

REIMBURSABLE SPACE ACT AGREEMENT
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GLENN RESEARCH CENTER
AND
GENERAL ELECTRIC COMPANY, GE AEROSPACE
FOR
GE AEROSPACE CLEEN III UNDUCTED SINGLE FAN TEST

ARTICLE 1. AUTHORITY AND PARTIES

In accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113(e)), this Agreement is entered into by the National Aeronautics and Space Administration Glenn Research Center, located at 21000 Brookpark Road, Cleveland, OH 44135 (hereinafter referred to as "NASA" or "NASA GRC") and GENERAL ELECTRIC COMPANY, GE AEROSPACE located at 1 Neumann Way, Cincinnati, OH 45215-1915 (hereinafter referred to as "Partner" or "GE"). NASA and Partner may be individually referred to as a "Party" and collectively referred to as the "Parties."

ARTICLE 2. PURPOSE

The purpose of this Agreement is for GE Aerospace to obtain aerodynamic, aeromechanical, and aeroacoustic performance data to investigate the efficiency and noise characteristics of unducted single fan (USF) configurations for advanced engine applications. The fully reimbursable tests will be conducted in the NASA GRC 8x6 Supersonic Wind Tunnel (SWT) and the NASA GRC 9x15 Low Speed Wind Tunnel (LSWT). This activity is consistent with NASA's mission because it will test a new propulsion concept that may improve next generations of aircraft, which aligns with NASA aeronautical endeavors. Additionally, this activity is also conducted under the Federal Aviation Administration's Continuous Lower Energy, Emissions, and Noise (CLEEN) program, which NASA is a part and the goal of which is to reduce fuel burn, emission, and noise through advancement of aircraft and engine technologies.

ARTICLE 3. RESPONSIBILITIES

A. NASA GRC will use reasonable efforts to:

1. Provide the use of the 8'x 6' SWT and the 9'x15' LSWT and all associated equipment, support systems, personnel, and facilities necessary to operate the tunnel for the purpose of conducting the tests.
2. Provide the labor, hardware, and systems necessary to install and functionally checkout the Open Rotor Propulsion ("ORPR") Drive Rig and all its related support equipment for powered operation in the 8'x 6' SWT and the 9'x15' LSWT facilities.

3. Provide to GE the use of the ORPR Drive Rig support systems and existing U.S. Government-owned hardware required by GE test configurations.
4. Coordinate with GE on all the details of the operational capabilities of the 8'x 6' SWT and the 9'x15' LSWT.
5. Provide to GE an Interface Control Document that will include existing and sharable mechanical and electrical interface drawings with NASA GRC ORPR Drive Rig, ORPR Drive Rig structural design report, and wind tunnel model design criteria. Facility data system software interface description, requirements, and mechanical instrumentation interfaces will be shared with GE per standard tunnel operating procedures as defined by facility personnel.
6. Provide personnel and equipment to perform installation of the GE test hardware, to assemble, configure, maintain, and disassemble the test hardware during testing.
7. Provide to GE, reasonable and necessary use of the NASA GRC Collect Observe Broadcast Record and Analyze (COBRA) data system and all facility-related pressure and temperature data measurement systems.
8. Provide to GE, engineering and software support to acquire and reduce NASA GRC standard aerodynamic performance data and provide as-measured data in engineering units. Data reduction and analysis of test data will be limited to NASA GRC standard performance parameters and calculations via online software in the COBRA facility data system, including real time displays and printout of performance parameters. Performance parameters specified by GE from the set of NASA GRC standard parameters will be written to files for electronic transmission to GE as required.
9. Provide to GE, engineering support to acquire and reduce far-field acoustic data and limited post-test data reduction in a format and delivery to GE by a method to be mutually agreed to by NASA GRC and GE.
10. Record and provide steady state electronic data from the COBRA system to GE in format files mutually agreed to by NASA GRC and GE which will be electronically transmitted by NASA GRC to GE during testing.
11. Record and provide unsteady electronic data from other NASA GRC dynamic signal recording systems no later than six (6) weeks after the start of testing. Data format and delivery method to be mutually agreed upon by NASA GRC and GE prior to the start of testing.
12. Coordinate on a system or process capable of delivering real-time or near real-time transfer of certain data during testing before the start of testing.

13. Identify and mark all technical data provided or made available to GE with the data's applicable security level (if any/applicable) and the export control jurisdiction and classification to help GE to safeguard such data; provided, however, this responsibility does not change the Parties' obligations with respect to export control as described in Article 12(G) and Article 19 of this Agreement.

14. Review and approve test plan provided by GE before testing shall commence.

B. Partner will use reasonable efforts to:

1. Provide test direction, test planning, and research engineering and specialized GE data system test coverage during the tests in the NASA GRC 8'x6' SWT and the 9'x15' LSWT.

2. Provide an overall test plan to NASA GRC no later than twelve (12) weeks before the start of testing that: 1) documents the test objectives, goals, and rationale for the test; 2) provides a synopsis of types of testing to be conducted; and 3) provides a test matrix that identifies the configuration specific fan model hardware, instrumentation, and operating conditions for testing. GE will coordinate with NASA GRC on the test plan and test matrix for each configuration, and GE retains the right to make cost neutral (as confirmed by NASA) adjustments to the hardware configurations and test conditions within the test matrix both prior to and during the test campaign. Testing shall not commence until NASA GRC provides its approval of the test plan.

3. Provide final online data acquisition and data definition requirements no later than twelve (12) weeks prior to the start of testing.

4. Provide mechanical and instrumentation assembly drawings for all customer provided test hardware, to NASA GRC no later than four (4) weeks prior to delivery of the fan model and other associated hardware to NASA GRC.

5. Provide all information, as required by NASA GRC, to assure safety of operation per criteria manual NASA TM 2004-212706 rev1. Information shall be provided to NASA GRC for review and concurrence as soon as possible, but no later than twelve weeks prior to the scheduled start of testing, and shall include but is not limited to: 1) a stress analysis and hazard analysis of all fan model components not previously tested at NASA GRC; 2) blade stress and frequency information for safety monitoring of all fan model hardware.

6. Provide a daily operating plan during testing with required fan model configuration, wind tunnel and fan model operating conditions, and critical instrumentation list, define a list of the minimum instrumentation required to conduct testing, prior to the start of daily testing. Testing shall not commence until NASA GRC provides its approval of the daily operating plan.

7. Provide engineering coverage to monitor fan model research and health instrumentation during testing.

8. Coordinate with NASA GRC on the model instrumentation and data requirements for the test. GE will provide to NASA GRC a final instrumentation list no later than twelve weeks prior to the scheduled start of testing.
9. Coordinate with NASA GRC to ensure sufficient hardware and software is available to perform build-up of the ORPR Drive Rig in its initial test configuration no later than sixteen (16) weeks prior to the start of testing. Additional hardware for subsequent rig builds will be delivered during the test campaign prior to NASA defined respective need dates.
10. Confirm that all participating GE test personnel comply with the 8'x6' SWT and the 9'x15' LSWT and NASA GRC safety regulations, procedures, and all safety requirements, including as specified in the NASA GRC Safety Manual.
11. Provide NASA GRC unique support hardware, equipment, or services required to conduct the test, and which are not part of the NASA GRC responsibilities specified, as necessary.
12. Be responsible for the payment of costs associated with the packing and shipping of all GE model hardware and test equipment to and from the designated site.
13. Identify and mark all technical data provided or made available to NASA GRC with the data's applicable security level (if any/applicable) and the export control jurisdiction and classification to help NASA GRC to safeguard such data; provided, however, this responsibility does not change the Parties' obligations with respect to export control as described in Article 12(G) and Article 19 of this Agreement.

ARTICLE 4. SCHEDULE AND MILESTONES

The planned major milestones and estimated schedule for the activities defined in the "Responsibilities" Article are identified below and in a separate document labeled as "Appendix A."

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|---|-----------------|
| 1. GE to deliver final GE Test Plan for the 8'x6' test entry to NASA GRC. | SEE APPENDIX A. |
| 2. GE to deliver final GE computing requirements for the 8'x6' test entry to NASA GRC | SEE APPENDIX A. |
| 3. GE to deliver safety documentation for the 8'x6' test entry to NASA GRC to support Safety Review. | SEE APPENDIX A. |
| 4. GE to deliver GE fan model hardware for the initial build configuration for the 8'x'6' test entry to NASA GRC. | SEE APPENDIX A. |

5. NASA GRC to conduct GE Unducted Single Fan Wind Tunnel Testing in the 8’x6’ SWT on model configurations. SEE APPENDIX A.
6. NASA GRC to deliver final and complete aerodynamic results from 8’x6’ test entry to GE. SEE APPENDIX A.
7. NASA GRC to deliver final and complete acoustic results from 8’x6’ test entry to GE. SEE APPENDIX A.
8. GE to deliver final GE Test Plan for the 9’x15’ test entry to NASA GRC. SEE APPENDIX A.
9. GE to deliver final GE computing requirements for the 9’x15’ test entry to NASA GRC. SEE APPENDIX A.
10. GE to deliver safety documentation for the 9’x15’ test entry to NASA GRC to support Safety Review. SEE APPENDIX A.
11. GE to deliver any additional GE fan model hardware and instrumentation for the 9’x15’ test entry to NASA GRC. SEE APPENDIX A.
12. NASA GRC to conduct GE Unducted Single Fan Wind Tunnel Testing in the 9’x15’ LSWT on model configurations. SEE APPENDIX A.
13. NASA GRC to pack and ship GE test model hardware to GE. SEE APPENDIX A.
14. NASA GRC to deliver final and complete aerodynamic results from 9’x15’ test entry to GE. SEE APPENDIX A.
15. NASA GRC to deliver final and complete acoustic results from 9’x15’ test entry to GE. SEE APPENDIX A.

ARTICLE 5. FINANCIAL OBLIGATIONS

A. The Partner agrees to reimburse NASA an estimated total cost of \$36,536,677 for NASA to carry out its responsibilities under this Agreement. In no event will NASA transfer any U.S. Government funds to Partner under this Agreement. Payment must be made by Partner in advance of initiation of NASA's efforts on behalf of the Partner in accordance with the below payment schedule:

- (1) The Partner agrees to pay NASA \$3,700,000 upon signing of the SAA.
- (2) The Partner agrees to pay NASA \$6,194,218 at twelve (12) weeks prior to the start of Milestone No. 4.

- (3) The Partner agrees to pay NASA \$11,541,136 at twelve (12) weeks prior to the start of Milestone No. 5.
- (4) The Partner agrees to pay NASA \$4,226,277 at twelve (12) weeks prior to the initiation of work in the 9'x15' Low Speed Wind Tunnel and another \$10,875,046 at twelve (12) weeks prior to the start of Milestone No. 12.

B. Payment shall be payable to the National Aeronautics and Space Administration through the NASA Shared Services Center (NSSC) (choose one form of payment):

- (1) U.S. Treasury FEDWIRE Deposit System, Federal Reserve Wire Network Deposit System;
- (2) pay.gov at <https://paygov.nssc.nasa.gov/> and select the appropriate NASA Center for the agreement from the drop down; or
- (3) check. A check should be payable to NASA and sent to:

NASA Shared Services Center
FMD – Accounts Receivable For the Accounts of: Glenn Research Center
Building 1111,
Jerry Hlass Rd.,
Stennis Space Center, MS 39529

Payment by electronic transfer (#1 or #2, above), is strongly encouraged, and payment by check is to be used only if circumstances preclude the use of electronic transfer. All payments and other communications regarding this Agreement shall reference the Center name, title, date, and number of this Agreement.

C. NASA will not provide services or incur costs beyond the existing payment. 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 Agreement will be accomplished for the above 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 has the option of canceling the remaining effort, or providing additional funding in order to continue the proposed effort under the revised estimate. Should this Agreement be terminated, or the effort completed at a cost less than the agreed-to estimated cost, NASA shall account for any unspent funds within 120 business days after completion of all effort under this Agreement, and promptly thereafter return any unspent funds to Partner. 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).

D. Notwithstanding any other provision of this Agreement, all activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of

this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

ARTICLE 6. PRIORITY OF USE

Any schedule or milestone in this Agreement is estimated based upon the Parties' current understanding of the projected availability of NASA goods, services, facilities, or equipment. In the event that NASA's projected availability changes, Partner shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's use of the goods, services, facilities, or equipment shall have priority over the use planned in this Agreement. Should a conflict arise, NASA, in its sole discretion, shall determine whether to exercise that priority. Likewise, should a conflict arise as between two or more non-NASA Partners, NASA, in its sole discretion, shall determine the priority as between those Partners. This Agreement does not obligate NASA to seek alternative government property or services under the jurisdiction of NASA at other locations.

ARTICLE 7. NONEXCLUSIVITY

This Agreement is not exclusive; accordingly, NASA may enter into similar agreements for the same or similar purpose with other private or public entities.

ARTICLE 8. 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; however, Partner's liability for such repair and restoration shall not exceed \$500,000.

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 9. LIABILITY - PRODUCT LIABILITY

With respect to products or processes resulting from a Party's participation in an SAA, each Party that markets, distributes, or otherwise provides such product, or a product designed or produced by such a process, directly to the public will be solely responsible for the safety of the product or process.

ARTICLE 10. LIABILITY – PRODUCTS LIABILITY INDEMNIFICATION

In the event the U.S. Government incurs any liability based upon Partner's, or Partner's Related Entity's, use or commercialization of products or processes resulting from a Party's participation under this Agreement, 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 such liability.

ARTICLE 11. LIABILITY - INSURANCE FOR DAMAGE TO NASA PROPERTY

A. No less than eight (8) weeks prior to the start of testing, Partner shall, at no cost to NASA, acquire, and maintain throughout the term of the Agreement, insurance covering claims for bodily injury, personal injury, death, property damage, or other loss or damages arising from any activities conducted under this Agreement, with a limit of \$1,000,000, and shall provide NASA acceptable evidence of such insurance.

B. By signing this Agreement, Partner certifies that it will have all insurance required under this Agreement by the time required in Paragraph A, and such insurance will be issued by companies with a credit rating of at least "A-" and a financial size category of at least "VIII" in the current edition of Best's Insurance Reports (or its equivalent successor, or, if there is no equivalent successor rating, otherwise mutually acceptable to the Parties) and are licensed to do and doing business in all states in which activities will

be conducted under the Agreement. NASA is not obligated to provide access to its facilities or equipment under this Agreement until and unless the insurance required by this section is in effect. Any deductibles selected by Partner for any insurance coverage shall be the sole responsibility of Partner.

ARTICLE 12. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. General

1. "Related Entity" as used in this Data Rights Article means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Partner that is assigned, tasked, or contracted to perform activities under this Agreement.
2. "Data" means recorded information, regardless of form, the media on which it is recorded, or the method of recording.
3. "Proprietary Data" means Data embodying trade secrets developed at private expense or commercial or financial information that is privileged or confidential, and that includes
 - a. restrictive notice, unless the Data is:
 - a. known or available from other sources without restriction;
 - b. known, possessed, or developed independently, and without reference to the Proprietary Data;
 - c. made available by the owners to others without restriction; or
 - d. required by law or court order to be disclosed.
4. Data exchanged under this Agreement is exchanged without restriction except as otherwise provided herein.
5. Notwithstanding any restrictions provided in this Article, the Parties are not restricted in the use, disclosure, or reproduction of Data provided under this Agreement that meets one of the exceptions in 3., above. If a Party believes that any exceptions apply, it shall notify the other Party before any unrestricted use, disclosure, or reproduction of the Data.
6. The Parties will not exchange preexisting Proprietary Data under this Agreement unless authorized herein or in writing by the owner.
7. If the Parties exchange Data having a notice that the Receiving Party deems is ambiguous or unauthorized, the Receiving Party shall tell the Providing Party. If the notice indicates a restriction, the Receiving Party shall protect the Data under this Article unless otherwise directed in writing by the Providing Party.
8. The Data rights herein apply to the employees and Related Entities of Partner. Partner shall ensure that its employees and Related Entity employees know about and are bound by the obligations under this Article.

9. Disclaimer of Liability: NASA is not restricted in, or liable for, the use, disclosure, or reproduction of Data without a restrictive notice or for Data Partner gives, or is required to give, the U.S. Government without restriction.

10. Partner may use the following or a similar restrictive notice:

Proprietary Data Notice

The data herein include Proprietary Data and are restricted under the Data Rights provisions of Space Act Agreement [provide applicable identifying information].

Partner should also mark each page containing Proprietary Data with the following or a similar legend: "Proprietary Data – Use And Disclose Only Under the Notice on the Title or Cover Page."

B. Data First Produced by Partner Under this Agreement

If Data first produced by Partner or its Related Entities under this Agreement is given to NASA, and the Data is Proprietary Data, and it includes a restrictive notice, NASA will use reasonable efforts to protect it. The Data will be disclosed and used (under suitable protective conditions) only for U.S. Government purposes.

C. Data First Produced by NASA Under this Agreement

If Partner requests that Data first produced by NASA under this Agreement be protected, and NASA determines it would be Proprietary Data if obtained from Partner, NASA will mark it with a restrictive notice and use reasonable efforts to protect it for five (5) years after its development. During the restricted period, unless greater rights are otherwise permitted in writing by Partner, the Data may be disclosed and used by NASA and any Related Entity of NASA (under suitable protective conditions) only for carrying out NASA responsibilities under this Agreement, and thereafter for any purpose (should NASA still have possession of the Data). At Partner's written request, when no longer needed by NASA for the purpose of carrying out NASA responsibilities under this Agreement, such marked Data (or any portion thereof) will be destroyed or otherwise disposed of at any time before expiration of the restricted period as directed by Partner. The foregoing is subject to, and not intended to modify, any rights to Data that NASA was granted pursuant to the FAA CLEEN Contract.

D. Publication of Results

The National Aeronautics and Space Act (51 U.S.C. § 20112) requires NASA to provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof. As such, NASA may publish unclassified and non-Proprietary Data resulting from work performed under this Agreement. The Parties will coordinate publication of results allowing a reasonable time to review and comment.

E. Data Disclosing an Invention

If the Parties exchange Data disclosing an invention for which patent protection is being considered, and the furnishing Party identifies the Data as such when providing it to the Receiving Party, the Receiving Party shall withhold it from public disclosure for one (1) year.

F. Copyright

Data exchanged with a copyright notice and with no restrictive notice is presumed to be published. The following royalty-free licenses apply:

1. If indicated on the Data that it was produced outside of this Agreement, it may be reproduced, distributed, and used to prepare derivative works only for carrying out the Receiving Party's responsibilities under this Agreement.
2. Data without the indication of F.I. is presumed to be first produced under this Agreement. Except as otherwise provided in paragraph E. of this Article, and in the Invention and Patent Rights Article of this Agreement for protection of reported inventions, the Data may be reproduced, distributed, and used to prepare derivative works for any purpose.

G. Data Subject to Export Control

Whether or not marked, technical data subject to the export laws and regulations of the United States provided to Partner under this Agreement must not be given to foreign persons or transmitted outside the United States without proper U.S. Government authorization.

H. Handling of Background, Third Party Proprietary, and Controlled Government Data

1. NASA or Partner (as Disclosing Party) may provide the other Party or its Related Entities (as Receiving Party):
 - a. Proprietary Data developed at Disclosing Party's expense outside of this Agreement (referred to as Background Data);
 - b. Proprietary Data of third parties that Disclosing Party has agreed to protect or is required to protect under the Trade Secrets Act (18 U.S.C. § 1905) (referred to as Third Party Proprietary Data); and
 - c. U.S. Government Data, including software and related Data, Disclosing Party intends to control (referred to as Controlled Government Data).
2. All Background, Third Party Proprietary and Controlled Government Data provided by Disclosing Party to Receiving Party shall be marked by Disclosing Party with a restrictive notice and protected by Receiving Party in accordance with this Article.
3. 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.
 - a. Background Data:
The Disclosing Party's Background Data, if any, will be identified in a separate technical document.

b. Third Party Proprietary Data:

The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate technical document.

c. Controlled Government Data:

The Disclosing Party's Controlled Government Data, if any, will be identified in a separate technical document.

d. Notwithstanding H.4., NASA software and related Data will be provided to Partner under a separate Software Usage Agreement (SUA). Partner shall use and protect the related Data in accordance with this Article. Unless the SUA authorizes retention, or Partner enters into a license under 37 C.F.R. Part 404, the related Data shall be disposed of as NASA directs: None.

4. For such Data identified with a restrictive notice pursuant to H.2. including such Data identified pursuant to this Article, Receiving Party shall:

- a. Use, disclose, or reproduce such Data only as necessary under this Agreement;
- b. Safeguard such Data from unauthorized use and disclosure;
- c. Allow access to such Data only to its employees and any Related Entity requiring access under this Agreement;
- d. Except as otherwise indicated in 4.c., preclude disclosure outside Receiving Party's organization;
- e. Notify its employees with access about their obligations under this Article and ensure their compliance, and notify any Related Entity with access about their obligations under this Article; and
- f. Dispose of such Data as Disclosing Party directs.

I. Oral and visual information

If Partner discloses Proprietary Data orally or visually, NASA will have no duty to restrict, or liability for disclosure or use, unless Partner:

1. Orally informs NASA before initial disclosure that the Data is Proprietary Data, and
2. Reduces the Data to tangible form with a restrictive notice and gives it to NASA within ten (10) calendar days after disclosure.

ARTICLE 13. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND
PATENT RIGHTS

A. General

1. NASA has determined that 51 U.S.C. § 20135(b) does not apply to this Agreement. Therefore, title to inventions made (conceived or first actually reduced to practice) under this Agreement remain with the respective inventing party(ies). No invention or patent rights are exchanged or granted under this Agreement, except as provided herein.
2. "Related Entity" as used in this Invention and Patent Rights Article means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Partner assigned, tasked, or contracted with to perform activities under this Agreement.

3. The invention and patent rights herein apply to employees and Related Entities of Partner. Partner shall ensure that its employees and Related Entity employees know about and are bound by the obligations under this Article.

B. NASA Inventions

NASA will use reasonable efforts to report inventions made under this Agreement by its employees. Upon request, NASA will use reasonable efforts to grant Partner, under 37 C.F.R. Part 404, a negotiated license to any NASA invention made under this Agreement. This license is subject to paragraph E.1. of this Article.

C. NASA Related Entity Inventions

NASA will use reasonable efforts to report inventions made under this Agreement by its Related Entity employees, or jointly between NASA and Related Entity employees, where NASA has the right to acquire title. Upon request, NASA will use reasonable efforts to grant Partner, under 37 C.F.R. Part 404, a negotiated license to any of these inventions where NASA has acquired title. This license is subject to paragraph E.2. of this Article.

D. Joint Inventions With Partner

The Parties will use reasonable efforts to report, and cooperate in obtaining patent protection on, inventions made jointly between NASA employees, Partner employees, and employees of either Party's Related Entities. Upon timely request, NASA may, at its sole discretion and subject to paragraph E. of this Article:

1. refrain from exercising its undivided interest inconsistently with Partner's commercial business; or
2. use reasonable efforts to grant Partner, under 37 C.F.R. Part 404, an exclusive or partially exclusive negotiated license.

E. Rights to be Reserved in Partner's License

Any license granted Partner under paragraphs B., C., or D. of this Article is subject to the following:

1. For inventions made solely or jointly by NASA employees, NASA reserves the irrevocable, royalty-free right of the U.S. Government to practice the invention or have it practiced on behalf of the United States or on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.
2. For inventions made solely or jointly by employees of a NASA Related Entity, NASA reserves the rights in 1. above, and a revocable, nonexclusive, royalty-free license retained by the Related Entity under 14 C.F.R. § 1245.108 or 37 C.F.R. § 401.14 (e).

F. Protection of Reported Inventions

For inventions reported under this Article, the Receiving Party shall withhold all invention reports or disclosures from public access for one (1) year to facilitate establishment of patent rights.

G. Patent Filing Responsibilities and Costs

1. The invention and patent rights herein apply to any patent application or patents covering an invention made under this Agreement. Each Party is responsible for its own costs of obtaining and maintaining patents covering sole inventions of its employees. The Parties may agree otherwise, upon the reporting of any invention (sole or joint) or in any license granted.
2. Partner shall include the following in patent applications for an invention made jointly between NASA employees, its Related Entity employees and Partner employees:

The invention described herein may be manufactured and used by or for the U.S. Government for U.S. Government purposes without the payment of royalties thereon or therefore.

The Partner is informed that it can locate NASA technology available for licensing by visiting the following website address – <http://technology.nasa.gov>.

ARTICLE 14. USE OF NASA NAME AND NASA EMBLEMS

A. NASA Name and Initials

Partner shall not use "National Aeronautics and Space Administration" or "NASA" in a way that creates the impression that a product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. Except for releases under the "Release of General Information to the Public and Media" Article, Partner must submit any proposed public use of the NASA name or initials (including press releases and all promotional and advertising use) to the NASA Associate Administrator for the Office of Communications or designee ("NASA Communications") for review and approval. Approval by NASA Office of Communications shall be based on applicable law and policy governing the use of the NASA name and initials.

B. NASA Emblems

Use of NASA emblems (i.e., NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) is governed by 14 C.F.R. Part 1221. Partner must submit any proposed use of the emblems to NASA Communications for review and approval.

ARTICLE 15. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

NASA or Partner may, consistent with Federal law and this Agreement, release general information regarding its own participation in this Agreement as desired.

Pursuant to Section 841(d) of the NASA Transition Authorization Act of 2017, Public Law 115-10 (the "NTAA"), NASA is obligated to publicly disclose copies of all agreements conducted pursuant to NASA's 51 U.S.C. §20113(e) authority in a searchable format on the NASA website within 60 days after the agreement is signed by the Parties. The Parties acknowledge that a copy of this Agreement will be disclosed, without redactions, in accordance with the NTAA.

ARTICLE 16. DISCLAIMER OF WARRANTY

Goods, services, facilities, or equipment provided by either Party under this Agreement are provided "as is." Neither Party makes any express or implied warranty as to the condition of any such goods, services, facilities, or equipment, or as to the condition of any research or information generated under this Agreement, or as to any products made or developed under or as a result of this Agreement including as a result of the use of information generated hereunder, or as to the merchantability or fitness for a particular purpose of such research, information, or resulting product, or that the goods, services, facilities or equipment provided will accomplish the intended results or are safe for any purpose including the intended purpose, or that any of the above will not interfere with privately-owned rights of others. Neither Partner, the government nor its contractors shall be liable for special, consequential, or incidental damages attributed to such equipment, facilities, technical information, or services provided under this Agreement or such research, information, or resulting products made or developed under or as a result of this Agreement.

ARTICLE 17. DISCLAIMER OF ENDORSEMENT

NASA does not endorse or sponsor any commercial product, service, or activity. NASA's participation in this Agreement or provision of goods, services, facilities, or equipment under this Agreement does not constitute endorsement by NASA. Partner agrees that nothing in this Agreement will be construed to imply that NASA authorizes, supports, endorses, or sponsors any product or service of Partner resulting from activities conducted under this Agreement, regardless of the fact that such product or service may employ NASA-developed technology.

ARTICLE 18. COMPLIANCE WITH LAWS AND REGULATIONS

A. The Parties shall comply with all applicable laws and regulations including, but not limited to, safety; security; export control; environmental; and suspension and debarment laws and regulations. Access by a Partner to NASA facilities or property, or to a NASA Information Technology (IT) system or application, is contingent upon compliance with NASA security and safety policies and guidelines including, but not limited to, standards on badging, credentials, and facility and IT system/application access, including use of Interconnection Security Agreements (ISAs), when applicable.

B. With respect to any export control requirements:

1. The Parties will comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 C.F.R. Parts 120 through 130, and the Export Administration Regulations (EAR), 15 C.F.R. Parts 730 through 799, in performing work under this Agreement or any Annex to this Agreement. In the absence of available license exemptions or exceptions, the Partner shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.
2. The Partner shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of work under this Agreement or any Annex under this Agreement, including instances where the work is to be performed on-site at NASA and where the foreign person will have access to export-controlled technical data or software.
3. The Partner will be responsible for all regulatory record-keeping requirements associated with the use of licenses and license exemptions or exceptions.
4. The Partner will be responsible for ensuring that the provisions of this Article apply to its Related Entities.

C. With respect to suspension and debarment requirements:

1. The Partner hereby certifies, to the best of its knowledge and belief, that it has complied, and shall comply, with 2 C.F.R. Part 180, Subpart C, as supplemented by 2 C.F.R. Part 1880, Subpart C.
2. The Partner shall include language and requirements equivalent to those set forth in subparagraph C.1., above, in any lower-tier covered transaction entered into under this Agreement.

D. With respect to the requirements in Section 889 of the National Defense Authorization Act (NDAA) for Fiscal Year 2019, Public Law 115-232:

1. In performing this Agreement, Partner will not use, integrate with a NASA system, or procure with NASA funds (if applicable), "covered telecommunications equipment or services" (as defined in Section 889(f)(3) of the NDAA).
2. The Partner will ensure that the provisions of this Article apply to its Related Entities.

ARTICLE 19. TERM OF AGREEMENT

This Agreement 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 (4) years from the Effective Date, whichever comes first.

ARTICLE 20. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Agreement by providing thirty (30) calendar days written notice to the other Party. In the event of such termination, Partner will be obligated to reimburse NASA for all costs for which the Partner was responsible and that have been incurred in support of this Agreement up to the date the termination notice is received by NASA. Where Partner terminates this Agreement, Partner will also be responsible for termination costs.

ARTICLE 21. CONTINUING OBLIGATIONS

The rights and obligations of the Parties that, by their nature, would continue beyond the expiration or termination of this Agreement, e.g., "Liability and Risk of Loss", "Intellectual Property Rights"-related clauses, and "Financial Obligations" shall survive such expiration or termination of this Agreement.

ARTICLE 22. POINTS OF CONTACT

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

Management Points of Contact

NASA

Michael S. McVetta
Test Facility Management Branch Chief
Mail Stop: 6-8
21000 Brookpark Road
Cleveland, OH 44135
Phone: 216-433-2832
michael.s.mcvetta@nasa.gov

GENERAL ELECTRIC COMPANY, GE
AEROSPACE

Travis McCullough
Contracts Manager
1 Neumann Way
Cincinnati, OH 45215-1915
Phone: 513-432-6728
Travis.McCullough@ge.com

Technical Points of Contact

NASA

Michelle Lasic
Facility Manager
Mail Stop: 6-8
21000 Brookpark Road
Cleveland, OH 44135
Phone: 216-433-3996
Michelle.lasic@nasa.gov

GENERAL ELECTRIC COMPANY, GE
AEROSPACE

Adam W. Clark
RISE LP TechMat Leader
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Phone: 513-608-1044
Adam.W.Clark@ge.com

Principal Investigator Point of Contact

NASA
David M. Elliott
Aerospace Engineer
Mail Stop: 54-3
21000 Brookpark Road
Cleveland, OH 44135
Phone: 216-433-8711
david.m.elliott@nasa.gov

GENERAL ELECTRIC COMPANY, GE
AEROSPACE
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Cincinnati, OH 45215-1915
Phone: 513-608-1044
Adam.W.Clark@ge.com

ARTICLE 23. DISPUTE RESOLUTION

Except as otherwise provided in the Article entitled "Priority of Use," the Article entitled "Intellectual Property Rights – Invention and Patent Rights" (for those activities governed by 37 C.F.R. Part 404), and those situations where a pre-existing statutory or regulatory system exists (e.g., under the Freedom of Information Act, 5 U.S.C. § 552), all disputes concerning questions of fact or law arising under this Agreement shall be referred by the claimant in writing to the appropriate person identified in this Agreement as the "Points of Contact." The persons identified as the "Points of Contact" for NASA and the Partner will consult and attempt to resolve all issues arising from the implementation of this Agreement. If they are unable to come to agreement on any issue, the dispute will be referred to the signatories to this Agreement, or their designees, for joint resolution. If the Parties remain unable to resolve the dispute, then the NASA signatory or that person's designee, as applicable, will issue a written decision that will be the final agency decision for the purpose of judicial review. Nothing in this Article limits or prevents either Party from pursuing any other right or remedy available by law upon the issuance of the final agency decision.

ARTICLE 24. INVESTIGATIONS OF MISHAPS AND CLOSE CALLS

In the case of a close call, mishap or mission failure, the Parties agree to provide assistance to each other in the conduct of any investigation. For all NASA mishaps or close calls, Partner agrees to comply with NPR 8621.1, "NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping".

ARTICLE 25. MODIFICATIONS

Any modification to this Agreement shall be executed, in writing, and signed by an authorized representative of NASA and the Partner.

ARTICLE 26. ASSIGNMENT

Neither this Agreement nor any interest arising under it will be assigned by the Partner or NASA without the express written consent of the officials executing, or successors, or higher-level officials possessing original or delegated authority to execute this Agreement.

ARTICLE 27. APPLICABLE LAW

U.S. Federal law governs this Agreement for all purposes, including, but not limited to, determining the validity of the Agreement, the meaning of its provisions, and the rights, obligations, and remedies of the Parties.

ARTICLE 28. INDEPENDENT RELATIONSHIP

This Agreement is not intended to constitute, create, give effect to, or otherwise recognize a joint venture, partnership, or formal business organization, or agency agreement of any kind, and the rights and obligations of the Parties shall be only those expressly set forth herein.

ARTICLE 29. LOAN OF GOVERNMENT PROPERTY

The Parties shall enter into a NASA Form 893, Loan of NASA Equipment, for NASA equipment loaned to Partner, if any.

ARTICLE 30. SIGNATORY AUTHORITY

The signatories to this Agreement covenant and warrant that they have authority to execute this Agreement. By signing below, the undersigned agrees to the above terms and conditions.

NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION
GLENN RESEARCH CENTER

GENERAL ELECTRIC COMPANY,
GE AEROSPACE

BY: _____
James A. Kenyon, Ph.D.
Center Director

BY: Travis McCullough
Travis McCullough
Contracts Manager

DATE: _____

DATE: 11/21/2023