

ANNEX
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
AND
FIREFLY AEROSPACE INC.
UNDER
SPACE ACT UMBRELLA AGREEMENT
NO. SAA8-2339781, DATED _____
SAA8-2339781.1

ARTICLE 1. PURPOSE

This Annex shall be for the purpose of working with Firefly Aerospace in helping to resolve persistent thermal issues that have appeared during development of their Blue Ghost RCS engines, as well as to provide subject matter expert consultation from within the propulsion department on engine and system design best practices with respect to spacecraft propulsion systems. Support provided on this Annex will encompass engines that will be flown on Firefly Aerospace's Blue Ghost lunar lander, as well as the Elytra orbital vehicle. This collaboration effort will involve the review of design approaches, manufacturing methods, and the operation of major components for Firefly Aerospace's unique rocket engine designs.

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 MSFC will use reasonable efforts to:

1. Communicate technical information to Firefly through regular meetings and phone calls.
2. Provide feedback regarding engine design and performance data.
3. Support design review meetings as scheduled and provide technical feedback.
4. Consult with Firefly on their hardware manufacturing methods and make recommendations regarding advanced manufacturing techniques.
5. Consult with Firefly on test and mission operations and processes.
6. Provide inputs to Firefly for testing components and related sub-systems for developing the engine components.

Firefly will use reasonable efforts to:

1. Establish regularly scheduled meetings and phone calls to allow support by NASA MSFC.
2. Share engine design and performance data with NASA MSFC.

3. Provide design review materials to NASA MSFC prior to formal reviews.
4. Share information regarding manufacturing methods to NASA MSFC.
5. Provide spacecraft operations workflows and processes to NASA MSFC.
6. Provide test plans for engines and component sub-systems for review.

ARTICLE 3. SCHEDULE AND MILESTONES

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

- | | |
|---|-------------------------------------|
| 1. Firefly to establish regularly scheduled meetings and phone calls to allow support by NASA MSFC | As needed |
| 2. NASA MSFC to communicate technical information to Firefly through regular meetings and phone calls | As needed |
| 3. Firefly to provide design review materials to NASA MSFC prior to formal reviews | At least 2 workdays prior to review |
| 4. NASA MSFC to provide feedback regarding engine design and performance data | Milestone 3 + 1-2 weeks |
| 5. Firefly to provide design review materials to NASA MSFC prior to formal reviews | At least 2 workdays prior to review |
| 6. NASA MSFC to support design review meetings as scheduled and provide technical feedback | Milestone 5 + 1-2 weeks |
| 7. Firefly to share information regarding manufacturing methods to NASA MSFC | As needed |
| 8. NASA MSFC to consult with Firefly on their hardware manufacturing methods and make recommendations regarding advanced manufacturing techniques | Milestone 7 + 1-2 weeks |
| 9. Firefly to provide spacecraft operations workflows and processes to NASA MSFC | As needed |
| 10. NASA MSFC to consult with Firefly on test and mission operations and processes | Milestone 9 + 1-2 weeks |
| 11. Firefly to provide test plans for engines and component sub-systems for review | As needed |
| 12. NASA MSFC to provide inputs to Firefly for testing components and related sub-systems for developing the engine components | Milestone 11 + 1-2 weeks |

ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of \$666,291 for NASA to carry out its responsibilities under this Annex.

Each payment shall be marked with NASA MSFC and SAA8-2339781.1.

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. 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:

None

2. Third Party Proprietary Data:

None

3. Controlled Government Data:

None

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

None

ARTICLE 6. 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 four years and ten months 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 7. RIGHT TO TERMINATE

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

ARTICLE 8. POINTS OF CONTACT

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

Technical Points of Contact

NASA George C. Marshall Space
Flight Center
David Bullard
Lead, Component Technology and
Infusion Team
Mail Suite: ER13
Marshall Space Flight Center, AL
35812
Phone: 256-544-3787
brad.bullard@nasa.gov

FIREFLY AEROSPACE INC.
Brigette Oakes
Director of Propulsion
1320 Arrow Point Drive
Cedar Park, TX 78613-2169
Brigette.Oakes@fireflyspace.com

ARTICLE 9. 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 10. 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
GEORGE C. MARSHALL SPACE
FLIGHT CENTER

FIREFLY AEROSPACE INC.

BY: _____
Donald W. Holder
Director Engineering Directorate

BY:  _____
Shea Ferring
SVP of Engineering & CTO

DATE: _____

DATE: 11/28/2023