

REIMBURSABLE SPACE ACT AGREEMENT
between
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
and
NTT RESEARCH, INC.
to
Benchmark Coherent Ising Machines

NASA Agreement No. SAA2-403506

ARTICLE 1. AUTHORITY AND PARTIES

In accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113(e)), this Reimbursable Space Act Agreement (this “**Agreement**”) is entered into by the National Aeronautics and Space Administration Ames Research Center, located at Moffett Field, CA 94035 (“**NASA**” or “**NASA ARC**”), and NTT Research, Inc., a Delaware corporation with offices located at 1950 University Avenue, Suite 600, East Palo Alto, CA 94303, (“**Partner**” or “**NTT Research**”). NASA and Partner may be individually referred to as a “**Party**” and collectively referred to as the “**Parties**.”

ARTICLE 2. PURPOSE

NTT Research is developing Coherent Ising Machines (**CIMs**), based on optical parametric oscillators (**OPO**) technology, for solving combinatorial optimization problems. This Agreement’s goal is to advance NTT Research’s understanding of its early prototypes of alternative computational technologies and those prototypes’ potential uses.

Under this Agreement, the NASA Quantum Artificial Intelligence Lab (“**QuAIL**”) will do the following (the “**Project**”): benchmark generation for the machines built by NTT Research during the Term (as defined in Article 16 below), identify application-relevant problem classes and specific instances that make good use of features of the CIMs (including high connectivity, higher-order couplings, and a recurrent neural net structure); and compare performance with other classical and quantum approaches. The NASA QuAIL team will also support NTT Research in deepening its understanding of the underlying physics, provide advice on the new hardware development, and provide insight into which problem classes are best suited to the technology. The problem classes will relate to areas of application interest for NTT Research, such as efficient resource allocation and communication network optimization.

ARTICLE 3. RESPONSIBILITIES

A. NASA ARC will use reasonable efforts to:

1. Identify suitable benchmark problem classes, and design benchmark sets of instances within those classes;

2. Compare performance of CIMs on the above-identified problems (in Article 2) to other classical and quantum approaches found in the public domain; and
 3. Provide insight into the underlying physics, particularly physics mechanisms that could provide computational advantage.
- B. Partner will use reasonable efforts to provide NASA with access to and support for its CIM processors, and access to supporting software and documentation.
- C. During the Term (as defined in Article 16 below), each Party shall notify the other Party regarding results and findings (including but not limited to products, techniques, data, or information) that are generated in or derived from the Project from time to time (“**Project Results**”).
- D. NASA ARC shall deliver to Partner the following reports:
1. *Interim Progress Reports.* NASA shall provide Partner with annual written progress reports in respect of the Project on the anniversary of the Effective Date (defined in Article 16). Each progress report shall (A) provide a reasonably detailed description of the Project status and progress (including a reasonably detailed analysis of milestones achieved or not achieved) for the period covered by such progress report and (B) include a copy of all Project Results as of the date of the progress report and any underlying data.
 2. *Final Report.* Within ninety (90) days after completion of the Project, NASA shall deliver to Partner a detailed report on the Project Results.
 3. *Early Termination Report.* In case of termination of this Agreement pursuant to Article 17 by either Party, NASA shall prepare a report on the Project Results carried out prior to the effective date of expiration or termination and deliver such report to Partner within ninety (90) days of the effective date of expiration or termination. The requirement to provide the Early Termination Report is subject to Partner’s payment of the Scheduled Payment Amount for the year in which termination occurs. For the avoidance of doubt, the Early Termination Report is considered part of the effort under this Agreement.

ARTICLE 4. SCHEDULE AND MILESTONES

The planned major milestones for the activities defined in Article 3 (Responsibilities) are as follows:

Milestones	Estimated Begin Date	Estimated Completion Date
NTT Research to provide NASA with access to and support for its CIM processors, and access to supporting software and documentation (Partner)	30 days from the Effective Date	September 2024

NASA to identify suitable benchmark problem classes, and design benchmark sets of instances within those classes (NASA)	180 days from the Effective Date	June 2023
NASA to compare performance of CIMs on the above identified problems to other classical and quantum approaches (NASA)	300 days from the Effective Date	May 2024
NASA to provide insight into the underlying physics, particularly physics mechanisms that could provide computational advantage (NASA)	One year from the Effective Date	June 2024
NASA and NTT Research to publish findings (Joint)	N/A	September 2024

ARTICLE 5. FINANCIAL OBLIGATIONS

- A. Partner agrees to reimburse NASA for its actual costs incurred in carrying out the Project in accordance with its responsibilities under this Agreement. The total estimated costs of this Project are \$750,000. Partner agrees to pay NASA \$150,000 USD within ten (10) days after the Effective Date (as defined in Article 16 below), and then \$150,000 USD annually on each anniversary of the Effective Date during the Term (as defined in Article 16 below) or within thirty (30) days of receipt of NASA’s invoice, whichever occurs later (each such payment, a “**Scheduled Payment Amount**”). The Scheduled Payment Amounts are estimates. Although NASA has made a good faith effort to 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 NASA expect that the actual costs of the effort under the Project will exceed the Scheduled Payment Amount for the year, NASA will promptly (1) advise Partner as outlined in Article 5.C and (2) use its best efforts to reduce its Project staff’s time allocated to the Project in a manner that lowers the Project costs to an amount not to exceed such Scheduled Payment Amount. In no event shall Partner be required to pay, in total under this Agreement, an amount more than NASA’s actual costs. 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. Beginning in the second year of the Term, NASA shall provide Partner with an annual financial report covering NASA’s Project costs incurred in the previous year.
- B. Payment shall be payable to the National Aeronautics and Space Administration through the NASA Shared Serviced Center (NSSC) (*choose one form of payment*):
1. U.S. Treasury FEDWIRE Deposit System, Federal Reserve Wire Network Deposit System;

2. Pay.Gov at www.nssc.nasa.gov/customerservice (select “Pay NASA” from the *Quick Links to the right of the page*; then, select *Ames Research Center* from the *NASA Center dropdown menu*); or
3. Check. A check should be made payable to NASA and sent to the following address:

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

Payment by electronic transfer (the methods identified in Article 5.B.1 or 5.B.2 above), is strongly encouraged, and payment by check is to be used only if circumstances preclude the use of electronic transfer. All payments under this Agreement shall reference the Ames Research Center, and the title, date, and the NASA reference number of this Agreement (No. SAA2-403506).

- C. NASA will not provide services or incur costs beyond the existing payment (i.e., the funding amount provided by Partner under this Agreement and resident with NASA at the time the services are performed or costs incurred). 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, in any year of the Term, NASA expect that the actual costs of the effort of the Project will exceed the Scheduled Payment Amount for that year, NASA shall (1) advise Partner as soon as possible but in any event prior to NASA incurring costs in excess of the Scheduled Payment Amount, and (2) use its best efforts to reduce its Project staff’s time allocated to the Project in a manner that lowers the Project costs to an amount not to exceed such Scheduled Payment Amount. Nonetheless, Partner shall pay all costs incurred by NASA in accordance with this Agreement. Upon receiving the notice identified in clause (1) of the previous sentence, Partner shall also have the option of cancelling the remaining effort of the Project and paying all costs incurred, or providing additional funding in order to continue the proposed effort under a revised estimate. Should this Agreement be terminated by either Party, or the effort completed at a cost less than the agreed-to estimated cost, NASA shall account for any unspent funds within one (1) year after completion of all effort under this Agreement (including any Early Termination Report provided in accordance with Article 3.D.3), and promptly thereafter return any unspent or unobligated funds to Partner.
- 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 Partner, and one or more non-NASA partners, NASA, in its sole discretion, shall determine the priority as between Partner and such non-NASA 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, the Parties may enter into similar agreements for the same or similar purpose with other private or public entities.

ARTICLE 8. LIABILITY AND RISK OF LOSS

- A. Partner hereby waives any claims against NASA, its employees, its related entities, ("*related entities*," for the purposes of this Article 8 only, include, but are not limited to, contractors and subcontractors at any tier, grantees, investigators, customers, users, and their contractors and subcontractors, at any tier) and employees of NASA's related entities for any injury to, or death of, Partner employees or the employees of Partner's 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.
- 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, its related entities, and employees of NASA and employees of NASA's related entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement.

ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS – DATA RIGHTS

A. General

- 1. "**Related Entity**," as used in this Article 9, means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Partner (as the case may be) that is assigned, tasked, or contracted to perform activities relating to 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 9, the Parties are not restricted in the use, disclosure, or reproduction of Data provided under this Agreement that meets one of the exceptions in Article 9.A.3 above. If a Receiving Party believes that any of these exceptions apply, it shall notify the Providing 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 9 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.
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 that 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 No. SAA2-403506.

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 this restricted period, the Data may be disclosed and used (under suitable protective conditions) for U.S. Government purposes only, and thereafter for any purpose. Partner must not disclose the Data, except to its outside counsel, without NASA's written approval during the restricted period. The restrictions placed on NASA do not apply to Data disclosing a NASA-owned invention for which patent protection is being considered.

D. Publication of Project 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. Either Party may publish unclassified and non-Proprietary Data resulting from work performed under this Agreement, except that Partner agrees not to publish Data that NASA considers to be "Sensitive But Unclassified," as defined in NASA Interim Directive 1600.55. The Parties will coordinate publication of Project 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 a reasonable time (one (1) year, unless otherwise agreed by the Parties or the Data is restricted for a longer period under this Agreement).

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, the Receiving Party may reproduce, distribute, and use such Data to prepare derivative works only for carrying out the Receiving Party's responsibilities under this Agreement unless otherwise agreed by the Parties in writing.
2. Data without the indication described in Article 9.F.1 is presumed to be first produced under this Agreement. Except as otherwise provided in Article 9.E or in Article 10, the Receiving Party may reproduce, distribute, and use the Data 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 Data, Third Party Proprietary Data, 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 Data, Third Party Proprietary Data, 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 9.
3. Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change by mutual written agreement, and do not supersede any restrictive notice on the Data.
 - a. Background Data: None
 - b. Third Party Proprietary Data: None.
 - c. Controlled Government Data: None.
 - d. Notwithstanding Article 9.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 9. 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 with a restrictive notice pursuant to Article 9.H.2, 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 Article 9.H.4.c, preclude disclosure outside Receiving Party's organization;
- e. Notify its employees with access about their obligations under this Article 9 and ensure their compliance, and notify any Related Entity with access about their obligations under this Article 9; 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. Before initial disclosure, orally informs NASA 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 initial disclosure.

ARTICLE 10. 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 Article 10, means the same as defined in Article 9.A.1.
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 10.

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 Article 10.E.1.

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 Article 10.E.2.

D. Joint Inventions with Partner

1. 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 Article 10.E:
 - a. refrain from exercising its undivided interest inconsistently with Partner's commercial business; or
 - b. 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 Articles 10.B., 10.C., or 10.D. 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 Article 10.E.1 above, and a revocable, non-exclusive, 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 10, the Receiving Party shall withhold all invention reports or disclosures from public access for a reasonable time (one (1) year unless otherwise agreed or unless restricted for a longer period under this Agreement) 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 therefor.”

ARTICLE 11. 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 Article 12 (Release of General Information to the Public and Media), 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 12. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

- A. NASA or Partner may, consistent with Federal law and this Agreement, release general information regarding its own participation in this Agreement as desired.
- B. 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 sixty (60) days after the agreement is fully executed. The Parties acknowledge that a copy of this Agreement will be disclosed, without redactions, in accordance with the NTAA.

ARTICLE 13. DISCLAIMER OF WARRANTY

Goods, services, facilities, or equipment provided by NASA under this Agreement are provided “as is.” NASA makes no 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 the U.S. 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 14. 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 whether such product or service employs NASA-developed technology.

ARTICLE 15. 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 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. NASA shall use its best efforts to provide reasonable notice of any such policies and guidelines to Partner in advance of Partner's access to NASA facilities or property, or to a NASA IT system or application.
- 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 attachment 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 attachment to 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 15 apply to its Related Entities.

C. With respect to suspension and debarment requirements:

1. 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. Partner shall include language and requirements equivalent to those set forth in Article 15.C.1 above, in any lower-tier covered transaction entered into under this Agreement.

ARTICLE 16. TERM OF AGREEMENT

This Agreement becomes effective upon the date of the last signature below (“**Effective Date**”) and, unless otherwise terminated in accordance with this Agreement, shall remain in effect until (i) the completion of all obligations of both Parties; or (ii) five (5) years from the Effective Date, whichever of the two comes first (such period, the “**Term**”).

ARTICLE 17. RIGHT TO TERMINATE

- A. Either Party may terminate this Agreement by providing thirty (30) days’ written notice to the other Party. In the event of such termination, subject to Article 5.C., 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. If Partner terminates this Agreement, subject to Article 5.C, Partner will also be responsible for termination costs.
- B. The termination or expiration of this Agreement for any reason shall not affect either Party’s rights or obligations that accrued prior to the effective date of expiration or termination, nor shall termination or expiration of this Agreement release the Parties from any responsibilities they incurred prior to the effective date of expiration or termination.

ARTICLE 18. CONTINUING OBLIGATIONS

The rights and obligations of the Parties that, by their nature, would continue beyond the expiration or termination of this Agreement, including but not limited to, Article 3.D.3; Articles 8 through 15; Articles 18 through 24; Articles 27 through 28.

ARTICLE 19. POINTS OF CONTACT

The following personnel are designated as the points of contact between the Parties in the performance of this Agreement, except that either Party may replace its points of contact by notice to the other Party.

Technical Points of Contact

If to NASA:

NASA Ames Research Center
Eleanor Rieffel
Senior Researcher
Mail Suite: 269-128
Moffett Field, CA 94035
650-604-0019
eleanor.rieffel@nasa.gov

If to Partner:

NTT Research, Inc.
Yoshihisa Yamamoto
Director of NTT PHI Labs
1950 University Ave., Suite 600
East Palo Alto, CA 94303
650-579-0800
yoshihisa.yamamoto@ntt-research.com

Management Points of Contact

If to NASA:

NASA Ames Research Center
Brenden Sanborn
Agreements Manager
Mail Suite: 223-3
Moffett Field, CA 94035
650-604-6662
Brenden.Sanborn@nasa.gov

If to Partner:

NTT Research, Inc.
Hideaki Ozawa
COO/CTO
1950 University Ave., Suite 600
East Palo Alto, CA 94303
650-579-0800
hideaki.ozawa@ntt-research.com

ARTICLE 20. DISPUTE RESOLUTION

Except as otherwise provided in Article 6 (Priority of Use) or Article 10 (Intellectual Property Rights – Invention and Patent Rights) (for those activities governed by 37 C.F.R. Part 404), or 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 Article 19 as the “Management Points of Contact.” The persons identified as the “Management Points of Contact” for NASA and 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 20 limits or prevents either Party from pursuing any other right or remedy available by law upon the issuance of the final agency decision.

ARTICLE 21. ENTIRE AGREEMENT; MODIFICATIONS; WAIVERS

This Agreement constitutes the entire agreement between the Parties with respect to the subject matter described herein, and supersedes and replaces all prior or contemporaneous oral or written agreements between them relating to such subject matter. Any modification to this Agreement shall be executed, in writing, and signed by an authorized representative of NASA and Partner. Without limiting the generality of the previous sentence, any waiver of any right or obligation

under this Agreement must be in a writing, signed by the waiving Party, that clearly states that Party's intent to waive. No failure or delay of one Party to require performance by the other of any provision of this Agreement shall in any way adversely affect such Party's right to subsequently require full performance of such provision. No waiver by one Party of a breach of any provision of this Agreement shall be considered a waiver by such Party of any succeeding breach of such provision.

ARTICLE 23. ASSIGNMENT

Neither this Agreement nor any interest arising under it may be assigned by 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 24. 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 25. 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 25. LOAN OF GOVERNMENT PROPERTY

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

ARTICLE 26. NO THIRD-PARTY BENEFICIARIES

Except to the extent (if any) clearly stated otherwise in this Agreement, the Parties do not intend for this Agreement to create any right in or benefit for any party except themselves. The Parties agree that any such right or benefit that accrues to NASA is held by the U.S. Government as a whole.

ARTICLE 27. SEVERABILITY

If any provision of this Agreement is held invalid, void, unenforceable, or otherwise defective by a court or tribunal of competent jurisdiction, then (A) all other provisions of this Agreement will remain enforceable in accordance with their terms; and (B) the provision in question will be deemed modified or, if necessary, severed, but in either case, (1) only to the minimum extent necessary to cure the defect; and (2) until such time, if any, as the court or tribunal's holding, in relevant respects, is vacated, reversed on appeal, legislatively overruled, or otherwise set aside.

ARTICLE 28. COUNTERPARTS; SIGNATORY AUTHORITY

This Agreement may be signed and delivered in separate counterpart originals; all such counterparts will be deemed to constitute one and the same instrument. Any counterpart may be signed by fewer than both Parties, so long as each Party whose signature is required signs at least one such counterpart. The signatories to this Agreement covenant and warrant that they have authority to execute this Agreement. By signing below, the undersigned agrees to the terms and conditions of this Agreement.

[Remainder of page intentionally left blank.]

[Signatures follow.]

The Parties, through their duly authorized representatives, have executed this Agreement on the dates listed below their signatures.

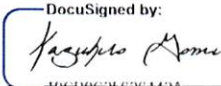
**National Aeronautics and Space
Administration Ames Research
Center**

By:  _____

Rupak Biswas
Director of Exploration Technology

Date: 11/12/2019

NTT Research, Inc.

DocuSigned by:
 _____

Kazuhiro Gomi
President & CEO

Date: 11/7/2019