

ANNEX
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
AND UNITED LAUNCH ALLIANCE
UNDER SPACE ACT UMBRELLA AGREEMENT
NO. SAA8-1726580, DATED 10/31/2017 SAA8-1726580.17

ARTICLE 1. PURPOSE

This Annex shall be for the purpose of performing 4699 Test Stand restoration following the anomaly that occurred while testing the Centaur V Structural Test Article Number One (STA1) for United Launch Alliance (ULA) in support of the Vulcan rocket program.

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 a single engineering point of contact for all communication between NASA and ULA.
2. NASA assess damage to MSFC test equipment, sensors, and test systems. Provide the partner with list of hardware to be repaired or replaced.
3. NASA assess damage to MSFC facilities. Provide oversight to the partner during repair/replacement of damaged facilities.
4. NASA MSFC re-install into Test Stand 4699 all special test equipment and cryogenic storage, delivery, and pressurization systems that are unique to cryogenic structural testing and will require NASA specialized experience and understanding to perform.

ULA will use reasonable efforts to:

1. Provide a single engineering point of contact for all communication between NASA and ULA.
2. Repair or replace damaged NASA test equipment, sensors, and test system hardware.
3. Repair or replace damaged MSFC facilities required to perform Centaur V STA2 structural test.
4. Repair or replace all remaining MSFC facilities damaged during STA1 failure.

ARTICLE 3. SCHEDULE AND MILESTONES

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

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|--|------------------------|
| 1. NASA MSFC and Partner provide a single engineering point of contact for all communication between NASA and ULA. | Effective Date + 1 Day |
| 2. NASA MSFC assess damage to MSFC test equipment, sensors, and test systems. Provide the partner with list of hardware to be repaired or replaced. | Milestone 1 + 5 days |
| 3. NASA MSFC assess damage to MSFC facilities. Provide oversight to the partner during repair/replacement of damaged facilities. | Milestone 1 + 5 days |
| 4. Partner repair or replace damaged NASA test equipment, sensors, and test system hardware. | Milestone 2 + 60 days |
| 5. Partner repair or replace damaged MSFC facilities required to perform Centaur V STA2 structural test. | Milestone 3 + 80 days |
| 6. NASA MSFC re-install into Test Stand 4699 all special test equipment and cryogenic storage, delivery, and pressurization systems that are unique to cryogenic structural testing and will require NASA specialized experience and understanding to perform. | Milestone 4 + 30 days |
| 7. Partner repair or replace all remaining MSFC facilities damaged during STA1 failure. | Milestone 5 + 120 days |

ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of \$1,701,762.00 for NASA to carry out its responsibilities under this Annex.
 The Partner agrees to pay NASA MSFC \$1,200,000.00 prior to initiation of work under this Agreement, and another \$501,762.00 one week prior to the start of Milestone No. 6. Each payment shall be marked with SAA8-1726580.17

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 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 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 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 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

United Launch Alliance
Patrick Jones

Mike Lau
Structural Strength Test Branch Chief
Mail Suite: 4619:144B
Marshall Space Flight Center, AL 35812
Phone: 256-544-5609
mike.p.lau@nasa.gov

Test and Verification Project Manager
7670 South Chester Street
Centennial, CO 801123439
Phone: 720-425-6311
Patrick.Jones@ulalaunch.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

UNITED LAUNCH ALLIANCE

BY: _____
Mary E. Koelbl
Director Engineering Directorate

BY: _____
Don Tidwell
Contract Management Specialist

DATE: _____

DATE: _____