

ANNEX  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND  
CREARE LLC  
UNDER SPACE ACT UMBRELLA AGREEMENT  
NO. 39597, (ANNEX NUMBER 1).

ARTICLE 1. PURPOSE

This Annex shall be for the purpose of providing "Fire Hazards in Oxygen Systems" training and oxygen system design support, to include Oxygen Compatibility Assessments (OCAs) in accordance with NASA-STD-2007-213740 "Guide for Oxygen Compatibility Assessments on Oxygen Components and Systems" and any associated testing in accordance with NASA-STD-6001 "Flammability, Offgassing, and Compatibility Requirements and Test Procedures" and related consensus methodology standard testing.

The "Fire Hazards in Oxygen Systems" course provides specific knowledge regarding the fire hazards associated with oxygen, material evaluation and selection for use in oxygen-enriched environments, assessment of ignition mechanisms for components and systems, and evaluation of consequences of ignition. Although general topic courses may be commercially available, courses provided by NASA/WSTF cover more in-depth material with unique emphasis on flight and sensitive / reactive system applications. Customers developing or applying hardware to space flight or other sensitive and potentially catastrophic applications may require unique flight application specific training, as well as NASA training certification not available in the commercial marketplace.

WSTF's Oxygen and Standard Testing core capability has evaluated materials and systems for spacecraft safety for more than 30 years maintaining vast hazard evaluation experience. NASA WSTF possesses unique testing facilities, unique custom analysis and interpretation capabilities, as well as unique NASA M&P certification. WSTF is the only oxygen, propellant, and NASA-STD-6001 materials and component test facility within NASA and is not available in the commercial marketplace.

The legal authority for this Annex, consistent with the Umbrella Agreement, is in accordance with the Space Act, Other Transactions Authority (OTA), 51 U.S.C. § 20113(e).

ARTICLE 2. RESPONSIBILITIES

NASA will use reasonable efforts to:

1. Provide input and support to Creare oxygen system design.

2. Perform Oxygen Compatibility Assessments (OCA)s as requested on Creare oxygen components and systems.
3. Perform NASA-STD-6001 testing on materials and components as recommended by OCAs.
4. Provide OCA reports, test data and final reports.
5. Provide "Fire Hazards in Oxygen Systems" training to Creare personnel either at WSTF or at Creare facility.

B. Partner will use reasonable efforts to:

1. Provide the following oxygen system details for oxygen system design support and OCAs that will be performed by NASA/WSTF under this Annex:

- a) Background information – Describe what system will be used for.
- b) System schematic and corresponding component list (Bill of Materials or BOM)
- c) Nominal line velocities in the system
- d) Component information (needed for each component):
  - (i) Manufacturer/Model
  - (ii) Cut-sheet which shows the flow path
  - (iii) Materials for all parts wetted with O<sub>2</sub>
- e) Environment information:
  - (i) Maximum pressure
  - (ii) Maximum oxygen concentration
  - (iii) Maximum temperature
  - (iv) Cleanliness spec-
  - (v) Particulate/Non-volatile Residue, NVR level
- f) History of use
- g) High-level operating procedures

2. Provide materials and components to NASA/WSTF for testing.

3. Work with WSTF to plan "Fire Hazards in Oxygen Systems" training dates and locations.

4. Support agreed upon either in-person or via teleconference between Creare and other NASA or non-NASA third-party participants.

### ARTICLE 3. SCHEDULE AND MILESTONES

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

NASA will provide system design support and perform OCAs on Creare oxygen systems and components.	As requested by Creare
NASA will perform testing of oxygen system materials and components.	As identified by OCA and requested by Creare
NASA will provide "Fire Hazards in Oxygen Systems" training at WSTF or Creare facility.	As requested by Creare
Creare will coordinate with WSTF to plan location and dates for "Fire Hazards in Oxygen Systems" training.	6 weeks before training starts
Creare will provide funds to NASA for "Fire Hazards in Oxygen Systems"	4 weeks before training start date.
NASA will ship course materials to Creare facility if "Fire Hazards in Oxygen Systems" training is not held at WSTF.	1 week before training start date

### ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of \$286,953.89 for NASA to carry out its responsibilities under this Annex.  
Payment will be issued as work is requested.

Each payment shall be marked with WSTF SAA-RA-23-39597-01.

B. NASA will not provide services or incur costs beyond the current funding. Although NASA has made a good faith effort to accurately estimate its costs, it is understood that NASA provides no assurance that the proposed effort under this Annex will be accomplished for the estimated amount. Should the effort cost more than the estimate, Partner will be advised by NASA as soon as possible. Partner shall pay all costs incurred and have the option of canceling the remaining effort, or providing additional funding in order to continue the proposed effort under the revised estimate. Should this Annex be terminated, or the effort completed at a cost less than the agreed-to estimated cost, NASA shall account for any unspent funds within one year after completion of all effort under this Annex, and promptly thereafter, at Partner's option return any unspent funds to Partner or apply any such unspent funds to other activities under the Umbrella

Agreement. Return of unspent funds will be processed via Electronic Funds Transfer (EFT) in accordance with 31 C.F.R. Part 208 and, upon request by NASA, Partner agrees to complete the Automated Clearing House (ACH) Vendor/Miscellaneous Payment Enrollment Form (SF 3881).

#### ARTICLE 5. LIABILITY

For the responsibilities and activities conducted under this Annex, and any claims arising thereunder, the following sentence shall be added to the end of Paragraph C, Article 8 (titled "Liability") of the Umbrella Agreement:

Prior to issuing such direction, NASA will consider input from Partner and other factors such as the extent to which damage was attributable to the activity and the respective responsibilities of each Party as described in the Agreement.

#### ARTICLE 6. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. Data produced under this Annex which is subject to paragraph C. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement will be protected for the period of two years.

B. Under paragraph H. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement, 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 provided.

1. Background Data:

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

2. Third Party Proprietary Data:

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

3. Controlled Government Data:

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

4. The following software and related Data will be provided to Partner under a separate Software Usage Agreement:

None

#### ARTICLE 7. TERM OF ANNEX

This Annex 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, unless such term exceeds the duration of the Umbrella Agreement. The term of this Annex shall not exceed the term of the Umbrella Agreement. The Annex automatically expires upon the expiration of the Umbrella Agreement.

ARTICLE 8. RIGHT TO TERMINATE

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

ARTICLE 9. POINTS OF CONTACT

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

Management Points of Contact

NASA White Sands Test Facility  
Jason Noble  
WSTF Site Manager  
Mail Stop: WSTF-RA111  
12600 NASA Road  
Las Cruces, NM 88012  
Phone: 575-524-5069  
jason.e.noble@nasa.gov

Creare LLC  
Helena Gardner  
Contracts Manager  
16 Great Hollow Road  
Hanover, NH 03755-3116  
Phone: 603-640-2540  
Fax: 603-643-4657  
hgardner@creare.com

Technical Points of Contact

NASA White Sands Test Facility  
Jennie Ward  
Materials & Processes Engineer  
Mail Suite: RF111  
12600 NASA Road  
Las Cruces, NM 88012  
Phone: 575-524-5459  
jennie.ward@nasa.gov

Creare LLC  
Mike Izenon  
Principal Engineer  
16 Great Hollow Road  
Hanover, NH 03755-3116  
Phone: 603-640-2405  
Fax: 603-643-4657  
mgizenon@creare.com

ARTICLE 10. MODIFICATIONS

Any modification to this Annex shall be executed, in writing, and signed by an authorized representative of NASA and the Partner. Modification of an Annex does not modify the terms of the Umbrella Agreement.

ARTICLE 11. SIGNATORY AUTHORITY

The signatories to this Annex covenant and warrant that they have authority to execute this Annex. By signing below, the undersigned agrees to the above terms and conditions.

NATIONAL AERONAUTICS AND  
SPACE ADMINISTRATION  
WHITE SANDS TEST FACILITY

CREARE LLC

BY: \_\_\_\_\_  
Jason E. Noble  
Director, White Sands Test Facility

BY: \_\_\_\_\_  
Patrick Magari  
President

Patrick J  
Magari:A01094E0000017  
D96564A3300007182

Digitally signed by Patrick J  
Magari:A01094E0000017D96564A  
3300007182  
Date: 2023.11.20 13:56:07 -05'00'

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

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