

Unmanned Aircraft Systems Integration Pilot Program



**MEMORANDUM OF AGREEMENT (MOA)
693KA7-18-T-00020
BETWEEN
FEDERAL AVIATION ADMINISTRATION
AND
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
SNDNDOT
May 07, 2018**

Table of Contents

ARTICLE 1	PARTIES	3
ARTICLE 2	SCOPE.....	3
ARTICLE 3	PRIVACY.....	5
ARTICLE 4	EFFECTIVE DATE AND TERM	6
ARTICLE 5	DELIVERABLES AND REPORTING REQUIREMENTS	6
ARTICLE 6	INTELLECTUAL PROPERTY	6
ARTICLE 7	LEGAL AUTHORITY	14
ARTICLE 8	POINTS OF CONTACT.....	14
ARTICLE 9	FUNDING AND PAYMENT.....	15
ARTICLE 10	APPROVAL OF TEAM MEMBERS	15
ARTICLE 11	CHANGES, MODIFICATIONS	15
ARTICLE 12	TERMINATION	15
ARTICLE 13	ORDER OF PRECEDENCE	15
ARTICLE 14	OBLIGATIONS OF THE PARTIES	16
ARTICLE 15	DISPUTES	18
ARTICLE 16	WARRANTIES	18
ARTICLE 17	INSURANCE	18
ARTICLE 18	LIABILITY	18
ARTICLE 19	LOWER TIER AGREEMENTS	19
ARTICLE 20	CIVIL RIGHTS ACT	19
ARTICLE 21	OFFICIALS NOT TO BENEFIT	19
ARTICLE 22	PROTECTION OF INFORMATION	19
ARTICLE 23	PUBLICITY AND PUBLICATION	19
ARTICLE 24	MISCELLANEOUS ITEMS	20
ARTICLE 25	PAPERWORK REDUCTION ACT.....	20
APPENDICIES		21
APPENDIX A – LEAD PARTICIPANT DELIVERABLE LIST AND REPORTING REQUIREMENTS.....		21
APPENDIX B – SPECIFIC OBLIGATIONS OF THE PARTIES		29
APPENDIX C – ACRONYMS		31

SMALL UNMANNED AIRCRAFT SYSTEMS INTEGRATION PILOT PROGRAM

ARTICLE 1 PARTIES

The parties to this Agreement are the Federal Aviation Administration (FAA) and North Dakota Department of Transportation (each a party and collectively the parties).

ARTICLE 2 SCOPE

a. Purpose

The purpose of this Agreement between the FAA and North Dakota Department of Transportation is to develop and innovate the safe operation of unmanned aircraft systems (UAS) technologies and their use in agriculture, commerce, emergency management and other sectors. This Integration Pilot Program is promoting continued technological innovation and growth to ensure U.S. global leadership in the emerging UAS industry and to safely integrate UAS into the National Airspace System (NAS).

b. Background

FAA Mission - The FAA has authority over the operation of all aircraft, including UAS and has a mandate to ensure public safety in aviation.

Purpose - Pursuant to the Presidential Memorandum for the Secretary of Transportation (Memorandum) dated October 25, 2017 the Secretary of Transportation (“Secretary”), with the Administrator of the FAA (“Administrator”), shall establish no later than 90 days after the date of the Memorandum, a UAS Integration Pilot Program. The objective of this Agreement with State, local, and tribal governments (this includes U.S territories and holdings) is to test and evaluate proposed frameworks for integrating UAS into the NAS within their jurisdictions below 200 feet above ground level, with the possibility of extending that area to 400 feet above ground level, at the Secretary’s discretion.

c. Objective

The objective of the Integration Pilot Program is to:

- address private civilian and public UAS operations;
- test and evaluate the impact and efficacy of a range of models for involvement of State, local, and/or tribal governments, stakeholders, and private sector entities under proposed pilot program frameworks for UAS operations;
- encourage UAS owners and operators to develop and test new and innovative UAS concepts of operations under proposed pilot program frameworks in a safe manner, including operations currently restricted with reduced waivers;
- encourage the involvement of State, local and/or tribal law enforcement agencies as

- partners in pilot projects, including their support of Federal enforcement responsibilities;
- apply lessons learned from existing agreements, waivers granted under 14 CFR Part 107, exemptions granted under section 333 of the FAA Modernization and Reform Act of 2012 (P.L. 112-95), the FAA Focus Area Pathfinder Program, and any other relevant programs; and
 - use the information and experience gained from the pilot program to inform the development of regulations, programs, and plans by the Department of Transportation (“DOT”) and FAA to enable safe, more complex UAS operations, and share this information with other relevant Federal departments and agencies.

Considerations for such objectives also include:

- economic, geographic, and climatic diversity of the selected jurisdictions in the Program as a whole;
- diversity of the proposed models of involvement by State, local, and tribal governments in the Program as a whole;
- diversity of the UAS operations to be conducted in the Program as a whole;
- location of ground infrastructure;
- commercial objectives that may serve the public interest as a result of further integration of UAS into the NAS;
- commitment of State, local, and tribal governments and UAS operators to addressing safety, security, competition, privacy, and civil liberties concerns;
- community involvement in, and support for, participation in the Program; and
- the following policy objectives:
 - enhancing transportation safety;
 - using radio spectrum efficiently and competitively;
 - promoting innovation and economic development;
 - enhancing energy efficiency;
 - improving workplace safety;
 - improving emergency response and search and rescue functions;
 - respecting public safety requirements; and
 - respecting homeland and national security requirements.

d. General Requirements

The program performed under this Memorandum of Agreement must be performed in accordance with ARTICLE 14 APPENDIX B – SPECIFIC OBLIGATIONS OF THE PARTIES and its associated APPENDIX B. Any modifications to the MOA will be by mutual

agreement between the parties and will be incorporated into this Agreement by a formally executed written amendment. APPENDIX C – ACRONYMS contains a list of acronyms.

e. Roles and Responsibilities

Parties are bound by duty of good faith and best effort in achieving the goals of the Agreement.

f. Type of Agreement

This Agreement is an “other transaction” authorized by 49 USC Section 106(l)(6) and is not a procurement contract, grant or cooperative agreement. Each party acknowledges that both parties participated in the negotiation and drafting of this MOA and any amendments/attachments hereto, and that, accordingly, this MOA shall not be construed more stringently against one party than against the other. This MOA is not intended to create, nor shall it be construed as, a partnership, corporation, joint venture, or other business organization. Each party acknowledges that this MOA shall not be construed as a procurement contract, grant, cooperative contract, or agreement to certify or acquire any technology developed or researched as part of the activities conducted hereunder.

ARTICLE 3 PRIVACY

a. Privacy Policies

In accordance with applicable Privacy Laws, the State, local or tribal government Lead Participant must:

- (i) Have privacy policies governing all activities conducted under the Agreement, including the operation and relevant activities of the UAS authorized by the Lead Participant;
- (ii) Make the privacy policies publicly available;
- (iii) Have a mechanism to receive and consider comments from the public on the privacy policies;
- (iv) Conduct an annual review of operations to verify compliance with stated privacy policy and practices and share those outcomes annually in a public forum with an opportunity for public feedback;
- (v) Update the privacy policies as necessary to remain operationally current and effective; and
- (vi) Ensure the requirements of the privacy policies are applied to all operations conducted under this Agreement.

The Lead Participant’s privacy policies should be informed by Fair Information Practice Principles.

b. Compliance with Applicable Privacy Laws

For purposes of this Agreement, the term “Privacy Law” shall mean:

- (i) A law, order, regulation, or rule of an administrative or legislative government body with jurisdiction over the matter in question, or
- (ii) A ruling, order, decision or judgment of a court with jurisdiction over the matter in question regarding the protection of an individual’s right to privacy.

The Lead Participant and its team members must operate in accordance with all applicable Privacy Law.

If the U.S. Department of Justice or a State's law enforcement authority files criminal or civil charges over a potential violation of a Privacy Law, the FAA may take appropriate action including suspending or modifying this MOA until the proceedings are completed. If the proceedings demonstrate the operation was in violation of the Privacy Law, the FAA may terminate this MOA.

c. Change in Law

If during the term of this Agreement a Privacy Law comes into effect that may have an impact on UAS, such Privacy Law is relevant to the MOA and the FAA may update or amend the Agreement to reflect these changes. Regardless of whether the MOA has been updated or amended, the Lead Participant will comply with all current and applicable Privacy Laws.

d. Transmission of Data to the FAA

The Lead Participant must not provide or transmit to the FAA or its designees any data other than the data specifically requested by the FAA pursuant to Article 5 of this Agreement.

e. Other Requirements

The Lead Participant must:

- (i) Maintain a record of all UAS flight operations; and
- (ii) Have a written plan that applies to all Team Members for the use and retention of data collected by the UAS.

ARTICLE 4 EFFECTIVE DATE AND TERM

The effective date of this agreement is the date on which the last party (FAA) signs. The MOA will be in effect for three (3) years from the date of the Presidential Memorandum for the UAS Integration Pilot Program.

ARTICLE 5 DELIVERABLES AND REPORTING REQUIREMENTS

The Lead Participant agrees to deliver to the FAA certain "data" deliverables at no cost to the FAA (the "Data Deliverables"). The term "data" is defined in Article 6. The Data Deliverables are specified in APPENDIX A – LEAD PARTICIPANT DELIVERABLE LIST AND REPORTING REQUIREMENTS.

The exact data, the means to transfer the data, and its due date(s) will be specified, as required.

ARTICLE 6 INTELLECTUAL PROPERTY

a. Rights to Intellectual Property Generated with Government Funding

If the Government elects to fund work under this Agreement, the parties must issue a written modification to this Agreement that must specify the intellectual property rights for that work.

b. Rights to the Data Deliverables

Government requires certain licenses to the Data Deliverables. The applicable licenses/data rights to the Data Deliverables are specified in Appendix A.

c. Other Data

All data will be provided to the Government at no cost. The parties must agree in writing to the rights it assigns to the Government to that data.

d. Data Markings

The Lead Participant must place a legend or other appropriate marking(s) on all data delivered to the Government under this Agreement. The markings must refer to this Agreement and accurately state the rights the Government's rights to that data. The Government will have unlimited rights in all unmarked data delivered under this Agreement.

e. Definitions

"Computer software" means:

- (i) Computer programs that comprise a series of instructions, rules, routines, or statements, regardless of the media in which they are recorded, that allow or cause a computer to perform a specific operation or series of operations; and
- (ii) Recorded information comprising source code listings, design details, algorithms, processes, flow charts, formulas, and related material that would enable the computer program to be produced, created, or compiled.

Computer software does not include computer databases or computer software documentation.

"Computer software documentation" means owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

"Data" means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing, or management information.

"Government Purpose" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive acquisition by or on behalf of the Government but do not include the rights to use, modify, reproduce, release, perform, display, or disclose data for commercial purposes or authorize others to do so.

"Government Purpose Rights" means the rights to: Use, modify, reproduce, release,

perform, display, or disclose data within the Government without restriction; and, Release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data for government purposes.

“Proprietary Data” means data developed exclusively at private expense and outside of any Government contract, grant, or cooperative agreement.

“Technical data” means recorded information (regardless of the form or method of the recording) of a scientific or technical nature (including computer databases and computer software documentation). This term does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration. The term includes recorded information of a scientific or technical nature that is included in computer databases.

“Unlimited rights” means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

a. Rights in Data

1. *Rights in Proprietary Data.* The Government will have only such rights in properly marked Proprietary Data that have been negotiated and agreed to in writing prior to delivery of that Proprietary Data. A legend identifying the Proprietary Data must be placed by the Lead Participant on that data that states the rights agreed to between the Government and the Lead Participant prior to delivery to the Government. The Government will have unlimited rights in all data delivered under this MOA that does not bear the legend agreed to between the parties.
2. *Rights in Data First Produced Under this MOA.* The Government will have Government Purpose Rights in all data developed by the Lead Participant with mixed funding, or exclusively at Government expense. All data delivered with Government Purpose Rights will be marked with an appropriate legend identifying the data prior to delivery to the Government. The appropriate legend identifying data delivered with Government Purpose Rights will be negotiated between the parties prior to delivery. The Government will have unlimited rights in all data delivered under this MOA that does not bear the legend agreed to between the parties.

b. Rights in Inventions (Patent Rights--Ownership by the Lead Participant) are applicable to this MOA.

Definitions as used in this clause –

“Invention” means any invention or discovery that is or may be patentable or otherwise protectable under title 35 of the United States Code, or any variety of plant that is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321, *et seq.*).

“Made” means –

- (i) When used in relation to any invention other than a plant variety, the conception or first actual reduction to practice of the invention; or
- (ii) When used in relation to a plant variety, that the Lead Participant has at least tentatively determined that the variety has been reproduced with recognized characteristics.

“Nonprofit organization” means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a State nonprofit organization statute.

“Practical application” means to manufacture, in the case of a composition of product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms

“Subject invention” means any invention of the Lead Participant made in the performance of work under this contract.

c. Lead Participant's Rights

1. Ownership.

The Lead Participant may retain ownership of each subject invention throughout the world in accordance with the provisions of this clause.

2. License.

- (i) The Lead Participant must retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, unless the Lead Participant fails to disclose the invention within the times specified in paragraph (c) of this clause. The Lead Participant's license extends to any domestic subsidiaries and affiliates, within the corporate structure of which the Lead Participant is a part, and includes the right to grant sublicenses to the extent the Lead Participant was legally obligated to do so at contract award. The license is

transferable only with the written approval of the agency, except when transferred to the successor of that part of the Lead Participant's business to which the invention pertains.

- (ii) The Lead Participant's license may be revoked or modified by the agency to the extent necessary to achieve expeditious practical application of subject invention in a particular country, in accordance with procedures at 37 CFR Part 404.

d. Lead Participant's Obligations

1. The Lead Participant must disclose in writing each subject invention to the Contracting Officer within 2 months after the inventor discloses it in writing to Lead Participant personnel responsible for patent matters. The disclosure must identify the inventor(s) and this contract under which the invention was made. It must be sufficiently complete in technical detail to convey a clear understanding of the subject invention. The disclosure must also identify any publication, on sale (i.e. sale or offer for sale), or public use of the subject invention or whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication. In addition, after disclosure to the agency, the Lead Participant must promptly notify the Contracting Officer of the acceptance of any manuscript describing the invention for publication, and any on sale or public use.
2. The Lead Participant must elect in writing whether or not to retain ownership of any subject invention by notifying the Contracting Officer within 2 years of disclosure to the agency. However, in any case where publication, on sale, or public use has initiated the 1-year statutory period during which valid patent protection can be obtained in the United States, the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.
3. The Lead Participant must file either a provisional or non-provisional patent application or a Plant Variety Protection Application on an elected subject invention within 1 year after election. However, in any case where a publication, sale, or public use has initiated the 1- year statutory period during which valid patent protection can be obtained in the United States, the Lead Participant must file the application prior to the end of the statutory period. If the Lead Participant files a provisional application, it must file a non-provisional application within 10 months of the filing of the provisional application. The Lead Participant must file patent applications in additional countries or international patent offices within either 10 months of the first filed patent application (whether provisional or non-provisional) or 6 months from the date permission is granted by the Commissioner of Patents to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

4. The Lead Participant may request extensions of the time for disclosure, election, or filing under subparagraphs (c) (1), (c)(2), and (c)(3) of this clause.

e. Government Rights

1. Ownership. The Lead Participant must assign to the agency, upon written request, title to any subject invention.

- (i) If the Lead Participant fails to disclose or elect ownership to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain ownership; provided, that the agency may request title only within 60 days after learning of the Lead Participant's failure to disclose or elect within the specified times.
- (ii) In those countries in which the Lead Participant fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if the Lead Participant has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of the agency, the Lead Participant must continue to retain ownership in that country.
- (iii) In any country in which the Lead Participant decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.

2. License. If the Lead Participant retains ownership of any subject invention, the Government must have a nonexclusive, nontransferable, irrevocable, paid-up license to practice, or have practiced for or on its behalf, the subject invention throughout the world.

f. Lead Participant action to protect the Government's interest.

1. The Lead Participant must execute or to have executed and promptly deliver to the agency all instruments necessary to:
 - (i) Establish or confirm the rights the Government has throughout the world in those subject inventions in which the Lead Participant elects to retain ownership; and
 - (ii) Assign title to the agency when requested under paragraph (d) of this clause and to enable the Government to obtain patent protection and plant variety protection for that subject invention in any country.
2. The Lead Participant must require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and

in the Lead Participant's format, each subject invention in order that the Lead Participant can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information required by subparagraph (c)(1) of this clause. The Lead Participant must instruct such employees, through employee agreements or other suitable educational programs, as to the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

3. The Lead Participant must notify the Contracting Officer of any decisions not to file a non-provisional patent application, continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response or filing period required by the relevant patent office.
4. The Lead Participant must include, within the specification of any United States non-provisional patent or plant variety protection application and any patent or plant variety protection certificate issuing thereon covering a subject invention, the following statement, "The invention was made with Government support under (identify the contract) awarded by (identify the agency). The Government has certain rights in the invention."

g. Reporting on utilization of subject inventions.

The Lead Participant must submit, on request, periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining utilization of the subject invention that are being made by the Lead Participant or its licensees or assignees. The reports must include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Lead Participant, and such other data and information as the agency may reasonably specify. The Lead Participant also must provide additional reports as may be requested by the agency in connection with any march-in proceeding undertaken by the agency in accordance with paragraph (h) of this clause.

The Lead Participant must also mark any utilization report as confidential/proprietary to help prevent inadvertent release outside the Government. As required by 35 U.S.C. 202(c)(5), the agency will not disclose such information to persons outside the Government without the Lead Participant's permission.

h. Preference for United States industry.

Notwithstanding any other provision of this clause, neither the Lead Participant nor any assignee must grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the

requirement for an agreement may be waived by the agency upon a showing by the Lead Participant or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States, or that under the circumstances domestic manufacture is not commercially feasible.

i. March-in rights.

The Lead Participant acknowledges that, with respect to any subject invention in which it has retained ownership, the agency has the right to require licensing pursuant to 35 U.S.C. 203 and 210(c), and in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the agency in effect on the date of contract award.

1. Special provisions for contracts with nonprofit organizations. If the Lead Participant is a nonprofit organization, it must -

- (i) Not assign rights to a subject invention in the United States without the written approval of the agency, except where an assignment is made to an organization that has as one of its primary functions the management of inventions, provided, that the assignee will be subject to the same provisions as the Lead Participant;
- (ii) Share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (but through their agency if the agency deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;
- (iii) Use the balance of any royalties or income earned by the Lead Participant with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions for the support of scientific research or education; and,
- (iv) Make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business concerns, and give a preference to a small business concern when licensing a subject invention if the Lead Participant determines that the small business concern has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business concerns; provided, that the Lead Participant is also satisfied that the small business concern has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Lead Participant;

(v) Allow the Secretary of Commerce to review the Lead Participant's licensing program and decisions regarding small business applicants, and the negotiate changes to its licensing policies, procedures, or practices with the Secretary of Commerce when the Secretary's review discloses that the Lead Participant could take reasonable steps to more effectively implement the requirements of paragraph (i)(4) of this clause.

ARTICLE 7 LEGAL AUTHORITY

This Agreement is entered into under the authority of 49 U.S.C. 106(l) and (m) and the FAA Modernization and Reform Act of 2012.

The FAA Modernization and Reform Act of 2012 as passed by Congress and signed by the President authorizes the FAA to establish a program to integrate UAS into the NAS. The FAA is utilizing its Acquisition Management System (AMS) strictly as guidance in the selection process.

ARTICLE 8 POINTS OF CONTACT

- a. FAA Director Unmanned Aircraft Systems (UAS) Integration Office
Federal Aviation Administration
Attn: Earl Lawrence, AUS
490 L'Enfant Plaza, S.W. (Suite 7200)
Washington, DC 20024
Phone: (202) 267-0168
Email: Earl.Lawrence@faa.gov
- b. FAA Program Manager (PM)
Federal Aviation Administration
Attn: Rob Pappas, AUS
490 L'Enfant Plaza, S.W. (Suite 3200)
Washington, DC 20024
Phone: (202) 267-4240
Email: Rob.Pappas@faa.gov
- c. FAA Contracting Officer: (CO)
Federal Aviation Administration
Attn: Gavin Byrne, AAQ-220
490 L'Enfant Plaza, S.W. (Suite 3200)
Washington, DC 20024
Phone: (202) 267-0423
Email: Gavin.Byrne@faa.gov
- d. FAA Contracting Officer Representative (COR):
Federal Aviation Administration
Attn: TBD
490 L'Enfant Plaza, S.W. (Suite 3200)
Washington, DC 20024

Phone: (202) 267-XXX
Email: TBD@faa.gov

- e. Lead Participant Name
TBD Title: Russ Buchholz
Address: 608 E. Boulevard Ave
Phone: 701-328-2561
Email: rjbuchholz@nd.gov

ARTICLE 9 FUNDING AND PAYMENT

The FAA does not currently intend to provide funding for this Agreement. Any costs associated with the performance of this Agreement will be the responsibility of the non-FAA Agreement holder. Each party will be responsible for all of its own costs to perform under this Agreement, and there is no current plan for the transfer of funds between the parties under this Agreement.

Should the parties execute a modification to add funding to this Agreement, it is considered within the scope of this endeavor.

ARTICLE 10 APPROVAL OF TEAM MEMBERS

The Lead Participant must maintain, on the UASIPP Lead Participant Portal, a list of all executed teaming arrangements with team members, outside associates, and/or consultants, required by the Lead Participant in connection with the services covered by this Agreement.

On a quarterly basis the Lead Participant must update the list (including additions, deletions or modifications) on the Portal.

ARTICLE 11 CHANGES, MODIFICATIONS

Changes and/or modifications to this Agreement must be in writing and signed by a FAA CO and an authorized MOA representative at time of award. The Modification must cite the subject Agreement, and must state the exact nature of the Modification. No oral statement by any person shall be interpreted as modifying or otherwise affecting the terms of this Agreement.

ARTICLE 12 TERMINATION

In addition to any other termination rights provided by this Agreement, either party may terminate this Agreement at any time prior to its expiration date, with or without cause, and without incurring any liability or obligation to the terminated party by giving the other party at least thirty (30) days prior written notice of termination. Upon receipt of a notice of termination, the receiving party must take immediate steps to stop the accrual of any additional obligations that might require payment.

ARTICLE 13 ORDER OF PRECEDENCE

This Agreement and its attachments will be read and interpreted as a consistent whole. In the event of any inconsistency between the terms of the Agreement and its attachments, any

inconsistency will be resolved by giving preference in the following order:

- The Agreement
- The Appendices

Some, all, or none of the information contained within the Applicant's submissions may be incorporated into the Agreement at the discretion of the FAA.

ARTICLE 14 OBLIGATIONS OF THE PARTIES

a. Expected Results

A Lead Participant must be authorized by the FAA to facilitate the integration of UAS into the NAS as well as validating processes and procedures. In addition, industry and users must have an authorized/legal flight area to perform safe UAS operations.

b. Constraints

This MOA will remain in effect until October 24, 2020 or until terminated in accordance with Article 12 of this Agreement.

c. Lead Participant Outputs

(i) Economic Baseline Report

Lead Participant must furnish to the specified FAA representative an electronic copy of the Economic Baseline Report.

(ii) Quarterly Report

Lead Participant must furnish to the specified FAA representative an electronic copy of a draft quarterly report detailing the history of flights that occurred during the previous reporting period. The FAA will have 30 days to review the report. The final quarterly report, with FAA requested changes/modifications, must be delivered to the FAA representative within 15 days after receipt of the FAA modifications.

(iii) Annual Report

Lead Participant must furnish to the specified FAA representative an electronic copy of a draft annual report.

(iv) Final Report

To support the requirements for Presidential Reporting, not later than 30 days before the date of the termination of the program, the Lead Participant must report findings and conclusions concerning the Program.

(v) Flight Operations

Safety must be the primary objective during any operation. Lead Participant must operate in accordance with processes and procedures approved by the FAA. The FAA will maintain the right to be present during any UAS operation and the amount of oversight may depend on risk and other factors.

d. Obligations of the Parties**(i) Obligations of the Government**

- a.** The FAA may provide authorization for the Lead Participant. The FAA will assign personnel to provide feedback during all phases of the development of this project, including the requirements, design, implementation, evaluation, and oversight stages.
- b.** The FAA retains the right to conduct oversight of all operations conducted under this agreement, including on-site visits, and has the authority to halt, suspend or modify operations at any time.

(ii) Obligations of Lead Participant

- a.** Lead Participant must provide the leadership and technical expertise for all stages of the development and operation. Lead Participant will be responsible for the development and implementation of processes and procedures for flight operations; proper maintenance; configuration management; and assurance for safe operation.
- b.** Lead Participant must ensure that all program partners operate in accordance with FAA regulations and/or FAA exemptions, waivers, authorizations.
- c.** For mission planning, Lead Participant must access aviation-related internet sites or other appropriate data sources to determine predicted weather. For operations, Lead Participant must have real-time weather monitoring, including air speed, wind direction, and temperature.
- d.** Pilot/observer training requirements must be in compliance with applicable regulations and/or conditions and limitations of exemptions, waivers, and authorizations.
- e.** Lead Participant must collect data in a format agreed upon by FAA and post it to the FAA web-based system.
- f.** The Lead Participant must demonstrate the best safety environment possible. The objective will be to satisfy the FAA and show the extremely improbable case by demonstrating that the total system, taken together, can provide an acceptable reliability.
- g.** Lead Participant must use the FAA system safety process as a guide in its safety activities. It is a formal and flexible top-level process that generally follows the steps in the FAA's Safety Risk Management Order 8040.4B (available at: https://www.faa.gov/documentLibrary/media/Order/FAA_Order_4040.4B.pdf) and includes a systematic approach to process improvement that requires proactively searching for opportunities to improve the process at every step and not simply to identify deficiencies after an undesired event.
- h.** Lead Participant accepts the risk and high consequence decision of the analyses which eventually leads to approved NAS flight. Any accident or incident must be

reported to the FAA and other appropriate government agencies in accordance with current aviation practices and directives.

- i. Lead Participant must be cognizant of, abide by and address all security regulations and laws that apply to UAS IPP operations. Lead Participant must be committed to addressing security concerns and may be required to involve Federal, State, Local and/or Tribal law enforcement agencies as partners in pilot projects. Additional requirements and reporting may also be required to address security concerns regarding the Lead Participant's specific concept of operations and activities. Lead Participant must take necessary and appropriate steps to mitigate risks to public safety and homeland and national security and ensure compliance with relevant laws, regulations, and requests to ensure that Program activities do not interfere with or introduce risk related to national defense, homeland security, or law enforcement operations and missions.

ARTICLE 15 DISPUTES

Where possible, disputes will be resolved by informal discussion between the parties. To the extent any dispute is not resolved by informal discussion, the parties agree to engage the services of the FAA's Office of Dispute Resolution for Acquisitions to provide mediation and other ADR services in a non-binding manner to assist the parties toward resolution. If these efforts are not successful, the FAA Contracting Officer signatory to this Agreement will make the final decision.

ARTICLE 16 WARRANTIES

No Warranty. Except as specifically stated in Article 11 (Changes, Modifications) the FAA makes 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 17 INSURANCE

The Lead Participant must arrange by insurance or otherwise for the full protection of FAA from and against all liability to third parties arising out of, or related to, its performance of this Agreement. The FAA assumes no liability under this Agreement for any losses arising out of any action or inaction by the Lead Participant, its employees, or contractors, or any third party acting on its behalf. The Lead Participant agrees to hold the United States harmless against any claim by third persons for injury, death or property damage arising out of or in connection with its performance under this Agreement.

ARTICLE 18 LIABILITY

Tort Liability of Government. The U. S. Government will not, except for gross negligence, fraud, abuse, or misuse, be responsible for any property of the Lead Participant consumed, damaged, or destroyed in the performance of this Agreement. Any liability of the U.S. Government is determined pursuant to the Federal Tort Claims Act, 28 U.S.C. 2671 et seq.

Personal Injury and Damage to Property. The Lead Participant agrees to save and hold the Government, its officers, agents, and employees harmless from liability of any nature or kind, including costs and expenses, for, or on account of, any or all suits or damages of any character whatsoever resulting from injuries or damages sustained by any person or persons or property by virtue of negligence or omissions on the part of the Lead Participant, its officers, agents, and employees in the performance of this Agreement.

ARTICLE 19 LOWER TIER AGREEMENTS

The Lead Participant must include Articles 6 – Intellectual Property through 23 – Publicity and Publication suitably modified in all lower tier Agreements, regardless of tier.

ARTICLE 20 CIVIL RIGHTS ACT

The Lead Participant must comply with Title VI of the Civil Rights Act of 1964 relating to nondiscrimination in Federally-assisted programs and provide a certification to that effect.

ARTICLE 21 OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or resident commissioner, will be admitted to any share or part of this Agreement, or to any benefit arising from it. However, this clause does not apply to this contract to the extent that this contract is made with a corporation for the corporation's general benefit.

ARTICLE 22 PROTECTION OF INFORMATION

The parties agree that they must take appropriate measures to protect proprietary, privileged, or otherwise confidential information that may come into their possession as a result of this Agreement.

The parties agree to protect from release information that is proprietary, privileged, or otherwise confidential to the extent permitted by law. The FAA will protect data and or information in its possession in accordance with requirements and procedures set forth under the Freedom of Information Act, 5 U.S.C. § 552, and any other applicable law, including but not limited to the Trade Secrets Act, 18 U.S.C. § 1905. Each party agrees to mark data or information as “proprietary” or “confidential,” in a manner that is immediately apparent. Each party shall maintain, and to the extent necessary reproduce, any and all restrictive markings set forth on, applied to, and/or associated with, the information provided by the other party.

The FAA will mark materials requiring protection with the statement “SENSITIVE - NOT FOR DISTRIBUTION”. The Lead Participant may not distribute or discuss (verbally or in writing) Sensitive Information with anyone not a party to this Agreement except for the Lead Participant’s employees, agents, advisors, or team members, or to the extent required by law, including state and/or local Freedom of Information-type law.

ARTICLE 23 PUBLICITY AND PUBLICATION

The Lead Participant must not quote any FAA official or make any representations on behalf of the

FAA in any publicity or press releases without prior FAA approval. The Lead Participant must notify the FAA at least one (1) day prior to publication of publicity and press releases for any FAA-funded activities.

ARTICLE 24 MISCELLANEOUS ITEMS

If additional terms and conditions are required to be included to address work that may be required under this MOA they will be included by formal bi-lateral modification to this Agreement.

The FAA may provide Government property to the MOA awardee for the purpose of research. The Government property may be provided at -\$0- or at a specified lease amount. In either case the FAA will provide a letter of agreement to the Lead Participant which will contain the conditions of use and other stipulations that may be required.

ARTICLE 25 PAPERWORK REDUCTION ACT

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA may, at its discretion, reduce or adjust any paperwork and other information collection requirements in this Agreement as the FAA deems appropriate to comply with the Paperwork Reduction Act.

AGREED:

North Dakota Department of Transportation

Federal Aviation Administration

BY: Russ Buchholz

BY: Garin Byrne

TITLE NDDOT UAS Program Administrator

TITLE: Contracting Officer

SIGNATURE: R. J. Buchholz

SIGNATURE: Garin Byrne

DATE: 5-16-18

DATE: 5/18/2018

APPENDICIES

APPENDIX A – MOA AWARDEE DELIVERABLE LIST

APPENDIX B - OBLIGATIONS OF THE PARTIES

APPENDIX C – ACRONYMS

APPENDIX A – LEAD PARTICIPANT DELIVERABLE LIST AND REPORTING REQUIREMENTS

1 INTRODUCTION

The Unmanned Aircraft Systems Integration Pilot Program MOA Lead Participant List of Deliverables is the register of deliverable data items required in the Memorandum of Agreement (MOA). The MOA Lead Participant List of Deliverables specifies electronic addresses if electronic data delivery is required. Forms may be required to convey data item requirements.

There are several types of data items on the MOA Lead Participant List of Deliverables to be submitted. These include, but are not limited to results of study; research; engineering design and development; reports of performance; results of status meetings; records of ongoing deliveries and flight operations; community response; and reports on effect on the environment. Data item deliveries are key factors in demonstrating successful performance. In some instances, the number of data items and the level of detail are negotiable with the government. Once approved, these data items become the specifications for continuing operations.

Under the MOA for the UAS Integration Pilot Program, the FAA requires that the Lead Participant respond to questions on its economic baseline and goals. This information will be used throughout the Program to assist in development of regulations, policies and standards.

Additionally, the FAA requires that the Lead Participants provide reports on a quarterly and annual basis as well as at the termination of the project or termination of Partnership operations.

2 NOTIFICATION OF THE LOCAL COMMUNITY

The Lead Participant must establish a means to meaningfully and effectively notify the local community(s) about the proposed operations and any related limitations on UAS operations within the local airspace, and to allow the community to provide feedback. The Lead Participant will, at a minimum, place this information on a publically accessible website, which will be referenced on the FAA website: <https://www.faa.gov/uas/>

3 REPORTING REQUIREMENTS

The FAA will collect both quantitative and qualitative data over the life of the Program. Examples of reporting requirements are provided below.

3.1 Data Reporting

The Lead Participant is required to provide the FAA with operating data. The data will be reported electronically via a website database specifically developed for the purpose of the Lead Participant. Flight Data is an example of the flight data that will be collected over the life of the Pilot Program.

3.2 Reporting Requirements

The Lead Participant is required to provide the FAA with reports on the progress of the project. These reports will be used to assist the FAA in the development of regulations, standards and policies. Table 1: Lead Participant Reporting Requirements outlines the reporting requirements for the Lead Participant.

Table 1: Lead Participant Reporting Requirements

Type of Report	Period	Report Due Date	Responses, Modifications from FAA	Final Report Due
Economic Baseline Report		14 days after signing MOA	14 days after receipt of Report	14 days after receipt of FAA comments
Quarterly Operating Report	October 1 – December 31	January 31	Within 30 days from Report Due Date	Within 15 days of FAA Response
Quarterly Operating Report	January 1 – March 31	April 30		
Quarterly Operating Report	April 1 – June 30	July 31		
Quarterly Operating Report	July 1 – September 30	October 31		
Annual Operating Report	12 Months ended September 30	October 31	N/A	N/A
Final Report	Period of MOA Partnership Operation	30 days prior to termination of the MOA	N/A	Update of report to close of operation 7 days after termination of the MOA

3.2.1 Economic Baseline Report

The Economic Baseline Report is due to the FAA within two (2) weeks of signing the MOA. Information to be submitted in the Economic Baseline Report is in Economic Baseline Report.

3.2.2 Quarterly Reports

Quarterly reports are due to the FAA within one (1) month after the end of the calendar quarter as shown in Table 1: Lead Participant Reporting Requirements. This report sets forth the activities of the Lead Participants during the quarter. The FAA shall have 30 days to review the report. The final quarterly report, with any FAA requested changes, shall be delivered to the FAA

representative within 15 days after receipt of the FAA requested changes. Information to be submitted in the Quarterly Reports is in Quarterly Report.

3.2.3 Annual Reports

The annual reports is due to the FAA within one (1) month after September 30 Table 1: Lead Participant Reporting Requirements. This report sets forth the activities, findings and conclusions of the Partnership Program during the year. Information to be submitted in the Annual Reports is in Annual Report.

3.2.4 Final Report

The Lead Participant's final report is due 30 days prior to the termination of the MOA. An update to the final report is due seven days after termination of the MOA to include the last 30 operating days. This report sets forth the findings and conclusions of the Partnership Program. In the event that a Lead Participant ceases operations prior to this date, the Lead Participant must submit a final report within 30 days of the cessation of operations. Information to be submitted in the Final Report is in Final Report

3.2.5 Data Rights

Unless the parties mutually agree otherwise, the Government will have Government Purpose Rights in the reports and other data deliverables required in this Appendix and in any other portion of this Agreement, subject to Article 6-Intellectual Property.

4 Flight Data

The following flight data will be required for each flight conducted by the Pilot Program. This list of data will be augmented and tailored to the specific Pilot Program objectives after the MOA award.

- Mission identification;
- Applicable type of operation(s) e.g. operation over human beings, beyond visual line of sight, package delivery etc.
- Environmental conditions e.g. meteorological conditions, topography, population/structure density etc.
- Aircraft characteristics e.g. make, model, weight, (fuel type and consumption, if applicable), aircraft noise levels in operational conditions, e.g., takeoff, hover, level flyover etc., expressed in dBA max or SEL. modifications etc.
- UAS telemetry e.g. location, altitude, time of day, flight time etc.
- Deviations from planned navigation;
- Any encountered hazards during mission and method used to avoid hazard.
- Any accidents or incidents that meet NTSB or Part 107 criteria for unmanned aircraft systems.

5 Economic Baseline Report

In accordance with Appendix B of the MOA, the Lead Participant must review their Volume III response to the SIR and provide a brief description for each type of UAS concept/project and the associated missions¹ the partnership intends to conduct under the pilot program as Section 1 of its Economic Baseline Report. As part of this description, the Lead Applicant must prioritize the proposed concepts/projects. Each concept/project and mission must be listed in the order of intended conduct with an estimated time-frame for performance and identification of the team members expected to participate in each mission.

In addition to providing the prioritized concepts/projects information above, the Lead Participant must complete the following tables as part of its Economic Baseline Report.²

Table 1 captures basic economic/operational data by prioritized mission type. The completed table must include a brief description of each mission, the 6-digit NAIC code, the number of expected annual missions per mission type, the number of hours per mission, and hours per pilot per mission.

¹ UAS Mission – To ensure proper evaluation of program objectives, the Department needs to compare the overall missions that UAS operators will undertake through this program and be able to measure how those missions change the economics of existing activities in the economy. Participants in the UAS Integration Pilot Program should define their UAS Mission as a discrete activity with an economic objective (e.g., inspection of large bridge). These discrete activities may involve a series of UAS flights, but they must involve at least one launch and landing of a UAS vehicle to perform a task over a specified amount of time. For each UAS Mission, please specify the number of UAS launches and landings per defined unit of activity, and specify the time period of the activity which expect to use to evaluate the completion of that activity for purposes of achieving the Partnership’s objectives. In cases where the use of UAS replaces an existing activity, the definitions and specifications for the UAS mission should align with those you use to plan and evaluate the same activity without using UAS technology (e.g. number of packages delivered in a specified time frame over a specified geography).

² The Lead Participant will be provided with instructions for uploading this report into the UAS IPP Lead Participant Portal. The file naming convention to be used on the report is comprised of XXXXXXXX (the seven letter designation of the Lead Participants found on the homepage of the web portal); “EBR” and the date of the MOA (YYYYMMDD): XXXXXXXXEBR2018MMDD.pdf.

Table 1: Economic Baseline Data

Mission ^{1/}	6-digit NAIC Code	Purpose: Commercial or Public (e.g., safety or security)	Estimated annual number of missions	Total Number of take-offs & landings per mission	Estimated hours per mission	Estimated hours per pilot
Mission 1 (specify)						
Mission 2 (specify)						
...						

^{1/} To ensure proper evaluation of program objectives, the Department needs to compare the overall missions that UAS operators will undertake through this program and be able to measure how those missions change the economics of existing activities in the economy. Participants in the UAS Integration Pilot Program should define their UAS Mission as a discrete activity with an economic objective (e.g., inspection of large bridge). These discrete activities may involve a series of UAS flights, but they must involve at least one launch and landing of a UAS vehicle to perform a task over a specified amount of time.

Table 2 captures whether each type of mission is an entirely new economic activity that could not be accomplished without a UAS or is the UAS mission replacing another means of accomplishing the same outcome (e.g., bridge inspections).

If the mission activity is considered new, the Lead Participant must describe how the economic benefit is expected to accrue to private/public sector partners, the local community, and society.

If the UAS is replacing more expensive, less safe, and/or less efficient ways of accomplishing an existing mission, the Lead Participant must provide a description of what activity will be replaced by the UAS, along with estimated unit cost savings (i.e., reduced man-hours, fuel savings, capital costs, maintenance, physical depreciation, etc.). Estimated cost saving should be calculated as the difference between the cost of the mission when performed by a UAS versus the cost of the same mission performed by an alternative method. That is, only net cost savings should be reported.

Table 2: New or Existing Activity

Mission	New Activity	Existing Activity	
	Economic Benefit (describe)	How was the Activity Originally Accomplished? (describe)	Anticipated Annual Cost Savings
Mission 1 (Specify)			Man-hours: Fuel(\$): Annual Capital Costs(\$): Maintenance (\$): Physical Depreciation(\$): Etc.:
Mission 2 (Specify)			
...			

In summary, the Economic Baseline Report shall include the following and all additional information needed to fully address the requirements above:

- Description and prioritization of concepts/projects and associated missions
- Table 1 – Economic Baseline Data
- Table 2 – New or Existing Activity Data

6 Quarterly Reports

Lead Participants are required to submit a Quarterly Reports in accordance with the Table 1: Lead Participant Reporting Requirements.

The following outline should be followed on the UAS Lead Participants Quarterly Reports:

1. Executive Summary: Summarizes the quarterly activity for the Lead Participant.

2. **Accomplishments:** Discuss specific achievements made during the quarter.
3. Provide an overview of each mission conducted within the quarter: a description of the mission, how the mission was conducted, and why the mission was conducted. Include relevant flight statistics that are helpful to understanding the scope of each mission; such as number of flights and hours.
4. Positive or negative, discuss any unexpected or unintended outcomes from missions conducted during the quarter, including impact to the environment.
5. **Lessons learned:** Knowledge or understanding distilled from conducted missions that will influence future missions to reduce or eliminate potential failures and mishaps, or reinforce a positive result.
6. **Community Outreach:** Summary of Lead Participant's efforts to educate the public, law enforcement, students, etc. about safe UAS operations or other community outreach and any feedback received from interested community parties.
7. **Collaboration:** Description of cooperation between the Lead Participant and other entities with similar interests, and the sharing of ideas and research results that further the goal of UAS integration into the NAS.
8. **Improvement in safety risk management procedures:**
 - a. Pilot training
 - b. Maintenance
 - c. Hardware
 - d. Airworthiness
 - e. Airspace
 - f. Operations
9. **Future Activities:** Describe future activities planned for the next two quarters by the Lead Participant.
10. **Five Bullet Points:** Frequently, the UAS Lead Participants Program Office needs to provide talking points and other information on the Lead Participant and Partnership. This is generally done on a very quick turnaround. What five items would you want reported about your Program?
11. **Challenges:** Identify those areas that impede the UAS Lead Participant's performance. Of special interest is identification of areas that the UAS Lead Participants Program Office could assist in resolving.
12. **Other Discussion**

7 Annual Reports

Lead Participants are required to submit Annual Reports in accordance with the Table 1: Lead Participant Reporting Requirements.

1. Provide a brief description for each type of UAS mission¹ the Partnership conducted in the past year under the Pilot Program. Was the mission limited to commercial use or does it include a public benefit (or purpose) element such as safety or security? If so, explain. For each type of mission, the Lead Participants must include the appropriate 6-digit NAIC code.
2. For each type of mission conducted in the past year under the pilot program, describe whether this mission was an entirely new economic activity that could not be accomplished without a UAS or was the UAS being used to replace more expensive, less efficient ways of accomplishing the same mission (e.g., bridge inspections).
 - a. If the mission activity was considered new activity within the past year, describe the economic benefit that accrued to the private/public sector partners, the local community, and society.
 - b. If a UAS replaced a more expensive, less safe, and/or less efficient way of accomplishing a mission, provide a description of what activity was replaced by the UAS along with unit cost savings (i.e., reduced man-hours, fuel savings, maintenance, physical depreciation, etc.) for each mission type and an estimate of the number of such missions on an annual basis.
3. If necessary, provide a revision to the economic baseline based on planned activities for the next year.

8 Final Report

Lead Participants are required to submit a Final Report in accordance with the Table 1: Lead Participant Reporting Requirements. **Error! Reference source not found..**

The following outline should be followed in the Final Report:

1. Over the life of the Pilot Program, provide a brief description for each type of UAS mission that was conducted by the Partnership. Was the mission limited to commercial use or did it include a public benefit (or purpose) element such as safety or security? If so, explain. For each type of mission over the life of the pilot program, the Lead Participants must include the appropriate 6-digit NAIC code.
2. For each type of mission conducted over the life of the pilot program, describe whether the mission was an entirely new economic activity that could not be accomplished without the use of a UAS or was the UAS being used to replace more expensive, less efficient ways of accomplishing the same mission (e.g., bridge inspections).

- a. For all UAS activity describe the economic benefit or burden that each Partnership Participate incurred, over the life of the pilot program. Were the results expected? How do the results compare to the economic baseline?
- b. For new UAS related economic activity describe the economic benefit that accrued to the private/public sector partners, the local community, and society?
- c. If the UAS replaced more expensive, less safe, and/or less efficient ways of accomplishing the same task, describe what activities were replaced along with unit cost savings (i.e., reduced man-hours, fuel savings, maintenance, physical depreciation, etc.) On an annual basis, for each mission type estimate the number of UAS operations over the life of the pilot program.

APPENDIX B – SPECIFIC OBLIGATIONS OF THE PARTIES

Lead Participant: North Dakota Department of Transportation

Lead Participation shall be in accordance with the terms of this Memorandum of Agreement (MOA) and consistent with the (**North Dakota Department of Transportation**) proposal submittal (concluding 1/4/2018) to the FAA Unmanned Aircraft System Integration Pilot Program (UAS IPP) Portal in response FAA solicitation / Screening Information Request (SIR) DTFWA-18-R-00001.

UAS IPP Project Scope Prioritization and Refinement:

The lead applicants selected for award identified a vast number of operations, technologies and industry(s) within their Volume III – Airspace and Concepts of Operations (CONOPS). Therefore, your project(s) performance will require prioritization of concepts/projects in a manner such that the mutual resources of the UAS IPP Lead Participants, associated team members and FAA are sufficiently available to be effective in accomplishing the objectives of the program and the Presidential Memorandum. Your proposed concepts/projects, associated missions, sequencing of events and the program approach to the specific scope of performance requires review, refinement and prioritization.

Therefore, to be included within the initial deliverable (The Economic Baseline Report, Appendix A, Section 4), which is due 14 days after the MOA is signed, and in response to question 1 thereto, please submit:

- *A brief description of each concept/project.*
- *For each concept/project, the UAS missions the partnership intends to conduct under the pilot program. Concepts/projects and associated missions must be prioritized by the Lead Participant in order of importance to the Lead Applicant.*
- *For each concept/project, specify the estimated time-frame (start and completion dates) for*

each of the associated missions.

- *For each concept/project, the team members expected to support each of the associated missions.*

The prioritization and performance of concepts/missions under this MOA is subject to FAA review and approval.

APPENDIX C – ACRONYMS

AL	lethal area
AMS	Acquisition Management System
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
BVLOS	beyond visual line of sight
B	buffer
C2	Control and Command
CE	casualty expectation
CFR	Code of Federal Regulations
CG	center of gravity
CO	Contracting Officer
COA	Certificate of Authorization
COR	Contracting Officer Representative
CS	control station
DHS	Department of Homeland Security
DoD	Department of Defense
DS	distance to stop
DG	distance to glide
ExCom	Executive Committee
FAA	Federal Aviation Administration FMECA failure mode, effects, and critical analysis
FMRA	FAA MODERNIZATION and REFORM ACT
FRR	flight readiness review
FTA	fault tree analysis
FTC	Federal Trade Commission
FTS	flight terminal system
GCS	Ground Control Stations
GPS	Global Positioning System
IFR	instrument flight rules
INS	Inertial Navigation System
ISRB	Independent Safety Review Board
L	length
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
ODRA	Office of Dispute Resolution for Acquisition
OTA	Other Transaction Authority
OT	Other Transaction
PD	population density
PF	probability of failure
PIC	Pilot in Command
R&D	research and development
RFC	Request for Comments
RFI	Radio Frequency Interference

TBD	to be determined
TCAS	traffic alert and collision avoidance system
TFM	traffic flow management
UA	unmanned aircraft
UAS	unmanned aircraft systems
UASTSS	Unmanned Aircraft Systems Test Site Selection
VLOS	visual line of sight
VNE	velocity not to exceed
W	width