milestones and provide the following deliverables:

1. Kick-off Meeting  
The CLB shall perform a Kick-off Meeting within one (1) week after authorization to proceed (ATP). The kick-off meeting will be held by telecon with the NASA team, to ensure that expectations are clear and to discuss ground rules and assumptions. At this meeting, the CLB shall summarize relevant data generated to date and provide a proposed schedule of events. The telecon shall not exceed 2 hours in duration. This presentation package shall be submitted as a formal deliverable. A draft copy shall be submitted to LSP prior to the meeting, and a final updated version shall be submitted to LSP following the meeting if changes are made by the CLB.
2. Launch Vehicle Selection  
The CLB shall submit a letter to LSP that the launch vehicle for the mission has been selected to include launch date, capacity, and the delivery need date for the UPCs.

3. Mission System Review

The Mission System Review will determine the readiness of the CLB to start fabrication and testing of flight systems. The CLB shall provide the following at the Mission System Review:

- a. Updated Integration Schedule
- b. Final ICD
- c. Launch Operation Plan and execution
- d. Deployer hardware configuration and physical location of the UCP on the launch vehicle

This presentation package shall be submitted as a formal deliverable. A draft copy shall be submitted to LSP prior to the meeting, and a final updated version shall be submitted to LSP following the meeting if changes are made by the CLB.

4. Mission Readiness Review

The Mission Readiness Review (MRR) will assess the readiness status of a flight UCP prior to integration to the dispenser. The MRR covers all activities required for a successful launch: flight systems, ground systems, supporting facilities, and operations personnel.

The MRR is chaired by the CLB and is held approximately one month before the UCP is integrated to the dispenser.

Upon successful completion of the MRR, the CLB shall document that the UCP is ready to integrate. MRR approval requires that a consensus on a final readiness assessment of the UCP be reached.

This presentation package shall be submitted as a formal deliverable. A draft copy shall be submitted to LSP prior to the meeting, and a final updated version shall be submitted to LSP following the meeting if changes are made by the CLB.

5. UCP integration

The completion of integration of the UCP into the flight dispenser.

6. Launch

Initiation of the dispenser and release of the UCP.

NOTE: All deliverables shall be provided electronically via email in PDF format unless otherwise specified. All deliverables shall be submitted to the appropriate Contracting Officer and the NASA technical contacts listed below.

MILESTONE PAYMENT SCHEDULE

<b>Milestone</b>	<b>Event</b>	<b>Time</b>	<b>Payment Amount Percentage</b>	<b>Payment</b>
1	Completion of Kickoff Meeting	ATP + 1 Week	10%	\$TBD
2	Launch Vehicle Selection	*	10%	\$TBD
3	Mission System Review	*	20%	\$TBD
4	UCP Mission Readiness Review	*	20%	\$TBD
5	UCP integration	*	20%	\$TBD
6	Launch and initiation of dispenser	*	20%	\$TBD

\* To be proposed by offeror

**NASA Point of Contact**

NASA Mission Managers:

Garrett Skrobot: [Garrett.L.Skrobot@nasa.gov](mailto:Garrett.L.Skrobot@nasa.gov)  
Phone 321-867-5365  
Mailstop: VA-C  
KSC, FL 32899

Contracting Officer

Erik Whitehill: [erik.c.whitehill@nasa.gov](mailto:erik.c.whitehill@nasa.gov)

Phone: 321-867-5504