

# ACITS-3 FORM

## PART I – TASK ORDER INFORMATION

<b>Contract No:</b> NNA13AB88C		<b>Contract Title:</b> ACITS 3 NASA AMES		
<b>Date:</b> 8/27/2015		<b>Task Title:</b> Rotorcraft Signature and Simulation Software Tools Development and Support		
<b>Task Order No.:</b> Y26	<b>Task Mod No.:</b> Original	<b>Service Request No.:</b>	<b>Customer Code:</b> NASA/Ames	<b>SOW Reference:</b> C.3.1.4
<b>Task Requester Email:</b> (b) (6)		<b>Name:</b> Gerardo Nunez		<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> Roy Shishido		<b>Phone:</b> (b) (6)
		<b>Name:</b>		<b>Phone:</b>
		<b>Name:</b>		<b>Phone:</b>
<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>YES</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>		<b>CO SIGNATURE:</b>		

# ACITS-3 FORM (Continued)

## PART 2 - TASK ORDER PLAN PROPOSAL

<b>Contract No:</b> NNA13AB88C		<b>Contract Title:</b> ACITS 3 NASA AMES		
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<b>Task Order No.:</b> Y26	<b>Task Mod No.:</b> Original	<b>Service Request No.:</b>	<b>Customer Code:</b> NASA/Ames	<b>SOW Reference:</b> C.3.1.4
<b>Categories</b>	<b>Current Request</b>	<b>Prior Cumulative Estimate Without Current Request</b>		<b>Total Cumulative Task Estimate</b>
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				
<b>Contract No:</b> NNA13AB88C		<b>Contract Title:</b> ACITS 3 NASA AMES		
<b>Date:</b> 8/27/2015		<b>Task Title:</b> Rotorcraft Signature and Simulation Software Tools Development and Support		
<b>Task Order No.:</b> Y26		<b>Task Mod No.:</b> 0	<b>Service Request No.:</b>	<b>Customer Code:</b> NASA/Ames
				<b>SOW Reference:</b> C.3.1.4
<b>Approved By</b>	<b>Name</b>	<b>Date</b>	<b>Email</b>	<b>Phone</b>
1. COTR Nunez	Kirsten Nagel	9/14/2015	(b) (6)	(b) (6)
2. CO Nunez	Anjennette Contreras-Rodriguez	9/17/2015		

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<b># of P-1</b> Cost Plus Fixed Fee		<b>Funding Level:</b> Task Level Funding		
<b>Task Background:</b>  <p>The Concept Design &amp; Assessment Technical Area (CD&amp;A TA) designs vertical lift aircraft concepts with the goal of providing enhanced operational benefit to the warfighter. The survivability of these platforms in relevant operational scenarios is an important consideration of any future Army or Joint Service aircraft concept. (b) (7)(E)</p> <p>(b) (7)(E)</p> <p>Current high fidelity signatures prediction methodology relies on compute-intensive, first-principles techniques which fully capture the physics behind signatures phenomenology. These analytic methods serve the community well for fixed designs which will typically be characterized infrequently. However, there exists a need for tools which can be used within the aircraft design cycle to identify design shortcomings that can be remedied in subsequent design iterations. In this context, signature predictions that are 85%-90% accurate are deemed sufficient to identify needed design changes.</p>				

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<b>Task Order Description:</b>  The purpose of this task is to continue develop and improve software tools that will be used by the US Army Aeroflight Dynamics Directorate (AFDD), Concept Design and Analysis (CD&A) Tech Area in support of conceptual aircraft design and analysis. The tools will be used to generate signature data from CD&A developed aircraft models in support of Future Vertical Lift design activities and will also be used to post process results of constructive simulation.				

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**General Scope of Work:**

1. RF signatures: Develop methods for analyzing airframe blockage for user-defined sensor and antenna locations. Develop methods for easily adding a library of sensors and antennas onto aircraft OML geometries, and develop meshing techniques for including them in RF signature predictions. Build a database of existing radar absorbing materials to support anticipated future aircraft design studies. Build a database of frequency selective conducting materials, suitable for antenna and sensor coatings to support anticipated future aircraft design studies. Demonstrate the ability to apply a range of advanced radar absorbing to a candidate design and assess via mission effectiveness modeling.
  
2. IR Signatures: Leverage prior work in developing the IR Signature Model, to extend this 2-D model into a 3-D representation, enabling the ability to incorporate non-diffuse surface materials, directional materials, and improve solar glint fidelity. Develop a simplified 3-D exhaust flow field model to enable trade studies on various levels of engine IR suppression vs. turbine backpressure. Develop a simplified exhaust species radiation model to predict exhaust plume radiation. Incorporate existing decoy (flare) signal vs. time and trajectory to enable assessment of decoy effectiveness for a range of vehicle IR signatures.
  
- 3 EO Signatures: Assemble a database of sensor characteristics which are compatible with the existing IR Signature Model (field of view, minimum resolvable temp (MRT), minimum resolvable contrast (MRC), modulation transfer function (MTF), etc.) to enable rapid assessment of perception (no detection, detection, classification, identification) against a range of threat sensors as part of trade studies.
  
4. ATCOM Behaviors. Conduct experimentation of key behaviors to determine effects under various bounding conditions. There are a large number of behavior types available within ATCOM, many requiring certain predicates to function properly. As such, this is a much more complex task than verifying parameter functionality. This task will then prioritize behaviors to be studied, based on perceived need, into multiple tiers. Tier 1 behaviors will be studied in this task period. Results of this study will be updated in ADO's ATCOM documentation
  
5. Man-in-the-Loop (MITL) simulation:  
Support and develop methods/interface for linking the X-Plane man-in-the-loop (MITL) simulator system into the ATCOM constructive simulations, using Distributed Interactive Simulation (DIS) protocols. Initially verify terrain correlation between the two simulations by directly importing X-plane flight paths into ATCOM for check out, and then prescribing ATCOM flight paths in X-Plane via waypoint icons. Evaluate the ability of X-Plane to receive and display ATCOM generated data packets relating to threat engagements.

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<b>Personnel Skill Sets:</b>  Must have a experience developing and using RF/IR/EO signature tools Must have experience with ATCOM combat modeling Must have experience with FORTRAN				

### ACITS-3 FORM (Continued)

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<p><b>Government Furnished Property:</b></p> <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 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 ACES supplied equipment and provide information upon request for the following: Property Assignments, Property Location, and Unused Equipment.</p>				



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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	Demonstration of ATCOM assessment with updated signature tools		09/30/2015
2.	Performance	Demonstration of Updated signature tools on Conceptual level aircraft		7/30/2015

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<b>Travel, Training, and Materials Requirements</b>				
No.	Type of Requirement	Description	Date Required	
1.	Travel	Trip to Fort Rucker	8/31/2016	
2.	Travel	Trip to LaRC/JBLE	10/30/2015	
3.	Travel	Trip to JBLE	4/4/2016	

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<b>Work Breakdown Structure (WBS) Charge Points</b>				
<b>Charge Point</b>	<b>Title</b>			
001	Rotorcraft Signature and Simulation Software Tools Development and Support			

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**IT Security Requirements:**

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

- c. Is specialized security training required?: YES  
If yes, specialized training requirements are described as follows:  
U.S. Army Annual Information Assurance (IA) Awareness Training Other Army online IA training as directed

- d. Is a security clearance needed for any personnel on this task?: YES  
If yes, what level of clearance is required?:  
SECRET

- 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?

- 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)	Roy Shishido	(b) (6)
Organization's Computer Security Official	Roy Shishido	
Alternate System Owner		