

ANNEX
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
AND
HALO ENGINES
UNDER
SPACE ACT UMBRELLA AGREEMENT
NO. SAA8-2441468, DATED _____
SAA8-2441468.1

ARTICLE 1. PURPOSE

This Annex shall be for the purpose of consulting on Rotating Detonation Rocket Engine (RDRE) hardware with HALO Engines based on MSFC expertise in design and experience in testing of RDRE prototypes.

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. Host kickoff meeting.
2. Deliver NASA MSFC maturation of additive really little engines (MARLEN) hardware to HALO.
3. Deliver constant pressure hardware to HALO.
4. Provide conceptual design analysis to HALO.
5. Design RDRE hardware using computer-aided design (CAD).
6. Complete and deliver RDRE hardware to HALO Engines.

HALO will use reasonable efforts to:

1. Attend kickoff meeting.
2. Provide all design requirements to NASA MSFC.
3. Provide concurrence for the final design before manufacturing.
4. Provide all hot-fire test data, final reports, images, video, and tested hardware owned by NASA MSFC.

ARTICLE 3. SCHEDULE AND MILESTONES

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

1. NASA MSFC, with HALO's participation, to host kickoff meeting Effective Date + 1 month
2. NASA MSFC to deliver NASA MARLEN hardware to HALO Effective Date + 1 month
3. NASA MSFC to deliver constant pressure hardware to HALO Effective Date + 1 month
4. NASA MSFC to provide conceptual design analysis to HALO Milestone 1 + 2 weeks
5. HALO to provide design requirements to NASA MSFC Milestone 4 + 1 week
6. NASA MSFC to design RDRE hardware using HALO's provided design requirements Milestone 5 + 3 months
7. HALO to provide concurrence on final design before manufacturing Milestone 6 + 1 week
8. NASA MSFC to complete and deliver RDRE hardware Milestone 7 + 3 months
9. HALO to provide all hot-fire test data, final reports, images, video, and tested hardware owned by NASA MSFC Milestone 8 + 4 months

ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of \$97,000.83 for NASA to carry out its responsibilities under this Annex.

Each payment shall be marked with MSFC and SAA8-2441468.1.

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. LIABILITY

A. Partner hereby waives any claims against NASA or one or more of its Related Entities for any injury to, or death of, Partner or one or more of its Related Entities, or for damage to, or loss of, Partner's property or the property of its Related Entities, arising from or related to activities conducted under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct. For purposes of this Agreement, "Related Entities" shall mean contractors and subcontractors of a Party at any tier; grantees, investigators, customers, and users of a Party at any tier and their contractors or subcontractor at any tier; or, employees of the Party or any of the foregoing.

B. Partner further agrees to extend this unilateral waiver to its related entities by requiring them, by contract or otherwise, to waive all claims against NASA and its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement. In the event the U.S. Government incurs any liability based upon Partner's failure to provide for the waiver by Partner's Related Entities set out above, Partner agrees to indemnify and hold the U.S. Government harmless against such liability, including costs and expenses incurred by the U.S. Government in defending against any suit or claim for liability by Partner's Related Entities.

C. In the event U.S. Government property is damaged as a result of activities conducted under this Agreement, except in the case of gross negligence or willful misconduct by NASA, Partner shall be solely responsible for the repair and restoration of such property subject to NASA direction.

D. Notwithstanding the other provisions of this Article, the waiver of liability set forth in this section shall not be applicable to:

- i. Claims between Partner and its own Related Entity or between its own Related Entities;
- ii. Claims made by a natural person, his/her estate, survivors, or anyone claiming by or through him/her (except when such person or entity is a Party to this Agreement or is otherwise bound by the terms of this waiver) for bodily injury to, or other impairment of health of, or death of, such person;
- iii. Claims for damage caused by willful misconduct;
- iv. Intellectual property claims;
- v. Claims for damage resulting from a failure of Partner to extend the waiver of liability to its Related Entities, pursuant to paragraph B of this Article; or
- vi. Claims by Partner arising out of or relating to NASA's failure to perform its obligations under this 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 one year.

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 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 one year 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. TERMINATION

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.

Technical Points of Contact

NASA George C. Marshall Space Flight
Center

HALO Engines
Jonathan Reyes

Thomas Teasley
Propulsion Engineer
Mail Suite: ER13
Marshall Space Flight Center, AL 35812
Phone: 256-961-2179
thomas.w.teasley@nasa.gov

Head of Business and Systems
3987 Night Heron Drive
Sanford, FL 32773-7399
Jonathan@haloengines.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
GEORGE C. MARSHALL SPACE
FLIGHT CENTER

HALO ENGINES

BY: _____
Lisa Bates
Director, Engineering Directorate

BY: 
Jonathan Reyes
Head of Business and Systems

DATE: _____

DATE: 10/29/2024