

# ACITS-3 FORM

## PART 1 - TASK ORDER INFORMATION

<b>Contract No:</b> NNA13AB88C		<b>Contract Title:</b> ACITS 3 NASA AMES		
<b>Date:</b> 8/24/2017		<b>Task Title:</b> TH Aeronautics Simulation Research, Development, and Support		
<b>Task Order No.:</b> T43	<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> Subtask Level Funding		
<b>Task Requester Email:</b> (b) (6)		<b>Name:</b> Trent Thrush		<b>Phone:</b> (b) (6)
<b>Financial Manager Email:</b> (b) (6)		<b>Name:</b> Edith Peters		<b>Phone:</b> (b) (6)
<b>Computer Security Officer Email:</b> (b) (6)		<b>Name:</b> Jeffrey McCandless		<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 (9/5/2017)			<b>CO SIGNATURE:</b> Anjennette Contreras-Rodriguez (9/12/2017)	

## 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>Order Type:</b> Cost Plus Fixed Fee		<b>Funding Level:</b> Subtask 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>Approved By</b>	<b>Name</b>	<b>Date</b>	<b>Email</b>	<b>Phone</b>
1. COTR Thrush	Kirsten Nagel	9/5/2017	(b) (6)	(b) (6)
2. CO Thrush	Anjennette Contreras-Rodriguez	9/12/2017		

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

This task encompasses support for three aeronautical research projects:

- " Human Centered Systems Laboratory (HCSL) Support
- " Human Autonomy Teaming Laboratory
- " UAS Integration Support
- " Airspace Operations Laboratory (AOL) Support

**A. HUMAN CENTERED SYSTEMS LABORATORY SUPPORT**

This project supports NASA's Aeronautics Research Mission Directorate (ARMD) programs and other NASA or FAA programs. Support will include the planning and conducting of simulation studies, the analysis and summarization of the data collected during the studies and the preparation of presentation materials to describe the results of the studies. Also included in the task are the design, development and support of hardware systems and computer programs required to conduct said studies, and to provide aeronautical flight simulation expertise and pilot domain expertise, and, Airport Terminal Area Simulator (ATAS) Surface Operations and Departure Capability using the new Charlotte International Airport database. Continued enhancements of the ATAS facility to enable departure capabilities to support future the NASA ARMD ATD-2 Project concept evaluations will be required. This work includes integration of the existing software that drives the Flight Management System (FMS) to support LNAV/VNAV departures and Standard Instrument Departure (SID) procedures.

Specific requirements include:

1. Software Support includes: all phases of software development, maintenance of existing baseline (legacy or extant) software, integration developed/modified software, user support, and documentation. Included is enhancement of out-the-window graphics databases, Route Traffic Manager (RTM) simulation software, upgrade of FMS software.
2. Hardware support includes: design, installation and integration of audio and video equipment, custom fabrication of research hardware, and support for any other hardware associated with the above laboratories (HUD, joysticks, etc.) ATC displays, VDRs, eye tracking system, etc. Hardware engineering support includes design, integration and testing for the any upgrades of the ATAS flight simulator.
3. Experiment support includes: assistance with pre-experiment specification, scenario development, domain expertise (pilot) for scenario evaluation, and support during actual experimental runs (as required by experimental schedule).
4. Data Analysis support includes: pre-experiment consultation, evaluation of data collection methods, verification of data collection methodology by means of pre-experiment sampling, data reduction, data analysis, and assistance with technical problems (as required by experimental schedule).

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#### B. HUMAN AUTONOMY TEAMING (HAT) LABORATORY SUPPORT

This project supports the Human Autonomy Teaming Laboratory under the Human Systems Integration Division, Code TH, at NASA Ames Research Center.

Provide support for the development of:

1. Human Autonomy Teaming experiments
2. Air-Ground simulation experiments
3. Statistical analysis of data collected from the above experiments
4. Support re-build of the HAT Laboratory's 777 simulator
5. Develop enhanced SPO ground stations to support controlling multiple aircraft

#### C. UAS INTEGRATION SUPPORT

This project will provide support for the UAS Integration into the NAS. Specific requirements include:

1. Support and development of the Vigilant Spirit Ground Control Station
2. Integration of VSCS with LVC
3. Support of simulations and flight tests

**Statement of Work - Requirements, part 2:**

#### D. AIRSPACE OPERATIONS LABORATORY SUPPORT

This project will provide support for the Airspace Operations Laboratory (AOL) under the Human Systems Integration Division, Code TH, at NASA Ames Research Center.

Specific requirements include: provide software development, integration, enhancement, and testing, hardware integration, data collection and database management for the development of:

- " Airspace Operations Laboratory (AOL)
- " Enhancements to the Multi-Aircraft Control Simulator (MACS)
- " Air-Ground simulation experiments
- " Statistical analysis of data collected from the above experiments
- " Aircraft Modeling in MACS
- " Route construction/analysis and fast-time aircraft simulation
- " Systems engineering (support of servers, software developer tools, libraries, applications, systems builds and configurations)
- " Develop and provide enhancements to the MACS 4-D trajectory planner and guidance system
- " Provide general support for AOL experiments as needed
- " STARS integration with Ames simulation software
- " Provide pilot domain expertise
- " Provide enhancements to the Aeronautical Data link and Radar Simulator (ADRS)
- " Develop and provide enhancements for UAS Traffic Management (UTM) systems and simulation capabilities

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<p>" Develop UTM user interface systems for desktop applications and mobile devices</p> <p>" Provide one or more ATC subject matter experts to provide support for the development and testing of IDM (Integrated Demand Management) concepts and technologies. This will include HITL studies, and travel to different ATC facilities. Requires ATC domain expertise.</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	HCSL: Provide ongoing laboratory support for hardware and software facility will be available and equipped for 90% of the time that research studies are scheduled		8/31/2018
2.	Performance	HCSL: Provide new development, modification, and support of Generic Data Reduction Program to meet requirements		8/31/2018
3.	Performance	HCSL: Integrate new hardware into simulation (examples: video, eye tracker)		8/31/2018
4.	Performance	AOL: Provide ongoing software support to maintain the AOL laboratory facility will be available and equipped for 90% of the time that research studies are scheduled		8/31/2018
5.	Performance	AOL: Delivery of technical enhancements and testing of MACS software to meet requirements as set by the Task Requester		8/31/2018
6.	Performance	AOL: Delivery of technical enhancements and testing of UTM software to meet requirements as set by the Task Requester		8/31/2018
7.	Performance	HAT: Develop and deliver enhancements to VSCS as received by the Task Requester		8/31/2018
8.	Performance	HAT: Provide ongoing software support of the ground dispatch station Air-Ground simulation experiments as set by the Task Requester		8/31/2018

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<b>Travel, Training, and Materials Requirements</b>				
No.	Type of Requirement	Description	Date Required	
1.	Material	SSD HP external drives in support of HCSL (2)	8/31/2018	
2.	Material	GL Studio license renewal in support of HCSL	8/31/2018	
3.	Material	HP HW maintenance renewal in support of HCSL	8/31/2018	
4.	Material	Hardware clock synchronization using satellites in support of AOL (1)	8/31/2018	
5.	Material	Servers in support of AOL virtual infrastructure (2)	8/31/2018	
6.	Material	MS Surface Tablets in support of AOL (40)	8/31/2018	
7.	Material	Quintron voice communication server upgrade in support of AOL	8/31/2018	
8.	Material	Vcenter licenses in support of AOL	8/31/2018	
9.	Material	SSD in support of AOL (4)	8/31/2018	
10.	Material	Computer systems in support of AOL (15)	8/31/2018	
11.	Material	Ultra short throw 4K projectors, camera, hardware in support of AOL (4)	8/31/2018	
12.	Material	VR headset in support of AOL (2)	8/31/2018	
13.	Material	Aerial vehicle (UAV) HW and SW development platform in support of AOL	8/31/2018	
14.	Material	Unity 3D in support of AOL	8/31/2018	
15.	Material	Presagis Creator maintenance license in support of AOL	8/31/2018	
16.	Material	Photo Modeler UAS in support of AOL	8/31/2018	
17.	Material	Visual Studio License renewal in support of AOL	8/31/2018	
18.	Material	Network switches for air-gapped network in support of AOL	8/31/2018	
19.	Training	Java class in San Francisco in support of AOL (3 people/5 days)	8/31/2018	
20.	Training	PMP classes for 1 person in support of AOL (2)	8/31/2018	
21.	Training	CISP training for 1 person in support of AOL	8/31/2018	
22.	Training	SPRING training in San Francisco in support of AOL (1 person/ 5days)	8/31/2018	
23.	Training	Cinemassive training in Atlanta, GA in support of AOL (2 people/5 days)	8/31/2018	
24.	Travel	Trip to AZ & return to Ames in support of AOL (1 person/5 days, 3 trips)	8/31/2018	
25.	Travel	Trip to Reno, NV in support of UTM Project testing/demo (1 person/3 days, 2 trips)	8/31/2018	
26.	Travel	Trip to Atlanta, GA for Cinemassive training in support of AOL (2 people/5 days)	8/31/2018	



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<b>Charge Points</b>				
<b>Charge Number</b>	<b>Description</b>			
001	Human Centered Systems Laboratory Support (Foyle)			
002	Flight Deck Display Research Laboratory Support (Lachter)			
003	UAS Integration (Shively)			
004	Airspace Operations Laboratory Support (TBD/Lee/N Smith)			

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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? NO

If yes, what level of clearance is required?:

**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?**

All IT security measures for this task are provided by the TH Division Systems Group Task.

- 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)	Trent Thrush	(b) (6)
Organization's Computer Security Official	Jeffrey McCandless	(b) (6)
Alternate System Owner		