

**NONREIMBURSABLE INTERAGENCY AGREEMENT  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
AMES RESEARCH CENTER  
AND  
UNITED STATES FOREST SERVICE  
FOR  
SCALABLE TRAFFIC MANAGEMENT FOR EMERGENCY RESPONSE  
OPERATIONS**

**ARTICLE 1. AUTHORITY AND PARTIES**

The National Aeronautics and Space Administration Ames Research Center, located at Moffett Field, CA 94035 (hereinafter referred to as "NASA" or "NASA ARC") enters into this Interagency Agreement (hereinafter referred to as "IAA") in accordance with 51 U.S.C. § 20113(e). United States Forest Service, located at 3833 S. Development Avenue, Boise, ID 83705-5354 (hereinafter referred to as "USFS"), enters into this IAA in accordance with the Economy Act, 31 U.S.C. § 1535. NASA and USFS may be individually referred to as a "Party" and collectively referred to as the "Parties."

**ARTICLE 2. PURPOSE**

The purpose of this collaboration is to conduct research, development, testing, and evaluation of an Unmanned Aircraft Systems (UAS) Traffic Management (UTM) system for public safety and disaster response under the Scalable Traffic Management for Emergency Response Operations (STEReO) project.

In order to demonstrate STEReO concepts that are being developed by NASA and better understand requirements for this future system, Partner will work with NASA to identify Partner-organized aerial firefighting exercises and operations that can serve as testing and demonstration environments for NASA flights.

The Parties intend to collaborate throughout the term of this Agreement with supporting activities associated with the preparation for such aerial demonstration(s). Partner would provide NASA with the opportunity to test STEReO components through participation in Partner-organized aerial firefighting demonstration(s) or exercises. The flight demonstrations are designed to generate data to verify STEReO requirements and evaluating the performance of the STEReO system. (Such data hereinafter referred to as "STEReO Data"). Based on STEReO Data and other sources of information, it is NASA's goal to leverage new technologies that support disaster response efforts.

**ARTICLE 3. RESPONSIBILITIES**

A. NASA ARC will use reasonable efforts to:

- (1) Provide access, including any necessary NASA IT prerequisites or security requirements, such as an Interconnect Security Agreement (ISA), to a prototype software system via a secured Internet connection;
- (2) To the extent needed, NASA may assist Partner with its interface and function with STEReO systems prior to any simulation, test, or demonstration;
- (3) Determine if Partner is required to provide software for interface with STEReO's UAS Service Supplier (USS), supplemental data services, and data collection processes/systems;
- (4) Organize appropriate simulations, tests and demonstrations of STEReO components (e.g. assessments, tabletop exercises, use cases), based on USFS requirements and input, that may involve Partner-owned/operated vehicles, including fixed-wing, rotorcraft, and unmanned vehicles (excluding Partner-organized flight demonstrations);
- (5) Provide and operate NASA-owned small (sUAS) vehicles during Partner-organized flight demonstrations or exercises;
- (6) Provide information, as necessary, for Partner to participate (e.g. provide observations, assessments, and design input) in a given STEReO simulation, test, or demonstration;
- (7) Collect and utilize STEReO Data from simulations, tests, and demonstrations;
- (8) Ensure that participating NASA operators adhere to procedural deconfliction measures supplied by the firefighting exercise/operation controlling agency to ensure geographic separation between UAS and manned aircraft during NASA-managed UAS flight operations under support of this Agreement;
- (9) Develop a Mishap Preparedness and Contingency Plan (MPCP) prior to any operations under this Agreement; and lead any investigation and safety review (in accordance with NPR 8621, 8715, and 7900) in the case of an incident or mishap involving NASA UAS;
- (10) Conduct Mission Readiness Reviews and conduct safety and assurance analysis during NASA-managed flight operations in support of this Agreement using NASA-owned UAS; NASA may also provide any services that are needed to meet NASA or Federal Aviation Administration (FAA) rules and regulations, including, but not limited to:
  - i. Review of airworthiness criteria required for safe UAS operations;
  - ii. Review of systems to be tested and verifying operational criteria;
  - iii. Review of the approved COA, files, updates, reports, or other required documentation;
  - iv. Perform safety reviews appropriate for UAS operations and all associated systems for flight testing with specific vehicles at specific test sites; and
  - v. Provide for range safety personnel and range safety officers (RSO) for oversight during NASA-managed UAS flight operations, testing, or demonstrations, as set forth in the requirements of NPR 8715.5B and NASA-STD 8719.25.

B. USFS will use reasonable efforts to:

- (1) Cooperate with NASA and follow NASA IT prerequisites and security requirements, such as an Interconnect Security Agreement (ISA), for obtaining access to NASA STEReO systems;
- (2) Protect credentials and access to NASA STEReO systems that may be provided by NASA in support of this Agreement in accordance with NASA regulations and policies;
- (3) Cooperate (e.g. provide observations, assessments, and design input) with NASA to organize simulations, tests and demonstrations of STEReO components;
- (4) Provide access to a firefighting exercise/operations where Partner serves as a firefighting exercise/operation controlling agency; providing necessary oversights and procedural deconfliction measures to ensure geographic separation between NASA's UAS and Partner's aircraft in support of this Agreement;
- (5) To the extent that the Parties engage in flight operations using NASA-owned UAS, or otherwise support NASA flight operations, Partner will use reasonable efforts to:
  - a. Exercise and maintain control over the flight operations exclusive of the UAS test area, to include ensuring procedural deconfliction between Partner aircraft and NASA UAS;
  - b. Cooperate with and support mission readiness reviews, conduct safety and assurance analyses in accordance with NPR 7900.3D, as well as local policies and procedures for flight operations;
  - c. In the event of an unplanned/unexpected UAS departure from the UAS test area, comply with requirements and direction from NASA range safety personnel and range safety officers (RSO) for oversight as set forth in the requirements of NPR 8715.5B and NASA-STD 8719.25;
  - d. Support NASA and comply with a Mishap Preparedness and Contingency Plan (MPCP) prior to any operations under this Agreement;
  - e. Comply and assist with mishap and close call investigation requirements, as described in Article 22 and in accordance with NPR 8621, 8715 and 7900;
  - f. Provide a Cooperator Approval Letter for NASA UAS and flight crews participating in flight activities involving USFS aircraft and flight crews;
- (6) Participate, collect, and provide STEReO Data that results from simulations, testing and demonstrations for STEReO, as NASA designates. Data collected by UAS partners generally includes performance of their UAS; interactions with the UAS Service Supplier (USS); command, control, and navigation data; and pilot operations;
- (7) Provide NASA personnel supporting this Agreement information and access, with any necessary safety precautions prior to and during access, to wildland fire incidents within the United States for ground-based observations.

ARTICLE 4. SCHEDULE AND MILESTONES

The planned major milestones for the activities defined in the "Responsibilities" Article are as follows:

<b>Milestone</b>	<b>Estimated Completion Date</b>
Initial field test of prototype systems at training exercise (Joint)	Three months after execution of agreement
System test at training exercise (Joint)	Fifteen months after execution of agreement
Wildfire flight tests and demonstration (Joint)	Twenty-one months after execution of agreement.
System test at training exercise (Joint)	Twenty-seven months after execution of agreement
Wildfire flight tests and demonstration (Joint)	Thirty-three months after execution of agreement
System test at training exercise (Joint)	Thirty-nine months after execution of agreement
Wildfire flight tests and demonstrations (Joint)	Forty-five months after execution of agreement
System test at training exercise (Joint)	Fifty-one months after execution of agreement
Closeout report (NASA)	Sixty months after execution of agreement

ARTICLE 5. FINANCIAL OBLIGATIONS

There will be no transfer of funds between the Parties under this Agreement and each Party will fund its own participation. All activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. § 1341).

ARTICLE 6. PRIORITY OF USE

Any schedule or milestone in this IAA is estimated based upon the Parties' current understanding of the projected availability of its respective goods, services, facilities, or equipment. In the event that either Party's projected availability changes, NASA or USFS, respectively, shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's and USFS's

use of its own goods, services, facilities, or equipment shall have priority over the use planned in this IAA.

#### ARTICLE 7. LIABILITY AND RISK OF LOSS

Each Party agrees to assume liability for its own risks arising from or related to activities conducted under this IAA.

#### ARTICLE 8. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

NASA and USFS agree that the information and data exchanged in furtherance of the activities under this IAA will be exchanged without use and disclosure restrictions unless required by national security regulations (e.g., classified information) or as otherwise provided in this IAA or agreed to by NASA and other Federal Agency for specifically identified information or data (e.g., information or data specifically marked with a restrictive notice).

#### ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS - HANDLING OF DATA

A. In the performance of this Agreement, NASA or USFS (as "Disclosing Party") may provide the other Party (as "Receiving Party") with:

1. data of third parties that the Disclosing Party has agreed to handle under protective arrangements or is required to protect under the Trade Secrets Act (18 U.S.C. § 1905) ("Third Party Proprietary Data"), or
2. Government data, including software, the use and dissemination of which, the Disclosing Party intends to control ("Controlled Government Data").

B. All Third Party Proprietary Data and Controlled Government Data provided by Disclosing Party to Receiving Party shall be marked by Disclosing Party with a restrictive notice and protected by Receiving Party in accordance with this Article.

C. Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data.

1. Third Party Proprietary Data:

The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate document.

2. Controlled Government Data:

The Disclosing Party's Controlled Government Data, if any, will be identified in a separate document.

3. NASA software and related Data will be provided to Partner under a separate Software Usage Agreement (SUA). USFS shall use and protect the related data in accordance with this Article:

None.

D. For Data with a restrictive notice and Data identified in this Agreement or an accompanying funding document, Receiving Party shall:

1. Use, disclose, or reproduce the Data only as necessary under this Agreement;
2. Safeguard the Data from unauthorized use and disclosure;
3. Allow access to the Data only to its employees and any Related Entity requiring access under this Agreement;
4. Except as otherwise indicated in D.3., preclude disclosure outside Receiving Party's organization;
5. Notify its employees with access about their obligations under this Article and ensure their compliance, and notify any Related Entity with access about their obligations under this Article; and
6. Dispose of the Data as Disclosing Party directs.

E. If the Parties exchange Data having a notice deemed ambiguous or unauthorized by the receiving Party, it should tell the providing Party. If the notice indicates a restriction, the receiving Party must protect the Data under this Article unless otherwise directed in writing by the providing Party.

F. Notwithstanding any restrictions provided in this Article, the Parties are not restricted in the use, disclosure, or reproduction of Data provided under this Agreement that is:

1. known or available from other sources without restriction;
2. known, possessed, or developed independently, and without reference to the Proprietary Data;
3. made available by the owners to others without restriction; or
4. required by law or court order to be disclosed.

If a Party believes that any exceptions apply, it shall notify the other Party before any unrestricted use, disclosure, or reproduction of the Data.

#### ARTICLE 10. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS

Unless otherwise agreed upon by NASA and USFS, custody and administration of inventions made (conceived or first actually reduced to practice) under this IAA will remain with the respective inventing Party. In the event an invention is made jointly by employees of the Parties (including by employees of an Party's contractors or subcontractors for which the U.S. Government has ownership), the Parties will consult and agree as to future actions toward establishment of patent protection for the invention.

ARTICLE 11. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

NASA or USFS may, consistent with Federal law and this Agreement, release general information regarding its own participation in this IAA as desired. Insofar as participation of the other Party in this IAA is included in a public release, NASA and USFS will seek to consult with each other prior to any such release, consistent with the Parties' respective policies.

Pursuant to Section 841(d) of the NASA Transition Authorization Act of 2017, Public Law 115-10 (the "NTAA"), NASA is obligated to publicly disclose copies of all agreements conducted pursuant to NASA's 51 U.S.C. §20113(e) authority in a searchable format on the NASA website within 60 days after the agreement is signed by the Parties. The Parties acknowledge that, if this IAA is entered into pursuant to NASA's 51 U.S.C. §20113(e) authority, this IAA will be disclosed, without redaction, in accordance with the NTAA.

ARTICLE 12. TERM OF AGREEMENT

This IAA becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, or five years from the effective date, whichever comes first.

ARTICLE 13. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Agreement by providing thirty (30) calendar days written notice to the other Party.

ARTICLE 14. CONTINUING OBLIGATIONS

The rights and obligations of the Parties that, by their nature, would continue beyond the expiration or termination of this Agreement, e.g., "Liability and Risk of Loss" and "Intellectual Property Rights" and related clauses shall survive such expiration or termination of this Agreement.

ARTICLE 15. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Agreement.

Management Points of Contact

NASA Ames Research Center  
Matt Holtrust  
Agreement Manager

United States Forest Service  
Sarah Russell  
Agreements Specialist



Mail Stop: 223-3  
Moffett Field, CA 94035  
Phone: (650) 604-4069  
[matthew.j.holtrust@nasa.gov](mailto:matthew.j.holtrust@nasa.gov)

3833 S. Development Road  
Boise, ID 83705  
Phone: (208) 387-5641  
[sarah.russell@usda.gov](mailto:sarah.russell@usda.gov)

Technical Points of Contact

NASA Ames Research Center  
Joey Mercer  
Research Engineer  
Mail Stop: 262-4  
Moffett Field, CA 94035  
Phone: (650) 604-0017  
[joey.mercer@nasa.gov](mailto:joey.mercer@nasa.gov)

United States Forest Service  
Marva Wiley  
Regional Fuels Program Coordinator  
3833 S. Development Road  
Boise, ID 83705  
Phone: (707) 562-8981  
[marva.wiley@usda.gov](mailto:marva.wiley@usda.gov)

ARTICLE 16. DISPUTE RESOLUTION

All disputes concerning questions of fact or law arising under this IAA shall be referred by the claimant in writing to the appropriate person identified in this IAA as the "Points of Contact." The persons identified as the "Points of Contact" for NASA and USFS will consult and attempt to resolve all issues arising from the implementation of this IAA. If they are unable to come to agreement on any issue, the dispute will be referred to the signatories to this IAA, or their designees, for joint resolution after the Parties have separately documented in writing clear reasons for the dispute. As applicable, disputes will be resolved pursuant to The Department of the Treasury's Intragovernmental Transaction Guide (Treasury Financial Manual, Vol. 1, Chapter 2, Part 4700, Appendix 10 (hereinafter, the "Intragovernmental Transaction Guide")).

ARTICLE 17. INVESTIGATIONS OF MISHAPS AND CLOSE CALLS

In the case of a close call, mishap or mission failure, the Parties agree to provide assistance to each other in the conduct of any investigation. For all NASA mishaps or close calls, Partner agrees to comply with NPR 8621.1, "NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping" and applicable NASA Ames safety policies available from NASA's Point of Contact.

ARTICLE 18. MODIFICATIONS

Any modification to this IAA shall be executed, in writing, and signed by an authorized representative of NASA and the USFS.



ARTICLE 19. APPLICABLE LAW

U.S. Federal law governs this IAA for all purposes, including, but not limited to, determining the validity of the IAA, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

ARTICLE 20. LOAN OF GOVERNMENT PROPERTY

The parties shall enter into a NASA Form 893, Loan of NASA Equipment, for NASA equipment loaned to Partner.

ARTICLE 21. SIGNATORY AUTHORITY

Approved and authorized on behalf of each Party by:

**NATIONAL AERONAUTICS AND  
SPACE ADMINISTRATION  
AMES RESEARCH CENTER**

**UNITED STATES FOREST  
SERVICE**

BY: \_\_\_\_\_  
Dr. Rupak Biswas  
Director of Exploration Technology

**RHONDA**  
BY: **TORONTO** \_\_\_\_\_  
Rhonda Toronto  
Assistant Director, CDI

Digitally signed by  
RHONDA TORONTO  
Date: 2021.04.27  
12:22:38 -06'00'

DATE: \_\_\_\_\_

DATE: 4/27/21

This agreement (21-IA-11132543-050) is reviewed and approved for format and authority.

**SARAH**  
**RUSSELL**  
Sarah Russell, Agreements Specialist  
U.S. Forest Service

Digitally signed by  
SARAH RUSSELL  
Date: 2021.04.27  
11:21:18 -06'00'