

ANNEX
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
AND NORTHROP GRUMMAN SYSTEM CORPORATION, AS SECTOR
UNDER SPACE ACT UMBRELLA AGREEMENT
NO. SAA8-2339975, DATED _____ SAA8-2339975.1.

ARTICLE 1. PURPOSE

This Annex shall provide hot gas testing of materials for the development of Northrop Grumman System Corporation (NGSC) thermal protection systems (TPS).

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. Manage and supervise the test program;
2. Provide the facilities to perform the test;
3. Provide the data acquisition system;
4. Provide the control and instrumentation systems;
5. Conduct Test Readiness Review (TRR);
6. Conduct first test series of test program
7. Conduct second series of test program; and
8. Provide post-test data package.

B. Partner will use reasonable efforts to:

1. Support the TRR;
2. Deliver test articles;
3. Provide a signed test request for each test case of both test series detailing test requirements with NGSC and MSFC/NASA concurrence; and
4. Provide supporting test engineer for technical support during test program.

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 will provide the facilities to perform the test. | Effective Date |
|---|----------------|

- | | |
|--|-------------------------------------|
| 2. NASA MSFC will provide data acquisition system. | Effective Date |
| 3. NASA MSFC will provide control and instrumentation systems. | Effective Date |
| 4. NASA MSFC will conduct and Partner support TRR. | Effective Date + 30
Calendar Day |
| 5. Partner will deliver test articles to NASA MSFC. | Milestone 4 + 30 Calendar
Days |
| 6. Partner will provide a signed test request for each test case of both test series detailing test requirements with Partner and MSFC/NASA concurrence. | Milestone 5 + 30 Calendar
Days. |
| 7. NASA MSFC will conduct test program. | Milestone 6 + 90 Calendar
Days |
| 8. NASA MSFC will provide post-test data package to the NGSC. | Milestone 7 + 30 Calendar
Days |

ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of \$242,691.00 for NASA to carry out its responsibilities under this Annex. Furthermore, and if desired by Partner, Partner agrees to reimburse NASA an estimated cost of \$34,500 per day for NASA to carry out up to an additional twenty days of testing under this Annex.

Each payment shall be marked with SAA8-2339975.1.

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 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.

Management Points of Contact

NASA George C. Marshall Space Flight
Center

Michael Fazah
Acting Director - Test Laboratory

Northrop Grumman Corporation
ASBU

Camden Moffet
Engineer

Marshall Space Flight Center, AL 35812
Phone: 256-544-8475
mike.fazah@nasa.gov

9160 UT-83
Clearfield, UT 84016-9998
Phone: 385-459-1283
Camden.moffet@ngc.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

NORTHROP GRUMMAN
CORPORATION
ASBU

BY: _____
Larry Leopard
Associate Director, Technical

BY: _____
Tammy Elton
Procurement Specialist

DATE: _____

DATE: _____