

Cooperative Research & Development Agreement

Article 1. INTRODUCTION

This Cooperative Research and Development Agreement (CRADA) between _____, a laboratory of the National Oceanic and Atmospheric Administration (NOAA) and the Collaborator will be effective when signed by all Parties. The research and development project(s) which will be undertaken by each of the Parties in the course of this CRADA is detailed in the Technical Statement of Objectives (SoO) which is attached as part of Appendix A. Any exceptions or changes to the CRADA are set forth in Appendix B.

Article 2. DEFINITIONS

As used in this CRADA, the following terms shall have the indicated meanings:

- 2.1 **"Background Invention"** means any invention of either Party that is neither conceived nor first actually reduced to practice under the CRADA.
- 2.2 **"Cooperative Research and Development Agreement"** or **"CRADA"** means this Agreement, entered into by NOAA pursuant to 15 U.S.C. 3710a.
- 2.3 **"Invention"** means any invention or discovery which is or may be patentable or otherwise protected under Title 35 (35 U.S.C.) or any novel variety of plant which is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).
- 2.4 **"Principal Investigator"** or **"PI"** means the person designated respectively by each Party to this CRADA who will be responsible for the scientific and technical conduct of the research.
- 2.5 **"Project Team"** means all personnel assigned by the Collaborator to conduct the research designated in this Agreement.
- 2.6 **"Proprietary Information"** means confidential scientific, business, or financial information, including data created under this Agreement solely by the Collaborator at the Collaborator's research facilities, which may embody trade secrets provided by the Collaborator to NOAA in the course of this CRADA, and developed exclusively at private expense, except if such information:
 - 2.6.1 was in NOAA's possession before receipt from the Collaborator; or
 - 2.6.2 is or becomes a matter of public knowledge through no fault of NOAA; or
 - 2.6.3 is received by NOAA from a third party without a duty of confidentiality; or
 - 2.6.4 is disclosed by the Collaborator to a third party without a duty of confidentiality on the third party; or
 - 2.6.5 is independently disclosed by NOAA with the Collaborator's prior written approval; or
 - 2.6.6 is independently developed by NOAA without reference to information disclosed hereunder.

- 2.7 **"Research Products"** means all tangible materials, other than CRADA Data, first produced in the performance of this CRADA.
- 2.8 **"CRADA Data"** means all recorded information, including computer software, first produced in the performance of this Agreement, excluding Proprietary Information
- 2.9 **"CRADA Invention"** means any invention conceived or first actually reduced to practice under this CRADA.
- 2.10 **"Collaborator"** means the primary signatory on this agreement and its designated partners.

Article 3. **COOPERATIVE RESEARCH**

- 3.1 **Research Plan and Changes.** The Research Plan/Statement of Objectives (SoO) of this CRADA, its duration, and its objectives are detailed in Appendix A. The research under this CRADA shall be performed on a reasonable efforts basis.
- 3.2 **Reviews and Reports.** Periodic conferences shall be held by NOAA and the Collaborator to review work progress. Parties shall exchange formal written interim progress reports and final reports on a schedule as set forth in Appendix A.
- 3.3 **Principal Investigators.** NOAA shall be the supervising Federal agency, both administratively and scientifically, for this CRADA. The NOAA PI is responsible for the scientific and technical conduct of this project on behalf of NOAA. The designated Collaborator PI is responsible for the scientific and technical conduct of this project on behalf of the Collaborator. The Collaborator shall designate the Project Team in Appendix A of this Agreement.
- 3.4 **Project Team.** While at NOAA, the Project Team shall pursue its activities according to the work schedule and under the Government security and conduct regulations that apply to NOAA employees. The Project Team shall conform to the *Standards of Ethical Conduct for Employees of the Executive Branch* (Executive Order 12674 and 5 CFR Part 2635), hereby made part of this Agreement, to the extent that these standards prohibit private business activities or interests incompatible with the best interest of the Department of Commerce. Individuals selected to work at the other Party's laboratory will be subject to the acceptance by that Party. Such acceptance shall not be unreasonably withheld.
- 3.5 **Change in Collaborator Status.** Collaborator agrees to notify NOAA within thirty days should it become subject to the control of a foreign company or government at any time during this Agreement, or if any other change occurs that would require supplementation of or a change to certifications made by Collaborator in Appendix A.

Article 4. **FINANCIAL OBLIGATIONS**

- 4.1 **NOAA and Collaborator Contributions.** Each Party's contribution to the CRADA is listed in Appendix A. Payment schedules, if applicable, are also indicated in Appendix A. The Collaborator shall provide directly for travel and related expenditures for its Project Team. NOAA may not contribute funds to a non-Federal collaborator.

Article 5. **TITLE TO EQUIPMENT**

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- 5.1 **Equipment.** Equipment purchased by NOAA with funds provided under this CRADA by the Collaborator shall be the property of NOAA. All equipment loaned under this CRADA by a Party remains the property of that Party unless the Parties agree in writing on some other disposition. Each Party's equipment will be returned to

the lending Party at the lending Party's expense and risk as soon as practical after termination of the Agreement.

Article 6. TREATMENT OF PROPRIETARY INFORMATION

Protection. Each Party agrees to limit its disclosure of Proprietary Information to the other to the amount necessary to carry out the SoO of this CRADA. The Collaborator shall place a Proprietary Information notice on all information it delivers to NOAA under this Agreement, which the Collaborator asserts is proprietary. NOAA agrees that Proprietary Information shall be used only for the purposes described in the attached SoO. Except where NOAA is legally obligated to release information pursuant to the Freedom of Information Act (5 U.S.C. 552), or other requirement of law, Proprietary Information shall not be disclosed or otherwise made available in any form to any other person, firm, corporation, partnership, association or other entity without the written consent of the Collaborator. NOAA agrees to use its best efforts to maintain the confidentiality of Proprietary Information. NOAA will promptly notify the Collaborator of requests for Collaborator's Proprietary Information. The Collaborator agrees that NOAA is not liable for the disclosure of information designated as Proprietary which, after notice to and consultation with the Collaborator, NOAA determines may not lawfully be withheld or which a court of competent jurisdiction requires disclosed.

These restrictions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by Executive Order No. 12958; section 7211 of title 5, United States Code (governing disclosures to Congress); section 1034 of title 10, United States Code, as amended by the Military Whistleblower Protection Act (governing disclosure to Congress by members of the military); section 2302(b)(8) of title 5, United States Code, as amended by the Whistleblower Protection Act (governing disclosures of illegality, waste, fraud, abuse or public health or safety threats); the Intelligence Identities Protection Act of 1982 (50 U.S.C. 421 et seq.) (governing disclosures that could expose confidential Government agents); and the statutes which protect against disclosure that may compromise the national security, including sections 641, 793, 794, 798, and 952 of title 18, United States Code, and section 4(b) of the Subversive Activities Act of 1950 (50 U.S.C. 783(b)). The definitions, requirements, obligations, rights, sanctions, and liabilities created by said Executive order and listed statutes are incorporated into this agreement and are controlling.

Article 7. INTELLECTUAL PROPERTY

- 7.1 **Preference for U.S. Manufacturing.** The Parties agree that an important purpose of the CRADA is to improve U.S. competitiveness so as to provide substantial benefit to the U.S. economy. Thus, any product embodying CRADA Inventions, or produced through the use of such inventions, for sale or use in the United States by the Collaborator or any affiliate, or licensee, shall be manufactured substantially in the United States.
- 7.2 **Rights to Background Inventions.** No rights to Background Inventions are conveyed by this Agreement.
- 7.3 **Reporting Inventions and Other Responsibilities.** Each Party shall promptly report in writing to the other Party, and to the NOAA Technology Partnerships Office, each CRADA Invention disclosed to it. Such reports shall be maintained as Proprietary by the receiving Party until such time as a patent or other intellectual property application claiming that CRADA Invention has been filed. The Collaborator shall ensure that all Project Team members (a) promptly report any CRADA Inventions they make to the Collaborator, and (b) sign any documents necessary or desirable for the filing and prosecution of patent applications. If any Project Team member is not the Collaborator's employee, the Collaborator shall require the member to agree in writing to assist the Collaborator in fulfilling all of its patent responsibilities under this CRADA.
- 7.4 **Treatment of CRADA Data.**
- 7.4.1 **Ownership of Original Copies of CRADA Data.** NOAA and the Collaborator agree to exchange all CRADA Data. Subject to these sharing requirements, the creating Party will retain the original copy of

all CRADA Data created solely by it. NOAA shall retain the original copy of all jointly created CRADA Data; NOAA shall supply Collaborator with a copy of the original copy of jointly created CRADA Data, and Collaborator shall have access to the original copy. NOAA and Collaborator shall each have the right to use all CRADA Data for their own purposes, consistent with their obligations under this Agreement.

7.4.2 **Ownership of Copyrights of CRADA Data.** Collaborator may copyright its works, or those identifiable portions of a joint work created solely by a Project Team member. When Collaborator claims copyright, Collaborator shall affix the applicable copyright notice of 17 U.S.C. §§ 401, 402, and 403, and an acknowledgment of the scientific and technical contributions of NOAA. The Collaborator grants to the U.S. Government, a paid-up, non-exclusive, irrevocable world-wide license to reproduce or have reproduced, prepare or have prepared in derivative form, and distribute or have distributed copies of CRADA Data for government purposes. CRADA Data created by NOAA employees are not subject to copyright in the United States pursuant to section 105 of title 17 of the United States Code. NOAA may, however, claim copyright in such works outside of the United States.

7.5 **Ownership of Research Products.** NOAA and the Collaborator agree to exchange samples of all Research Products. Research Products will be shared equally by the Parties. Subject to these sharing requirements, the Research Products created under this CRADA are the jointly owned property of the Parties. The Parties agree to make mutually acceptable arrangements for the disposition of unique or hard-to-replace Research Products.

7.6 **Publication and Disclaimer.** Except as provided in Sections 7.3 and 7.7, the Parties are encouraged to make publicly available the results of their research. Before either Party submits a paper or abstract for publication or otherwise intends to publicly disclose information about a CRADA Invention, CRADA Data, or Research Products, the other Party shall be provided thirty (30) days to review the proposed publication or disclosure. NOAA reports and publications developed under this Agreement shall carry the following disclaimer:

"This work was performed under a Cooperative Research and Development Agreement (CRADA) between NOAA and Collaborator. However, the views expressed herein are not necessarily those of NOAA, the Department of Commerce or the U.S. Government."

7.7 **Patenting and Ownership of CRADA Inventions.**

7.7.1 **Government's Minimum Rights.**

7.7.1.1 **NOAA Sole Inventions and Joint Inventions.** Pursuant to the Federal Technology Transfer Act of 1986 as amended (15 U.S.C. 3710a(b)), NOAA, on behalf of the United States Government, shall retain a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced NOAA Sole CRADA Inventions and Joint CRADA Inventions throughout the world by or on behalf of the Government.

7.7.1.2 **Collaborator Sole Inventions.** Pursuant to the Federal Technology Transfer Act of 1986 as amended (15 U.S.C. 3710a(b)), NOAA, on behalf of the United States Government, shall be granted a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced Collaborator Sole CRADA Inventions throughout the world by or on behalf of the Government for research or other Government purposes.

7.7.2 **Joint CRADA Inventions.** Joint CRADA Inventions shall be jointly owned. Collaborator shall be responsible for filing U.S. Patent Applications for joint CRADA Inventions in a timely manner. If Collaborator does not file a U.S. Patent Application on a joint CRADA Invention within six (6) months after disclosure, NOAA may file a U.S. Patent Application on such joint CRADA Invention. The non-filing Party shall reasonably cooperate and assist the filing Party in perfecting the patent application, and the Filing Party shall have the right to control the prosecution of the U.S. Patent Application.

- 7.7.3 **Sole CRADA Inventions.** Except for Joint CRADA Inventions, each Party shall retain title to any CRADA Invention of its employees or Project Team members. The Party retaining title to a CRADA Invention may file a U.S. Patent Application after consultation with the other Party. The owner of a CRADA Invention has no duty to file a U.S. or foreign patent application.
- 7.7.4 **Patent Expenses and Prosecution.** All of the expenses attendant to the filing of patent applications shall be borne by the Party filing such application. Each Party shall promptly provide the other Party with copies of Provisional Patent Applications filed, Non-Provisional Patent Applications filed and Office Actions relating to any CRADA Invention. Any post filing and post-patent fees shall also be borne by the same Party.
- 7.7.5 **Foreign Filings of CRADA Inventions.** The Parties will consult with each other as to the advisability of filing for patent protection outside the U.S.

Article 8. LICENSING

- 8.1 **Option for a Commercialization License.** NOAA, on behalf of the Government, hereby agrees to grant to the Collaborator an option to choose an exclusive or nonexclusive commercialization license to patents or patent applications on NOAA CRADA Inventions and an exclusive commercialization license to NOAA's interest in patents or patent applications on joint CRADA Inventions. The exclusive or nonexclusive license shall be limited to fields of use defined by the subject matter of the SoO found in Appendix A. The license will specify the licensed fields of use, geographic territory, markets, term and royalties, and will, pursuant to Article 7.1 of this CRADA, contain a requirement that products manufactured for sale or use in the United States under the license will be manufactured substantially in the United States. Additional terms and conditions shall be added to all licenses consistent with applicable statutes and regulations. The royalty rates will be based on product sales and the rates conventionally granted in the field identified in the SoO for inventions with reasonably similar commercial potential. The royalty rates will also reflect the relative contributions of the Parties to the invention. Licenses granted under this Article are subject to the reservation of patent licenses in favor of the United States Government required in Section 7.7.1 above.
- 8.2 **Exercise of License Option to NOAA Sole CRADA Inventions.** The option of Section 8.1 must be exercised by written notice mailed within one (1) month after Collaborator's receipt from NOAA of the First Ex parte Action on the Merits by the PTO. The "First Ex parte Action on the Merits" is defined as: The First Ex parte Action on the Merits that clearly establishes the issues which exist between the examiner and the patent owner insofar as the patent is concerned. An action that contains only a restriction requirement does not constitute a "First Ex parte Action on the Merits." Exercise of this option by the Collaborator initiates a negotiation period that expires six (6) months after Collaborator's receipt from NOAA of the First Ex parte Action on the Merits by the PTO. If the last proposal by the Collaborator has not been responded to in writing by NOAA within this six (6) month period, the negotiation period shall be extended to expire one (1) month after NOAA responds. If no agreement is concluded in this period or if Collaborator exercises its option for a nonexclusive license, NOAA shall be free to license such CRADA Inventions to others.
- 8.3 **Exercise of License Option to Joint CRADA Inventions.** The option to NOAA's interest in patents or patent applications on Joint CRADA Inventions of Section 8.1 must be exercised by written notice mailed within one (1) month after the Collaborator is notified by the Patent and Trademark Office that a patent will be allowed on the joint CRADA Invention. Exercise of this option by the Collaborator initiates a negotiation period that expires in six (6) months. If the last proposal by the Collaborator has not been responded to in writing by NOAA within this six (6) month period, the negotiation period shall be extended to expire one (1) month after NOAA responds. If no agreement is concluded in this period or if Collaborator exercises its option for a nonexclusive license, NOAA shall be free to license such CRADA Inventions to others.

Article 9. **TERMINATION**

- 9.1 **Notices.** The Collaborator and NOAA shall each have the right to terminate this Agreement upon 30 days' notice in writing to the other Party. In addition, NOAA shall have the right to terminate any Collaborator's participation in the CRADA for any material breach of the terms and conditions of the CRADA and/or failure to diligently pursue the research and development described in Appendix A – The Research Plan/Statement of Work. In the case of such breach and/or failure, NOAA shall provide written notice to Collaborator and an opportunity to cure. If the Collaborator fails to cure the breach and/or failure within 30 days' of such notice, NOAA may immediately terminate the Collaborator's participation by providing a notice of termination in writing.
- 9.2 **Termination After Change of Control.** NOAA may terminate this Agreement immediately if direct or indirect control of the Collaborator is transferred to a foreign company or government; or, if Collaborator is already controlled by a foreign company or government, if that control is transferred to another foreign company or government.
- 9.3 **Interim Extension.** Upon written or electronic notice from the Collaborator and NOAA PI that it is the intent that the CRADA be amended, as provided in Section 12.5, to extend the term of the CRADA, the term of this Agreement shall be extended for ninety (90) days. Such interim extension shall be available only once prior to the effective date of a written amendment pursuant to Article 12.5 extending the CRADA.

Article 10. **DISPUTES**

- 10.1 **Settlement.** Any dispute arising under this Agreement, which is not disposed of by agreement of the Parties, shall be submitted jointly to the signatories of this Agreement. A joint decision of the signatories or their designees shall be the disposition of such dispute. If the Parties cannot reach a joint decision, either Party may terminate this Agreement immediately.
- 10.2 **Continuation of Work.** Pending the resolution of any dispute or claim pursuant to this Article, the Parties agree that performance of all obligations shall be pursued diligently in accordance with the direction of the NOAA signatory.

Article 11. **LIABILITY**

- 11.1 **Indemnification.**
- 11.1.1 **Conduct of Employees.** Collaborator's Project Team assigned to this SoO are not employees of NOAA. The Collaborator shall indemnify and hold harmless the U.S. Government for any loss, claim, damage, or liability of any kind to the Collaborator's Project Team arising in connection with this Agreement, except to the extent that such loss, claim damage or liability arises from the negligence of NOAA or its employees. NOAA's responsibility for payment of tort claims in connection with the performance of work under this Agreement is governed by the Federal Tort Claims Act.
- 11.2 **Force Majeure.** Neither Party shall be liable for any unforeseeable event beyond its reasonable control not caused by the fault or negligence of such Party, which causes such Party to be unable to perform its obligations under this Agreement (and which it has been unable to overcome by the exercise of due diligence), including, but not limited to, flood, drought, earthquake, storm, fire, pestilence, lightning and other natural catastrophes,

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epidemic, war, riot, civic disturbance or disobedience, strikes, labor dispute, or failure, threat of failure, or sabotage of the NOAA facilities, or any order or injunction made by a court or public agency. In the event of the occurrence of such a force majeure event, the Party unable to perform shall promptly notify the other Party. It shall further use its best efforts to resume performance as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

- 11.3 **NO WARRANTY.** THE PARTIES MAKE NO EXPRESS OR IMPLIED WARRANTY AS TO ANY MATTER WHATSOEVER, INCLUDING THE CONDITIONS OF THE RESEARCH OR ANY INVENTION OR PRODUCT, WHETHER TANGIBLE OR INTANGIBLE, MADE OR DEVELOPED UNDER THIS AGREEMENT, OR THE OWNERSHIP, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE RESEARCH OR ANY INVENTION OR PRODUCT.

Article 12. **MISCELLANEOUS**

- 12.1 **No Benefits.** No member of, or delegate to the United States Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, nor to any benefit that may arise therefrom; but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.
- 12.2 **Governing Law.** The construction validity, performance and effect of this Agreement for all purposes shall be governed by the laws of the United States.
- 12.3 **Entire Agreement.** This Agreement constitutes the entire agreement between the Parties concerning the subject matter hereof and supersedes any prior understanding or written or oral agreement relative to said matter.
- 12.4 **Headings.** Titles and headings of the Sections and Subsections of this Agreement are for the convenience of references only and do not form a part of this Agreement and shall in no way affect the interpretation thereof.
- 12.5 **Amendments.** If either Party desires a modification in this Agreement, the Parties shall, upon reasonable notice of the proposed modification by the Party desiring the change, confer in good faith to determine the desirability of such modification. Such modification shall not be effective until a written amendment is signed by all the Parties hereto by their representatives duly authorized to execute such amendment.
- 12.6 **Addition of Collaborators.** If NOAA determines that the participation of additional Collaborators in this CRADA will increase the likelihood of successfully carrying out the research and development described in the Appendix A – The Research Plan/Statement of Work, NOAA may invite such potential Collaborators to become parties to the CRADA. If the Collaborators accept NOAA's invitation, their participation shall be formalized through a written amendment to the CRADA and they shall be subject to all terms and conditions provided herein.
- 12.7 **Assignment.** Neither this Agreement nor any rights or obligations of any Party hereunder shall be assigned or otherwise transferred by either Party without the prior written consent of the other Party except that the Collaborator may assign this Agreement to the successors or assignees of a substantial portion of the Collaborator's business interest to which this Agreement directly pertains.
- 12.8 **Notices.** All notices pertaining to or required by this Agreement shall be in writing and shall be directed to the signatories.
- 12.9 **Independent Contractors.** The relationship of the Parties to this Agreement is that of independent contractors and not as agents of each other or as joint venturers or partners. Each Party shall maintain sole and exclusive control over its personnel and operations.
- 12.10 **The Use of Name or Endorsements.** Collaborator shall not use the name of NOAA or the Department of Commerce on any advertisement, product or service which is directly or indirectly related to either this

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Agreement or any patent license or assignment agreement which implements this Agreement. By entering into this Agreement, NOAA does not directly or indirectly endorse any product or service provided, or to be provided, by the Collaborator its successors, assignees, or licensees. The Collaborator shall not in any way imply that this Agreement is an endorsement of any such product or service.

- 12.11 **Duration of the Agreement.** It is mutually recognized that the duration of this project cannot be rigidly defined in advance and that the contemplated time periods for various phases of the SoO are only good faith guidelines subject to adjustment by mutual agreement to fit circumstances as the SoO proceeds. In no case will the term of this CRADA extend beyond the term specified in Appendix A §10 unless it is revised in accordance with Section 12.5.
- 12.12 **Full Execution.** The Collaborator acknowledges that this CRADA is not an offer to enter into a contract and cannot unilaterally be made binding. Accordingly, this CRADA shall not be effective until it is fully executed and signed by all parties.
- 12.13 **No promise of Future Contract.** By executing this CRADA, NOAA is not indicating its intent to enter into a future contract(s) with the Collaborator. Any subsequent contracting action by NOAA will be governed by, and subject to, Federal procurement statutes and regulations, including the Federal Acquisition Regulation (FAR).
- 12.14 **Survivability.** The provisions of Articles 6, 7, 8, 11, and 12.9 shall survive the termination of this CRADA.
- 12.15 **GOVERNMENT DISCLOSURE** Nothing in this Agreement bars disclosures to Congress or to an authorized official of an executive agency or the Department of Justice that are essential to reporting a substantial violation of law.

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Collaborator:

Collaborator Project Title:

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives as follows:

Signatory for the Collaborator:

(Name)

(Title)

Date

Mailing Address for Notices:

Signatories for National Oceanic and Atmospheric Administration:

Laboratory Director

Date

Approved by:

Date

Mailing Address for Notices and Informational Copies:
Attention:

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Collaborator:

Collaborator Project Title:

Appendix A The Research Plan/Statement of Objectives

NOAA requires the information listed below. NOAA considers items 8, 10, 12, and 13 proprietary business information.

- 1. Collaboration Project Title.** (Please provide a brief project title that NOAA may use for public disclosure and management reporting.): NOAA Big Data Collaboration
- 2. Collaborator Eligibility.** In order to assure compliance with section 2 of the Federal Technology Transfer Act of 1986 (15 U.S.C. 3710a), the Collaborator must provide the following information to NOAA:

PLEASE CHECK THE APPROPRIATE BOX

- Collaborator certifies that it is not subject to the control of any foreign company or government, and agrees to notify NOAA within thirty days should it become subject to the control of a foreign company or government at any time during this Agreement; or
- Collaborator acknowledges that it is subject to the control of the following foreign company or government (if a company, please specify nationality):

Company Name, Country/Government

Collaborator certifies to NOAA that it is incorporated under the laws of one of the states or territories of the United States; and that it has a manufacturing presence in the United States; and that the foreign government listed above permits United States agencies, organizations, or other persons to enter into cooperative agreements and licensing agreements.

- 3. Protection of Human Subjects.** To assure compliance with 15 CFR Part 27 (the Common Rule for Protection of Human Subjects) and other relevant statutes, regulations and Presidential statements of Policy, the Collaborator must check the appropriate box:

The research to be conducted under this agreement does not involve human subjects within the meaning of 15 CFR Part 27.

The research to be conducted under this agreement involves human subjects within the meaning of 15 CFR Part 27, and Collaborator agrees to take all steps required by NOAA to assure compliance with 15 CFR Part 27. Collaborator certifies that research involving human subjects shall not begin until an appropriate exemption or IRB review is completed and approved by NOAA.

- 4. Protection of Animal Subjects.** To assure compliance with the Animal Welfare Act as amended, and implementing regulations (7 U.S.C. 2131 et seq., 9 CFR Parts 1, 2, and 3), and other Federal statutes and regulations relating to animals, the Collaborator must check the appropriate box:

The research to be conducted under this agreement does not involve animal subjects within the meaning of 7 U.S.C. 2131 et seq. and 9 CFR Parts 1, 2, and 3.

The research to be conducted under this agreement involves animal subjects within the meaning of 7 USC 2131 et seq. and 9 CFR Parts 1, 2, and 3, and Collaborator agrees to take all steps required by NOAA to assure

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Collaborator:

Collaborator Project Title:

compliance with 9 CFR Parts 1, 2, and 3. Collaborator certifies that research involving animal subjects shall not begin until documentation of the appropriate reviews and certifications have been provided to and approved by NOAA.

5. Company Name and Address (city, state, zip code):

PLEASE CHECK THE APPROPRIATE BOX

6. Licensing of Background Inventions belonging to NOAA. CRADA partners may apply for exclusive or nonexclusive licenses in Background Inventions belonging to NOAA. Collaborator hereby states that:

PLEASE CHECK THE APPROPRIATE BOX

Collaborator is not engaged in discussions with NOAA concerning a NOAA Background Invention that is related to the work done under this CRADA.

Collaborator is engaged in discussions with NOAA concerning a NOAA Background Invention that is related to the work done under this CRADA.

7. NOAA's Principal Investigator (please provide name, mail address, and telephone number):
(The NOAA P.I. may change at NOAA management's sole discretion.)

David Michaud
Deputy Director, High Performance Computing and Communications
NOAA Office of the Chief Information Officer
1315 East West Highway
Silver Spring, MD 20910
301-713-9600

8. Collaborator's Principal Investigator(s) (please provide name, mail address, and telephone number):

9. Duration of the CRADA: Three (3) years from its effective date

10. Collaborator Personnel, Services, Facilities, Intellectual Property, Equipment, and/or Funds Contributions are listed as follows:

11. NOAA Personnel, Services, Facilities, Intellectual Property, and/or Equipment Contributions are listed as follows (NOAA management reserves the right to replace these staff members at its sole discretion):

NOAA environmental model output, NOAA personnel, NOAA networks

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Collaborator Project Title:

12. Collaborator's Project Team (please list):

<u>Name</u>	<u>Telephone</u>
_____	_____
_____	_____
_____	_____
_____	_____

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Collaborator:

Collaborator Project Title:

13. The Technical Statement of Objectives (SoO):

In support of the Department of Commerce's "[Open for Business](#)" agenda, the National Oceanic and Atmospheric Administration (NOAA) is seeking to create a vibrant private sector participating in the development and delivery of weather; water; ocean; and climate data, products and services to the public. Through expanded partnerships with private sector and other enterprise partners, the potential exists to develop and market enhanced products and services to the nation. Through the research and development efforts described in this CRADA, NOAA is looking to incite creative uses and innovative approaches that will tap the full potential of its data, spur economic growth, help more entrepreneurs launch businesses and create new jobs.

Currently, only some of NOAA's data is posted on public servers and web sites, especially in the case of large numerical model outputs and large sets of observational data. In many cases these datasets are hosted on multiple public servers which may not use the same standard services and formats. Therefore, it is difficult to find and integrate data from these sources for cross-domain analysis and decision-making. Furthermore, NOAA's large data volumes require users to have substantial network, storage, and computing capabilities of their own in order to interact with and fully exploit the value of these data.

The goal of this CRADA is to collaboratively develop a method for moving NOAA data from NOAA internal systems to a publicly available, cloud-based data repository and - provide equal access to all on equal terms and intelligently position the data near computing, analytic, and other value-added services, creating a new market space for economic growth and job creation. NOAA expects that this technical research and development will support the formation of a working model of a public-private partnership with a self-sustaining technical and procedural infrastructure, with no new net cost to the government.

NOAA has developed a desired framework for how it envisions such a public-private partnership might operate. After significant market research and interaction with industry, NOAA has determined there are many unspecified aspects of this framework which only can be effectively answered through collaborative research, development, and experimentation with industry.

Through this CRADA NOAA intends to engage multiple collaborators, each of which represents industry alliances committed to further researching, developing, specifying, and testing NOAA's desired framework for a public-private partnership. The intent of industry alliances is to enable the opportunity for organizations not named as collaborators on this CRADA to communicate and collaborate with the parties to this CRADA. NOAA anticipates open communication and collaboration through these industry alliances will help to advance the outcomes from this CRADA with more robust and potentially diverse solutions. It is NOAA's expectation that each of the collaborators be willing to transparently collaborate with NOAA to develop and specify industry-standard solutions to address the data extraction process from NOAA, which could then be equally exploited by all parties. For example, if multiple alliances are interested in extracting data off NOAA's operational supercomputer, there would be a common interest to develop one standard interface to extract data from this NOAA resource. This mitigates risk of creating multiple stove-piped interfaces to NOAA's mission systems. This cooperation also enables NOAA's ability to support a greater number of participants. NOAA also expects these alliances will result in a diversity of potential market solutions.

I. Core Expectations

NOAA and the Collaborators are expected to adhere to the following when researching and developing a flexible public-private collaboration solution(s).

1. Position NOAA's data with analytic, compute, and storage capabilities at no net cost to the Government

- 1.1. NOAA will work collaboratively with the Collaborators to prioritize the specific subsets of NOAA's data to be included in solution. NOAA desires the focus be on datasets that are not presently available, or that would benefit from more scalable access methods, or that have high potential for enabling derived products and services. Extracting NOAA's existing publicly available datasets, however, is still welcome.
- 1.2. Solutions should not have an adverse impact on NOAA's mission.
- 1.3. Solutions should provide public access to the original and unaltered NOAA data content.

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- 1.3.1. Data content may be provided to the public using any broadly accessible and open format or formats, which may be or include the original NOAA format.
- 1.3.2. Solutions may charge for marginal costs of distribution but not for the data itself, which must remain available to the public without restriction on use.
- 1.3.3. Solutions that use a cloud platform for data distribution may require that accessors of the data agree to that cloud platform's Terms of Service.
- 1.4. In order to enable the private sector to build business and create new jobs, solutions should not constrain the number of value-added service providers that can produce and provide products based upon NOAA data.
- 2. Provide NOAA's data with equal access on equal terms**
 - 2.1. NOAA will make any NOAA data that have been provided to one collaborator available to all collaborators.
 - 2.2. Collaborators will not utilize (e.g. perform analysis or computation on the data or make value added services) data until it is also made available to the public and value-added service providers through that Collaborator's final cloud-based solution.
 - 2.3. No solution shall provide privileged private access to public data assets.
 - 2.3.1. However, Collaborator may deny access to any person or entity known to be engaging in fraudulent or criminal activities, violating export control laws or agreements, or otherwise using the Collaborator's underlying cloud platform to violate the law.
 - 2.3.2. Solutions may include multiple offerings that provide different levels of access or performance.
 - 2.3.3. Different offerings that provide equivalent value shall be offered on equivalent terms.
- 3. Compliance with federal open data policies**
 - 3.1. Solutions that are developed should be mindful of compliance with Executive Order 13642; and OMB M-13-13 (<https://www.federalregister.gov/articles/2013/05/14/2013-11533/making-open-and-machine-readable-the-new-default-for-government-information> and <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf>)
- 4. NOAA will provide datasets on a best-effort basis.**
 - 4.1. NOAA is providing data sets on an "as-is" basis.
 - 4.2. Inquiries to NOAA regarding datasets will be handled on a best-effort basis.
 - 4.3. NOAA reserves the right to cease generating data and providing specific data sets without notification.
- 5. Data Curation**
 - 5.1. NOAA will remain responsible for retaining and maintaining the scientific stewardship of any data provided to industry partners.
 - 5.2. Data Lifecycle Management**
 - 5.2.1. NOAA will continue to create data that support its missions and products and will be responsible for its data lifecycle management.
 - 5.2.2. NOAA will continue to offer existing data access mechanisms.
 - 5.2.3. NOAA does not intend to compete with the solutions developed by creating value-added services and products other than those already produced or required by NOAA.
 - 5.2.3.1. Ultimately, it is possible that these solutions could provide a much more functional approach to disseminating NOAA data that could displace current NOAA dissemination services, but terminating any of NOAA's existing services has to be done in a manner that complies with NOAA policies which require pre-decisional dialog before such NOAA decisions (see NOAA Administrative Order 216-112 at http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_216/216-112.html).
 - 5.2.4. NOAA's copy of the data shall be considered the "master copy".
 - 5.2.5. Data that NOAA makes available for distribution will be suitable for release into the public domain.
 - 5.2.6. Collaborator will inform end users that the NOAA data is governed by the terms of use set forth at <http://www.weather.gov/disclaimer> or other terms provided by NOAA.
 - 5.3. Data Provenance**
 - 5.3.1. Collaborator will inform end users that the NOAA data originated from NOAA.
 - 5.4. Data Extraction from Existing Externally Facing NOAA Systems**
 - 5.4.1. All data extraction methodologies require the agreement of NOAA.
 - 5.4.2. Collaborators may request data sets from the NOAA data catalog located at <http://data.noaa.gov/>.
 - 5.4.3. Collaborators may "pull" data from public NOAA servers or repositories that already house the data (e.g. external web servers, ftp servers).

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- 5.4.4. If an enhanced level of data extraction from existing externally facing NOAA systems is required, then the Collaborators will be responsible for all costs associated with the enhanced level of extraction.

II. Data Extraction Expectations

NOAA expects the Collaborators to adhere to the following for purposes of extracting data from NOAA's systems, and, as provided in Appendix B, considers only those inventions first actually reduced to practice in support of this section by embodiment in data extraction methodologies to be "CRADA Inventions", and those data and products first produced and then delivered to NOAA in support of this section to be "CRADA Data" and "Research Products," as appropriate, for all instances of use of those terms within this document. "Data extraction methodologies," as used in this section, refers to the interfaces that are specifically built or designed and then delivered under this CRADA that retrieve data from NOAA systems that reside within the NOAA FISMA security boundary and move that data outside the NOAA FISMA security boundary. These methodologies may include workflows, metadata, formats, standards, and server architecture.

1. Data Extraction from Internal NOAA Systems

- 1.1. All data extraction methodologies require approval by NOAA.
- 1.2. Collaborators may request data sets from the NOAA data catalog located at <http://data.noaa.gov/> as well as any other catalogs and listings that NOAA may provide.
- 1.3. Data extraction interfaces that are built and/or designed and delivered to NOAA under this CRADA to retrieve data from NOAA systems that reside within the NOAA FISMA security boundary will be built with non-proprietary open standards and open formats that are royalty-free.
- 1.4. Collaborators will be responsible for all costs associated with extracting data from internal NOAA systems.

III. Additional Possible Objectives

NOAA and the Collaborators may decide to (but are not obligated to) work towards the following research and development objectives during the process of executing this CRADA:

1. Solution Architecture

- 1.1. Solutions are extensible to other data sources (e.g. future NOAA data; data from other federal agencies; and data from non-Governmental sources).
- 1.2. Solutions provide a means to communicate issues about NOAA datasets to the general community.
- 1.3. Solutions provide timely access to NOAA data.
- 1.4. Solutions include lifecycle management for NOAA data stored within the provider's system. (e.g. Acceptable latency in accessing infrequently accessed data.)
- 1.5. If there is significant consumer demand for the original, unaltered form of the data (i.e. the format in which it was provided by NOAA), Collaborator should provide a means for the public to access it in that form.

2. Data Management

- 2.1. Solutions include the capability to refresh and update the NOAA data in the cloud to replace outdated copies.
- 2.2. Solutions incorporate control mechanisms including but not limited to redacting or purging of data that is deemed faulty.
- 2.3. Solutions include the ability for a data user to confirm that the data originated with a NOAA-certified source and has not been tampered with.
- 2.4. Collaborators work with NOAA and each other to identify and document technical lessons learned and recommended practices (e.g. software stacks, configuration options, metadata standards) for ingesting, storing, and handling data in the cloud.
- 2.5. NOAA datasets with a NOAA-assigned Digital Object Identifier (DOI) are attributed or cited using that DOI. Capabilities are developed for derived products to include metadata documenting provenance and lineage.

3. Data Cataloging

- 3.1. Solutions use the NOAA data catalog (data.noaa.gov) to identify data sets.
- 3.2. Collaborators provide feedback and/or assist on any requested enhancements to the NOAA data catalog.

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- 3.3. Solutions provide support for interfacing to the existing (or future) NOAA Data Catalog in the following methods:
 - 3.3.1. Solutions provide reading of the Data Catalog through the Open Geospatial Consortium (OGC) Catalog Service for Web (CSW) interface. NOAA Catalog currently uses CKAN software, which offers a native API, but that is subject to change.
 - 3.3.2. Solutions provide methods to update the Data Catalog for the following outcomes:
 - 3.3.2.1. Providing access information for NOAA datasets available through the cloud platform
- 3.4. The Collaborators and NOAA identify improvements in dataset metadata

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Appendix B Exceptions or Changes to the CRADA

This Agreement shall enter into force 30 days from the date of the last signature of the parties unless disapproved or modified in writing by the appropriate authority. (**NOTE:** This language should only be used if the CRADA is to be signed by a lab director before receiving the concurrence of the approval authority.)

The parties agree that “CRADA Inventions” as defined by Article 2.9 only include those inventions first actually reduced to practice in support of this section by embodiment in data extraction methodologies under item 1 of section II (“Data Extraction Expectations”) of the SoO (Appendix A, Section 13). NOAA acknowledges that Collaborators may be utilizing their own proprietary cloud infrastructures, and NOAA considers technology (excepting the actual data that is provided by NOAA) that is used downstream of the extraction interface defined in section II (“Data Extraction Expectations”) of the SoO of this CRADA to be part of that cloud infrastructure and it will be considered a Background Invention for the purposes of this Agreement.

The parties agree that “CRADA Data” and “Research Products,” as defined by Articles 2.8 and 2.7 respectively, only include recorded information (excluding Proprietary Information) and tangible materials that are first produced and then delivered to NOAA under item 1 of section II (“Data Extraction Expectations”) of the SoO of this CRADA.

The parties further agree that “Background Inventions” as defined by Article 2.1 will include all inventions that are not explicitly included in “CRADA Inventions” as defined above.

The parties agree that use of Collaborator’s cloud platform services outside of the United States to provide data access to end users is acceptable, so long as all direct interfaces to NOAA reside within the United States.

The parties agree that the term “Internal NOAA Systems” referenced in the SoO (Appendix A Section 13) refers to those systems and networks that are located within the NOAA FISMA security boundaries, and that the term “Existing Externally Facing NOAA Systems” used in the SoO refers to servers and systems that are maintained by NOAA and are accessible over the public Internet.

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Appendix C Organization and Management

Management Review Board

A Management Review Board (MRB) will operate during the lifetime of the CRADA. Membership will consist of at least four (4) representatives from NOAA, and the Collaborators' Principal Investigator. Final approval for membership to the MRB will be made by NOAA. The Parties may provide alternate members at meetings of the MRB if regular members are unable to attend, provided that the alternate member has written authorization from the regular member.

NOAA will chair the MRB and will establish a decision process with the members of the MRB. It is the intention of the Government to arrive at decisions through consensus.

The scope of the MRB is to ensure the efforts underway strive to meet the intent of the research goals under this CRADA and to manage aspects of the research which are of common interest to all parties. The MRB will be responsible to ensure that all of the technical interfaces can be leveraged by all members of this CRADA. It is not the intent of the MRB to interfere with the research and development of business processes unique to each data alliance.

The purpose of the MRB is to:

- develop and/or review and approve detailed implementation plans to carry out the R&D topics described in the Statement of Work;
- establish and maintain a management communication and coordination channel with respect to ongoing R&D activities and performance of the Parties under the CRADA;
- review progress and accomplishments under the CRADA; and
- review and make recommendations for approval of any proposals to modify the CRADA, including adding new R&D topics to the Statement of Work.

The NOAA Line Offices and the Collaborators will notify MRB members in a timely manner of potential R&D opportunities of which they are aware that could be pursued under the CRADA.

MRB meetings and/or teleconferences may be held at least four times a year, or more often if needed, at a time and place agreed upon by the Parties.

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Appendix D
NOAA Employee
Conflict of Interest Statement

As used in this Conflict of Interest Statement, the term "Collaborator" refers to the specific organization(s) that is/(are) proposed as a signator(s) of this Cooperative Research and Development Agreement.

I understand that I, my spouse, and other relatives living with me may not engage in activities or relationships that present a real or potential conflict of interest. This includes:

Financial interests that can be directly affected by the Collaborator of this Agreement.

Employment with or promises of employment from the Collaborator.

Nonofficial relationships with the Collaborator that have or may have a real or potential personal benefit.

There may be activities or relationships (past, present, or planned in the future) with the Collaborator other than those listed above that may raise a concern of real or apparent conflicts of interest. Such activities or relationships should be briefly described below. In the event that I become aware of any possible conflict of interest, I must notify my Laboratory Director as soon as possible.

Signature of NOAA Scientist _____ Date: _____

Printed Name: _____ Organization: _____

RETURN FORM TO:
NOAA, Technology Partnerships Office
1305 East West Highway
SSMC 4, Room 7605
Silver Spring, MD 20910
301/713-3565