

ANNEX
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
AND RUAG SPACE USA, INC
UNDER SPACE ACT UMBRELLA AGREEMENT
NO. SAA8-1829459 DATED 1/24/2019, SAA8-1829459.5.

ARTICLE 1. PURPOSE

This Annex shall be for the purpose of performing structural qualification tests on a second Interstage Adapter (ISA) Qualification Module 2 (QM2) composite Structural Test Article (STA) for RUAG Space USA Inc. in support of the Centaur V/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. Install strain gages on the Interstage Adapter (ISA) QM2 structural test article (STA).
2. Install the ISA QM2 STA into existing 4619 test stand and connect to existing data and control systems already configured from the first ISA structural test.
3. Conduct structural qualification tests on the ISA QM2 STA. NASA will apply loads, temperatures, and record/display data and video per Partner requirements.
4. Deliver test data to Partner.
5. Conduct post-test review.
6. Deliver test report package to Partner.

RUAG will use reasonable efforts to:

1. Provide instrumentation drawings prior to strain gage installation on the ISA QM2 STA.
2. Provide ISA QM2 STA for instrumentation installation.
3. Deliver instrumented ISA QM2 STA to MSFC building 4619.
4. Conduct structural qualification tests on the ISA QM2 STA. Partner will provide stress analysts and project manager to review data real-time and authorize proceeding to each new load step.
5. Conduct post-test review.
6. Authorize break of configuration for test teardown to begin.

ARTICLE 3. SCHEDULE AND MILESTONES

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

1. Partner provide instrumentation drawings prior to strain gage installation on the ISA QM2 STA. 5/16/2022
2. Partner provide ISA QM2 STA for instrumentation installation. 5/23/2022
3. NASA install strain gages on the ISA QM2 STA. Milestone 2 + 60 days
4. Partner deliver instrumented ISA QM2 STA to MSFC building 4619. Milestone 3 + 2 days
5. NASA install the ISA QM2 STA into existing 4619 test stand and connect to existing data and control systems already configured from first ISA structural test. Milestone 4 + 100 days
6. NASA and Partner conduct structural qualification tests on the ISA QM2 STA. NASA will apply loads, temperatures, and record/display data and video per Partner requirements. Partner will provide stress analysts and project manager to review data real-time and authorize proceeding to each new load step. Milestone 5 + 33 days
7. NASA deliver test data to Partner. Milestone 6 + 1 day
8. NASA and Partner conduct Post Test Review. Milestone 6 + 5 days
9. Partner authorize break of configuration for test teardown to begin. Milestone 8 + 1 day
10. NASA deliver test report package to Partner. Milestone 6 + 24 days

ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of \$1,820,003.00 for NASA to carry out its responsibilities under this Annex. Each payment shall be marked with SAA8-1829459.5.

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 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
Mike Lau
Structural Branch Chief
Marshall Space Flight Center, AL 35812
Phone: 256-544-5609
mike.p.lau@nasa.gov

RUAG Space USA, Inc
Charlotte Houser
Business Operations Manager
1101 McMurtrie Drive, Suite D2
Huntsville, AL 35806-1778
Phone: 256-285-0800
charlotte.houser@ruag.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

BEYOND GRAVITY USA, INC

BY: _____
Mary E. Koelbl
Director Engineering Directorate

BY: _____
David Rowe
General Manager

DATE: _____

DATE: _____