

# ACITS-3 FORM

## PART 1 - TASK ORDER INFORMATION

<b>Contract No:</b> NNA13AB88C		<b>Contract Title:</b> ACITS 3 NASA AMES		
<b>Date:</b> 8/17/2017		<b>Task Title:</b> RASCAL Flight Research and Development		
<b>Task Order No.:</b> Y45	<b>Task Mod No.:</b> Original	<b>Service Request No.:</b>	<b>Customer Code:</b> NASA/Ames Research Center	<b>SOW Reference:</b> C.3.1.5
<b>Order Type:</b> Cost Plus Fixed Fee		<b>Funding Level:</b> Task Level Funding		
<b>Task Requester Email:</b> (b) (6)		<b>Name:</b> Mohammadreza H. Mansur		<b>Phone:</b> (b) (6)
<b>Financial Manager Email:</b> (b) (6)		<b>Name:</b> Charles Ingalls		<b>Phone:</b> (b) (6)
<b>Computer Security Officer Email:</b> (b) (6)		<b>Name:</b> Charles Ingalls		<b>Phone:</b> (b) (6)
<b>Task previously covered by another contract other than predecessor to incumbent? (If YES, provide in SOW)</b>				<b>YES</b>
<b>Does the task require access to government databases? (If YES, indicate in SOW)</b>				<b>NO</b>
<b>SECTION 508, ELECTRONIC AND INFORMATION TECHNOLOGY ACCESSIBILITY COMPLIANCE (EITAC)</b>				
<b>Does the task include EIT items? (Please review the EITAC documentation)</b>				<b>NO</b>
<p>Upon receipt of this task order request, the contractor shall review the task requirement(s) and inform the Government, as part of its task order/modification response, any discrepancies between standards initially cited and those the contractor proposes to deliver to the Government. Examples of discrepancies include ODCs for which some other standard might be or become applicable and, as a result, require citation in the task order, as well as any cited standards that the contractor believes is not applicable (provide rationale). Note: If, by mistake, the task, including and ODC of the task, should not meet an applicable standard not cited by the requester, it is the requester, not the contractor who is a fault; and the requester must find a way (e.g., by modifying the task request) to bring the task into compliance. In such cases the requester shall complete the required agency forms (or equivalent) before the task order/modification is approved.</p>				
<b>GOVERNMENT FURNISHED EQUIPMENT (GFE)</b>				
<p>Government will provide all appropriate equipment and software necessary for the performance of this task unless otherwise noted in this task order. The contractor, in accordance with the contract can acquire equipment not presently available as GFE. Equipment identified as task unique will be expensed to the task in accordance with ASRC Federal Accounting policy, and will be defined as GFE in the Government inventory. All other equipment purchases will be depreciated and become contractor property. The contractor shall follow agency rules regarding assignment of government owned equipment and other government supplied equipment. The contractor shall provide information, such as, Property Assignments, Property Location and Unused Equipment, upon request.</p>				
<b>AFFIRMATIVE PROCUREMENT (See <a href="http://www.epa.gov/cpg/products.htm">http://www.epa.gov/cpg/products.htm</a>)</b>				
<p>The item(s) being purchased are NOT on any of the EPA's Comprehensive Procurement Guideline lists. - AND -</p> <p>They meet the minimum recycled/recovered content.</p>				
<b>COTR SIGNATURE:</b> Kirsten Nagel (8/28/2017)			<b>CO SIGNATURE:</b> Anjennette Contreras-Rodriguez (8/29/2017)	

## ACITS-3 FORM (Continued)

<b>PART 2 - TASK ORDER PLAN PROPOSAL</b>				
<b>Contract No:</b> NNA13AB88C		<b>Contract Title:</b> ACITS 3 NASA AMES		
<b>Date:</b> 8/17/2017		<b>Task Title:</b> RASCAL Flight Research and Development		
<b>Task Order No.:</b> Y45	<b>Task Mod No.:</b> Original	<b>Service Request No.:</b>	<b>Customer Code:</b> NASA/Ames Research Center	<b>SOW Reference:</b> C.3.1.5
<b>Order Type:</b> Cost Plus Fixed Fee		<b>Funding Level:</b> Task Level Funding		
Categories	Current Request	Prior Cumulative Estimate Without Current Request	Total Cumulative Task Estimate	
Onsite Hours	(b) (4)			
Offsite Hours				
Total Hours				
Onsite Labor				
Offsite Labor				
Subtotal ARTS Labor				
Teammate/Subcontractor Labor				
Subtotal Teammate/Sub Labor				
Total Labor				
Materials				
Equipment				
Travel				
Training				
Miscellaneous				
Other Direct Costs Subtotal				
Total Cost				
PMO				
Fee				
Total Price				

## ACITS-3 FORM (Continued)

### PART 3 - APPROVAL SUMMARY

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<b>Order Type:</b> Cost Plus Fixed Fee		<b>Funding Level:</b> Task Level Funding		
<b>Approved By</b>	<b>Name</b>	<b>Date</b>	<b>Email</b>	<b>Phone</b>
1. COTR Mansur	Kirsten Nagel	8/28/2017	(b) (6)	(b) (6)
2. CO Mansur	Anjennette Contreras-Rodriguez	8/29/2017		

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**Task Background:**

The purpose of this task is the design, development, integration, and testing of research and data acquisition systems for rotorcraft flight research and flight test evaluation. This task shall support the flight research and flight test efforts of scientists and engineers with the U.S. Army Aviation Development Directorate at Moffett Field, CA, and at Fort Eustis, VA. The aircraft is now located at Fort Eustis, VA, and task will require travelling for onsite support. This task shall also support the development of a Replacement Research Flight Control Computer Assembly (RRFCCA) for the (b) (7)(E). The later shall include four weeks support by a subcontractor, two of which shall be on-site at Boeing Philadelphia.

**Statement of Work - Requirements, part 1:**

The contractor shall analyze researcher requirements and apply software, hardware, and systems engineering processes for the design, development, integration, testing, and configuration control of software for real-time, embedded, multi-chassis, digital avionics systems for use onboard the (b) (7)(E) and in an avionics development facility (DF):

1. The contractor shall perform design, development, integration, and configuration management of software and hardware for the following types of systems:

- 1.1 Flight control
- 1.2 Active Inceptor System (AIS)
- 1.3 Servoactuators
- 1.4 Navigation (INU, EGI)
- 1.5 Guidance (including autonomous flight)
- 1.6 Cockpit displays
- 1.7 Data acquisition
- 1.8 Telemetry
- 1.9 Post-flight data processing
- 1.10 A state-of-the-art Replacement Research Flight Control Computer Assembly (RRFCCA) and associated hardware, software, test bench, and simulation facility is being developed under contract and will be installed on the aircraft and associated DF at Fort Eustis, VA, by late 2020. Though the system will be built under contract and not in-house (b) (7)(E) personnel will be involved in the development and integration of this RRFCCA from inception to acceptance flight testing. The development will be carried out while the aircraft continues to perform research flight activities. Research activity will only pause during the aircraft installation of the new system.

2. The contractor shall have a detailed working knowledge of automated code generation tools, in particular the MathWorks® Simulink® Embedded Coder. Code generation tools will be used primarily for flight control software development but will be extended to navigation

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and guidance software.

3. The contractor shall have an extensive background in rotary-wing, and desirably, in fixed-wing flight control system analysis, design, and synthesis.

4. The contractor shall have a firm grasp of fly-by-wire electrohydraulic servoactuator and hydraulic systems that constitute a key element of the aircraft research flight control system.

5. The contractor shall have a firm grasp of real-time operating system concepts, e.g., taxonomy of real-time system architectures, real-time synchronization protocols, and timing and analysis of periodic tasks. The contractor shall also be familiar with state-of-the art testing and debugging methodologies and techniques.

(b) (7)(E)

7. All staff members on the task are required to train and fly on the (b) (7)(E)

8. Hearing testing will be required for all staff members on the task who are exposed to excessive noise.

9. Flight physicals will be required for all staff members on the task who fly on the (b) (7)(E)

10. Eye exams will be required for all staff members on the task who will be working around laser devices.

11. Contractor shall arrange for four weeks of subcontractor support towards the development of a replacement RFCCA for the (b) (7)(E) including two weeks of onsite support at Boeing Philadelphia.

**Government Furnished Property:**

Government will provide all appropriate equipment and software necessary for the performance of this task unless otherwise noted in this task order. The contractor in accordance with the contract can acquire equipment not presently available as GFE. Equipment identified as task unique will be expensed to the task in accordance with ACITS3 accounting policy, and will be defined as GFE in the Government inventory. All other equipment purchases will be depreciated and be contractor property. The contractor shall follow NASA Ames rules regarding movement and assignment of government owned equipment and ODIN supplied equipment and provide information upon request for the following: Property Assignments, Property

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Location, and Unused Equipment.

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<b>Specific Deliverables and Deliverable Dates</b>				
<b>No.</b>	<b>Type of Deliverable</b>	<b>Description of Deliverable</b>		<b>Date Required</b>
1.	Performance	Application software (including utilities, scripts, modifications, etc.)		
2.	Performance	Test and evaluation software and data (including test scripts, results, etc.)		
3.	Performance	Operating procedures and checklists		
4.	Performance	Software description documents		
5.	Performance	Support Services		
6.	Performance	Monthly reports		
7.	Performance	Four weeks subcontractor support to Boeing Philadelphia in the development of replacement RFCCA for the (b) (7)(E) including two weeks onsite.		

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<b>Travel, Training, and Materials Requirements</b>				
<b>No.</b>	<b>Type of Requirement</b>	<b>Description</b>		<b>Date Required</b>
1.	Training	Mathworks training on MATLAB, Simulink, and Simulink Coder auto code generation for 1 person		
2.	Material	Flight Physical for 1 person in support of Rotorcraft Flight Research and Test Evaluation		
3.	Material	Hearing Test for 1 person in support of Rotorcraft Flight Research and Test Evaluation		
4.	Material	Eye Exam for 1 person in support of Rotorcraft Flight Research and Test Evaluation		
5.	Travel	2 Trips, 3 days each, to Boeing Philadelphia for 1 person to attend RRFCCA PDR meeting and RRFCCA Option 1 kick-off meeting		
6.	Travel	4 trips, 1 week each, to Fort Eustis, VA, for 1 person to support development and flight testing (b) (7)(E)		

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<b>Charge Points</b>				
<b>Charge Number</b>	<b>Description</b>			
001	Flight research systems engineering			

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**IT Security Requirements:**

- a. Are this task's activities covered under an organizational IT Security Plan?: YES
- b. Does this task support applications that have been designated as a "Special Management Attention" application?: NO

If yes, please describe:

- c. Is specialized security training required?: NO

If yes, specialized training requirements are described as follows:

- d. Is a security clearance needed for any personnel on this task? YES

If yes, what level of clearance is required?:

A Secret security clearance may be required for some work under this task.

- e. IT Security Deliverables associated with this task:

- IT Risk Assessment: NO
- IT Security Plan: NO
- IT Contingency Plan: NO
- IT Security Vulnerability Test Results: NO
- Results of Periodic IT Security Reviews: NO
- Other Documentation as Follows: Report of Status of IT Security Plan, Contingency Plan, and Risk Assessment of Critical Services: NO
- Other Documentation:

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**IT Security Requirements (Continued):**

- f. Periodic reviews of IT Security measures are necessary. What is the role of the contractor under this task in areas such as review of user accounts, account management, data backup and restoration, use of warning banner, use of encryption, vulnerability scanning, and security tools?

N/A

- g. In the event of an IT Security incident associated with systems and data under this Task, the Chief Information Security Official, the Security Operations Center (SOC), and the Task Requester are to be notified immediately by the contractor. In order to ensure full coordination, the following individuals also are to be notified:

Title	Name	Phone
System Owner (Responsible for the applicable IT Security Plan)	Mohammadreza H. Mansur	(b) (6)
Organization's Computer Security Official	Charles Ingalls	
Alternate System Owner		

### ACITS-3 FORM (Continued)

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**Are there any other IT Security requirements?:**

In the event of an IT Security Incident associated with systems and data under this Task, the Ames Chief Information Security Official, the Security Operations Center (SOC), and the Task Requester will be notified immediately by the contractor. In order to ensure full coordination, the following individuals will also be notified in the event of an IT Security Incident: