



Armstrong Flight Research Center Microgravity Flight Services

Industry Day

December 9, 2014

Acquisition Strategy



Acquisition Background

Why Civil Aircraft Ops instead of Public Aircraft Ops?

- NASA wishes to divest of internal capability (assets and workforce) for MFS including the C-9 asset.

- Federal Acquisition Policy (FAR Part 12.102) states Agencies shall:
 - (a) Conduct market research to determine whether commercial items or nondevelopmental items are available that could meet the agency's requirements;
 - (b) Acquire commercial items or nondevelopmental items when they are available to meet the needs of the agency; and
 - (c) Require prime contractors and subcontractors at all tiers to incorporate, to the maximum extent practicable, commercial items or nondevelopmental items as components of items supplied to the agency.

Purpose of RFI

- This RFI will assess the feasibility of obtaining microgravity flight services on a purely commercial basis:
 - That meet NASA requirements as stated in the proposed Performance Work Statement (PWS), and
 - To understand how those services would be priced.

- If RFI assessment is positive, it may result in an RFP for an Indefinite Delivery Indefinite Quantity (IDIQ) Firm Fixed Price (FFP) Contract

- Tentative timeline:
 - RFI responses due January 19, 2015
 - Anticipated RFP release in late February 2015 with response due in April, 2015
 - Award in July 2015
 - Operationally ready in August 2015

RFI Deliverables

A Capability Statement is required from respondents:

- 1) Describe your capabilities and performance history for the following:
 - Capabilities with respect to Performance Work Statement (PWS)
 - Describe the platform environment you can provide for experiments, including the number of independent experiment packages, the types and sources of power, environmental conditions and ability to vary environments, and ability to accommodate human participants
 - Describe any restrictions on payload contents (mass, volume, battery types, gasses, temperatures, etc.)
 - Describe typical flight profiles for microgravity conditions, including zero-g parabola and hyper gravity maneuvers up to 1.8 gravities

- 2) Provide a Rough Order of Magnitude (ROM) for annual contract cost using the Cost Metric and Proposed Metric Spreadsheets that were included as part of the RFI. Please use the basic assumptions provided for the ROM and provide any formulas used to calculate costs.

RFI Deliverables

A Capability Statement is required from respondents:

3) Describe how you would manage a microgravity program including aircraft maintenance and operation; experimenter support; and payload integration.

The description shall include the following:

- Aircraft make and model that would be used to provide services
- Engineering capabilities for integrating custom payload types
- Airworthiness and flight safety processes, and how it is intended to operate within FAA approval guidelines as an FAA-certified aircraft
- Location of airfield and microgravity flight operations and your access to aircraft ground and support equipment and fuel
- Describe capabilities for payload integration, including how you assess the airworthiness of payloads and how you isolate payloads from aircraft systems
- Describe ground facilities for experimenter preflight preparation and postflight maintenance of experiments
- Describe capabilities to provide special systems (lighting, intercom, precision gravity monitoring, etc.)

RFI Deliverables

A Capability Statement is required from respondents:

- 4) Describe the barriers to utilizing your aircraft to provide microgravity flight services as an FAA certificated aircraft. Include how you would eliminate or mitigate any potentially identified barriers .
- 5) Describe how you plan to certify airworthiness and gain approval for any necessary modifications to the aircraft type certificate.
- 6) Describe what you require from NASA, if anything, to provide microgravity flight services while operating your aircraft as an FAA certificated aircraft.
- 7) Provide specific comments on the technical and operational requirements and the ease or difficulty you would have in meeting them.

RFI Deliverables

A Capability Statement is required from respondents:

8) Provide any other recommendations or concepts of operation you have for providing Microgravity Flight Services to support the NASA mission.

9) NASA is interested in innovative approaches to achieving this mission, including use of smaller aircraft types (biz jet class rather than transport class), multiple aircraft types, or other innovative approaches including a multiple-award contract for achieving the full range of requirements from more than one vendor. Please provide any constructive suggestions toward this end. Explain the advantages of your suggested approach and potential barriers to executing the controlled gravity mission that you believe would be resolved by your approach.

RFI Deliverables

Rough Order of Magnitude Cost Estimate:

- › Proposed NASA Performance Payment Metric
 - Rewards successful accomplishment of microgravity maneuvers
 - Compensates for each flight day
 - Compensates for government delays or cancellations, flights with less than the minimum microgravity maneuvers, two-flight days, and aircraft access on the weekends
- › Respondent Costing Metric
 - Provides assumptions for a typical flight week
 - Provides assumptions for number and types of profiles (see PWS Section 3.1) flown in one flight, and success rate
 - Assumes that profile costs will vary with difficulty
 - Requests annual costs to NASA in accordance with assumptions, and other incidental costs

