



# UNITED STATES AIR FORCE

## COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA)

*between*

**AIR FORCE RESEARCH LABORATORY**

*and*

**WRIGHT STATE APPLIED RESEARCH CORPORATION**

“Ohio Federal Research Network Flight Testing and Demonstrations”

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## SECTION I: STANDARD TERMS AND CONDITIONS

### ARTICLE 1—PREAMBLE

1.1. This Cooperative Research and Development Agreement (“*Agreement*”) for performing the work described in the *Joint Work Plan* is entered into under the authority of the *Federal Technology Transfer Act of 1986*, as amended and codified at 15 U.S.C. § 3710a, and pursuant to Air Force Policy Directive 61-3, *Domestic Technology Transfer* (20 May 2013) and Air Force Instruction 61-302, *Cooperative Research and Development Agreements* (30 May 2001) by and between **Wright State Applied Research Corporation** (“*Collaborator*”), located at 4035 Colonel Glenn Highway, Beavercreek OH 45431, and the United States of America as represented by the Department of the Air Force, acting through **Air Force Research Laboratory**, (“*Air Force Activity*”), located at Wright-Patterson Air Force Base OH 45433.

1.2. This *Agreement* is binding on *Air Force Activity* and *Collaborator* according to the terms and conditions set forth as follows.

### ARTICLE 2—DEFINITIONS

As used in this *Agreement*, the following terms have the following meanings and such meanings will be applicable to both the singular and plural forms of the terms.

2.1. “**Reviewing Official**” means the final authority of the Department of the Air Force for this *Agreement*, identified in Section III, *Signatures*, below the signatures of the parties.

2.2. “**Effective Date**” is the date this *Agreement*, including any *Amendment* thereto, is signed by the appropriate *Air Force Activity* official after having been signed by the appropriate *Collaborator* official unless the *Reviewing Official* disapproves of or requires modification to this *Agreement* within thirty (30) *Days* of the date signed by *Air Force Activity*. The *Effective Date* of any *Modification* is the date signed by the appropriate *Air Force Activity* official after having been signed by the appropriate *Collaborator* official.

2.3. “**Government**” means the Government of the United States of America including any agency or agencies thereof.

2.4. “**Invention**” means any invention or discovery which is or may be patentable or otherwise protected under Title 35 of the United States Code or any novel variety of plant which is or may be protected under the *Plant Variety Protection Act* (7 U.S.C. § 2321 *et seq.*). See 35 U.S.C. § 201(d) and 15 U.S.C. § 3703(7).

2.5. “**Created**” when used in relation to any copyrightable work means the work is fixed in any tangible medium of expression for the first time. See 17 U.S.C. § 101.

2.6. “**Made**” when used in relation to any *Invention* means the conception or first actual reduction to practice of such *Invention*. See 35 U.S.C. § 201(g).

2.7. “**Joint Work Plan**” (Section II) describes the purpose and scope of this *Agreement* and assigns obligations and responsibilities among the parties. The *Joint Work Plan* specifically details any *Background Technology* brought to this *Agreement*; any property, equipment, maintenance,

service, or other support to be provided; and any reports, products, or other deliverables expected to be produced or provided as a result of the collaborative activities under this *Agreement*. To the extent any provision of the *Joint Work Plan*, including any attachment thereto, conflicts with any provision in Section I: *Standard Terms and Conditions*, such provision in Section I: *Standard Terms and Conditions*, shall control.

2.8. **“Under this Collaboration”** means work performed by *Air Force Activity* or *Collaborator* employees in furtherance of their obligations or responsibilities described in the *Joint Work Plan*.

2.9. **“Collaborator Restricted Information”** is privileged or confidential information developed in whole or in part by *Collaborator Under this Collaboration* which embodies trade secrets or which is confidential technical, business or financial information, provided such information is identified as such by labels or markings designating the information as proprietary. *Collaborator Restricted Information* does not include information which is generally known or is available from another source without obligations concerning its confidentiality, or is described in an issued patent, published patent application, or published copyrighted work.

2.10. **“Restricted Access Information”** is information developed solely by *Air Force Activity Under this Collaboration* that would be a trade secret or commercial or financial information that is privileged or confidential if the information had been obtained from a non-Federal party participating in a CRADA. The term, “confidential,” as used throughout this *Agreement*, refers to the customary definition and should not be confused with the level of classification for national security information. *Restricted Access Information* does not include information which is generally known or is available from another source without obligations concerning its confidentiality, or is described in an issued patent, published patent application, or published copyrighted work.

2.11. **“Protected Information”** is any information developed *Under this Collaboration*, including both *Collaborator Restricted Information* and *Restricted Access Information*.

2.12. **“Background Technology”** is specified technology brought to this *Agreement* by either party consisting of privileged or restricted information or intellectual property protected by trade secret or described in a patent, patent application or copyrighted work. All Background Technology must be *Made, Created* or otherwise developed prior to the *Effective Date* of this *Agreement*, or if added under a *Modification* or *Amendment*, prior to the effective date of such *Modification* or *Amendment*. All *Background Technology* is specifically identified as such in the *Joint Work Plan*, along with the marking requirements and, if applicable, terms for delivery, storage and disposition of such *Background Technology*. *Background Technology* does not include oral or visual information not fixed in a tangible form.

2.13. **“Special Purpose License”** means a nonexclusive, nontransferable, irrevocable, worldwide, royalty-free and paid-up license to *Air Force Activity* to use, modify, reproduce, release, perform, display, or disclose technology, technical data, or copyrighted works, in whole or in part, within the *Government* without restriction, and to release or disclose outside the *Government* and authorize persons to whom release or disclosure has been made, to use, modify, reproduce, release, perform, display, or disclose such technology or information for *Government* purposes. The *Special Purpose License* includes the rights to use, modify, reproduce, release, perform, display, or disclose technology, technical data, or copyrighted works for competitive procurement, but it does not include the rights to use, modify, reproduce, release, perform, display, or disclose for commercial purposes or authorize others to do so.

2.14. “**Confirmatory License**” refers to a single-page document submitted by *Collaborator* to *Air Force Activity* documenting *Government’s* license rights to, and power to inspect and make copies of patent applications filed on, an *Invention Made Under this Collaboration* and owned by *Collaborator*. The *Air Force Activity* will record the *Confirmatory License* at the United States Patent and Trademark Office. See Appendix A, Section II: *Joint Work Plan*.

2.15. “**Alternative Dispute Resolution**” (ADR) means any procedure in which the parties agree to use a third-party neutral to resolve issues in controversy, including, for example, mediation, non-binding arbitration, or facilitation. ADR does not include binding arbitration.

2.16. “**Official File**” refers to the official *Government* record of this *Agreement*, maintained by *Air Force Activity* and accessible by the Office of Research and Technology Applications (ORTA) specified as the *Air Force Activity* POC in Article 12—“*Notices*,” and which includes, at minimum, an accounting of all funds and equipment provided under this *Agreement*, all *Modifications* or *Amendments* thereto, all Formal Notices submitted under paragraph 12.1, and each report specified in Article F—“*Deliverables*.”

2.17. “**Days**” refer to calendar days unless specified otherwise.

### ARTICLE 3—FINANCIAL CONSIDERATIONS

3.1. **Expenses.** Except as otherwise stated in the *Joint Work Plan*, each party shall bear its own expenses in the performance of work *Under this Collaboration*.

3.2. **Payments.** Except as provided for in paragraph 3.3, payments by *Collaborator* to *Air Force Activity* under this Article shall be made payable to “U.S. Government” and mailed to the following address:

AFRL/FMAO  
 ATTN: Ms. Tammy LeMaster  
 1864 4th Street, Bldg. 15  
 Wright-Patterson AFB OH 45433-7130

with a courtesy copy to the following address:

AFRL/DO  
 ATTN: Mr. Arthur F. Huber II  
 1864 4th Street, Bldg 15, RN 002  
 Wright-Patterson AFB OH 45433-7130

3.2.1. **Federal Funding.** Unless specified otherwise in Section II: *Joint Work Plan*, *Collaborator* certifies that no funds provided to *Air Force Activity* under this *Agreement* were originally received by *Collaborator* under a *Government* funding agreement.

3.2.2. **Notice to Accompany Payments.** Payments shall reference this *Agreement* by USAF CRADA Number and by the names of the parties and shall state the purpose of the payments. A copy of the payment documents shall also be sent by ordinary mail to the address shown for formal notices in Article 12—“*Notices*.”

3.3. **Royalty Payments.** Royalty or other income from intellectual property will be paid in accordance with any separate license agreement hereafter entered into by the parties pursuant to Article 4—“*Invention Disclosures & Patents*” or Article 5—“*Copyright Protection*.”

## ARTICLE 4—INVENTION DISCLOSURES & PATENTS

4.1. **Disclosure of *Inventions*.** Each party must report to the other party, in writing, each *Invention Made Under this Collaboration*, within six (6) months after the *Invention* is *Made* unless a written request for an extension of time to provide such a report has been approved by the other party. Such requests shall not be unreasonably refused.

4.2. **Rights and Licensing of *Inventions Made Under this Collaboration*.**

4.2.1. **Sole *Inventions*.** Each party will separately own any *Invention Made Under this Collaboration* solely by its respective employees.

4.2.1.1. **License to *Air Force Activity*.** The *Collaborator* will grant to *Air Force Activity* a paid-up, royalty-free, irrevocable, non-exclusive license to practice, or have practiced for or on behalf of *Government*, any *Invention Made Under this Collaboration* solely by *Collaborator* employees. The *Collaborator* will promptly provide a *Confirmatory License* upon request by *Air Force Activity* for any *Invention Made Under this Collaboration* that is owned by *Collaborator*.

4.2.1.2. **License to *Collaborator*.** The *Air Force Activity* will grant to *Collaborator* a paid-up, royalty-free, irrevocable, non-exclusive license to practice any *Invention Made Under this Collaboration* solely by *Air Force Activity* employees. The *Air Force Activity* will promptly provide a *Confirmatory License* upon request by *Collaborator* for any *Invention Made Under this Collaboration* that is owned by *Air Force Activity*.

4.2.1.3. **Option for *Collaborator* to Obtain Exclusive License.** The *Collaborator* will have the option to choose an exclusive license for a pre-negotiated field of use at a reasonable royalty rate, subject to the conditions set forth in 15 U.S.C. § 3710a(b)(1), for any *Invention Made Under this Collaboration* solely by *Air Force Activity* employees.

4.2.1.3.1. The *Collaborator* must exercise the option to obtain an exclusive license for an *Invention Made Under this Collaboration* within six (6) months of the filing of a patent application on such *Invention*. The *Collaborator* may request such time be extended as necessary to understand the nature of the *Invention* and to permit sufficient time to determine the potential value thereof, which request will not be unreasonably refused by *Air Force Activity*. Any such extensions approved by *Air Force Activity* must be in writing.

4.2.1.3.2. The *Collaborator* shall have the right of enforcement under chapter 29 of Title 35, United States Code, for an exclusive license entered into under this paragraph.

4.2.2. **Joint *Inventions*.** An *Invention Made Under this Collaboration* jointly by *Air Force Activity* employees and *Collaborator* employees (“*Joint Invention*”) will be jointly owned by both parties.

4.2.2.1. **Collaborator Election.** The *Collaborator* shall promptly elect whether to grant title of its ownership interest in a *Joint Invention* to *Air Force Activity*, subject to a non-exclusive, irrevocable, paid-up, royalty-free license to practice the *Invention* from *Air Force Activity* to *Collaborator*.

4.2.2.2. **Assignment.** If *Collaborator* appropriately files a patent application on a *Joint Invention*, *Air Force Activity* may, at its discretion, assign title in that *Invention* to *Collaborator*, subject to the conditions set forth in 15 U.S.C. § 3710a(b)(1).

4.2.2.3. **Joint Ownership Agreement.** The *Air Force Activity* will promptly provide a draft Joint Ownership Agreement to *Collaborator* for each *Joint Invention* in which the parties do not agree to consolidate ownership in accordance with paragraphs 4.2.2.1 or 4.2.2.2. The Joint Ownership Agreement will define rights and responsibilities among the parties for each such *Joint Invention*. The *Collaborator* will be responsible for all patent preparation and prosecution under the *Joint Ownership Agreement*.

#### 4.2.3. **General Terms.**

4.2.3.1. **Copies of Patent Applications.** The party filing any patent application on any *Invention Made Under this Collaboration*, including provisional and international filings, must provide a copy thereof to the other party within thirty (30) *Days* of filing such application.

4.2.3.2. **Cooperation.** The party not filing, prosecuting, or administering any patent application or patent under this Article will fully cooperate with the party filing, prosecuting, or administering the application or patent in promptly executing all necessary documents and obtaining cooperation of its employees in executing such documents related to such application or patent.

4.2.3.3. **Patent Expenses.** The party filing an application on any *Joint Invention* is responsible for all patent application preparation and filing expenses, issuance, post issuance, and patent maintenance fees associated with that application while this *Agreement* is in effect, unless otherwise agreed to under a Patent License Agreement or Joint Ownership Agreement.

4.2.3.4. **Collaborator Rights to Employee Inventions.** The *Collaborator* shall ensure that it obtains rights to all *Inventions Made* by one or more of its employees *Under this Collaboration*.

4.3. **Licensing Other Federally Owned Inventions.** The *Collaborator* may submit an application for license in accordance with 37 C.F.R. 404.8 for any federally owned *Invention* for which a patent application was filed before the signing of this *Agreement* that is directly within the scope of the work specified in the *Joint Work Plan*. The royalty rate, field of use, and other terms and conditions shall be set forth in a separate license agreement and shall be negotiated promptly and in good faith.

4.4. **Federal Regulations.** All licenses granted to *Collaborator* under this Article shall ordinarily be subject to Title 37, Code of Federal Regulations, Part 404, *Licensing of Government-Owned Inventions*.

4.5. **Participation of Third Parties.** Except as specified in paragraph 4.5.1, either party intending to use the support of any contractor or third party not identified in the *Joint Work Plan*

to perform any of its obligations *Under this Collaboration* shall provide written notice to the other party at least thirty (30) *Days* in advance of any involvement of such contractor or third party with activities *Under this Collaboration*. If the party receiving such notice objects at any time to the use or involvement of such contractor or third party, the party providing such notice will not utilize or promptly cease utilizing the services of such contractor or third party to perform its obligations *Under this Collaboration*.

4.5.1. **Third Party Support of Air Force Activity.** The *Air Force Activity* may use the support and research services of support contractors, such as Advisory and Assistance Services (A&AS) contractors, in performing its roles or obligations described in the *Joint Work Plan*. Every other contractor or third party assisting *Air Force Activity* in performing its roles or obligations described in the *Joint Work Plan* must be listed in paragraph C.2, along with the specific obligation or service each such party is expected to provide.

4.5.2. **Support Contractor Inventions.** The *Collaborator* acknowledges that invention rights under the Bayh-Dole Act, 35 U.S.C. § 200 *et seq.*, or the applicable patent rights clause under the Federal Acquisition Regulation (FAR) or the Defense Federal Acquisition Regulation Supplement (DFARS) governing any such contract, or both, may conflict with the terms in this Article. In such cases, *Collaborator's* rights or options in such inventions under this Article will take precedence over any such rights of the contractor in accordance with 35 U.S.C. § 210(e). See also 48 C.F.R. 27.303(b)(7).

4.5.3. **Third Party Support of Collaborator.** No information, material, equipment, or other resources provided by *Collaborator* under this *Agreement*, originating from any contractor or third party, shall have any restriction whatsoever on further use, release or disclosure beyond that specified in this *Agreement*, except as specifically identified, including a detailed description of any such limitations, in the *Joint Work Plan*. Any agreement with a third party to provide support to *Collaborator* for participation under this *Agreement* shall contain terms consistent with this provision and which are at least sufficient to provide *Air Force Activity* all rights anticipated under this *Agreement* as if *Collaborator* was providing the support itself. The *Collaborator* shall provide a copy of any such third party support agreement to *Air Force Activity* within thirty (30) *Days* of the execution of this *Agreement* or the third party support agreement, whichever is later.

## ARTICLE 5—COPYRIGHT PROTECTION

5.1. **Ownership of Copyrighted Works.** The *Collaborator* shall ensure that it obtains rights to all copyrightable works *Created* by one or more employees *Under this Collaboration*. The *Collaborator* shall own the copyright in all works copyrightable under Title 17, United States Code, *Created* solely by *Collaborator* employees *Under this Collaboration* or, subject to the rights of third parties under paragraph 4.5, *Created* in part by *Collaborator* employees *Under this Collaboration*.

5.2. **License in Published Copyrighted Works.** The *Collaborator* hereby grants in advance to *Government* a *Special Purpose License* in all published copyrighted works *Created Under this Collaboration*. The *Collaborator* will prominently mark each such published copyrighted work with the words: “This work was created in the performance of a Cooperative Research and Development Agreement [CRADA No.] with the Department of the Air Force. The Government of the United States has certain rights to use this work.”

5.3. **Copies of Published Copyrighted Works.** The *Collaborator* must furnish to *Air Force Activity*, at no cost to *Air Force Activity*, one copy of each published copyrighted work *Created* in whole or in part by *Collaborator Under this Collaboration*. The *Collaborator* is not required to provide a copy of any such work that is only published electronically if the publication is accessible without cost to *Air Force Activity*.

## ARTICLE 6—BACKGROUND TECHNOLOGY AND PROTECTED INFORMATION

6.1. **Disclosure of Oral and Visual Information.** Information disclosed orally or visually, if identified as information that is to be protected under this *Agreement* at the time of disclosure, will be deemed *Protected Information* under this *Agreement* for thirty (30) *Days* and thereafter if, within thirty (30) *Days* after such oral or visual disclosure, such information is reduced to writing or otherwise affixed in tangible form, and properly marked in accordance with Article 2—“Definitions” and the *Joint Work Plan*, and submitted to the other party.

6.2. **Disclosure and Use of *Background Technology*.** All *Background Technology* provided to the other party must be specifically identified in the *Joint Work Plan*.

6.2.1. Unless otherwise expressly provided in the *Joint Work Plan*, *Background Technology* may only be disclosed to those having a need for the information in connection with their duties *Under this Collaboration*. The party designating *Background Technology* in the *Joint Work Plan* hereby grants a royalty-free license to the other party to this *Agreement* to use all such *Background Technology* for the purpose of performing its obligations *Under this Collaboration*. Subject to paragraph 6.2.2, and unless specifically stated otherwise in the *Joint Work Plan*, the receiving party will have no rights (other than for performing work *Under this Collaboration*) in such *Background Technology* regardless of whether it is improved, refined or otherwise further developed *Under this Collaboration*.

6.2.2. The party designating *Background Technology* in the *Joint Work Plan* agrees to offer the other party on reasonable terms, to be negotiated under separate agreement, the non-exclusive right to further use all such *Background Technology* after the expiration or termination of this *Agreement* in negotiated fields of use, to include at least all fields or technologies described in the *Joint Work Plan*. This offer shall be made available to the other party for six (6) months from the expiration or termination of this agreement.

6.3. **Computer Software and Computer Software Documentation.** All computer software and computer software documentation *Made, Created* or developed *Under this Collaboration* by *Collaborator* shall be treated as *Collaborator Restricted Information* for purposes of determining rights in such computer software and computer software documentation.

6.4. ***Collaborator Restricted Information.*** The *Collaborator* grants a *Special Purpose License* to *Air Force Activity* in all *Collaborator Restricted Information*.

6.5. ***Restricted Access Information.*** All *Restricted Access Information* may be exempt from release under the Freedom of Information Act for a period of five (5) years as provided for at 15 U.S.C. § 3710a(c)(7)(B), during which time *Collaborator* may only use or disclose *Restricted Access Information* in confidence, or authorize others to use or disclose *Restricted Access Information* in confidence.

6.6. **Marking of *Background Technology* and *Protected Information*.** All *Background Technology* and *Protected Information* will be conspicuously marked as such and will reference



this CRADA by number (see Figures 1&2, paragraph E.4 of the *Joint Work Plan*). Neither party will be liable for the release of unmarked *Background Technology* or *Protected Information*. The party receiving properly labeled *Background Technology* or *Protected Information* must comply with all appropriate requirements governing the treatment of such information as described in the *Joint Work Plan*. The receipt or acceptance of improperly or inaccurately marked information shall not adversely affect the rights of the party receiving such information.

**6.7. Future Use of Information and Technology in Government Procurement.** Any copyrightable work or *Collaborator Restricted Information* to which *Air Force Activity* receives a *Special Purpose License* under this *Agreement* shall be prominently marked with “Government Purpose Rights,” as defined under 48 C.F.R. 252.227-7013(a)(13) & 7014(a)(12), or other notice clearly indicating *Government* has at least such rights, when delivered to any party under a federal procurement contract—other than a supplier or support contractor—after the *Effective Date* of this *Agreement* (see Figure 3, paragraph E.4). Under no circumstances shall the mere marking or labeling of such information or technology in accordance with this Article imply that such “Government Purpose Rights” license will automatically change to an “Unlimited Rights” or other license at any time. See 10 U.S.C. § 2320.

## ARTICLE 7—TERM OF AGREEMENT, MODIFICATIONS & TERMINATION

**7.1. Term of Agreement.** This *Agreement* commences on the *Effective Date* of this *Agreement* and shall terminate at the expiration date indicated above the signatures in Section III: *Signatures*, unless both parties hereto agree in writing to extend it further in accordance with paragraph 7.2 or 7.3. Expiration of this *Agreement* shall not affect the rights and obligations of the parties accrued prior to expiration. This *Agreement* may not be modified after its expiration or termination.

**7.2. Modifications.** Any change or extension within the scope of this *Agreement* as authorized by the *Reviewing Official* may be made by *Modification*, which shall be entered into by mutual written agreement signed by the parties’ representatives authorized to execute this *Agreement*. Each *Modification* will be attached hereto, a copy of which must be made available to the *Reviewing Official* within thirty (30) *Days* after each such *Modification* is signed by both parties.

**7.3. Amendments.** Any change outside the scope of this *Agreement* may be made by *Amendment*, which shall be entered into by mutual written agreement signed by the parties’ representatives authorized to execute this *Agreement* and submitted to the *Reviewing Official*. Each *Amendment* will be attached hereto.

**7.4. Termination.** Either party may terminate this *Agreement* for any reason upon delivery of written notice to the other party. The written notice shall specify an effective termination date at least thirty (30) *Days* after receipt by the other party. Termination of this *Agreement* shall not affect the rights and obligations of the parties accrued prior to the effective date of termination of this *Agreement*. In the event of termination by either party, each party shall be responsible for its own costs incurred through the effective date of termination, as well as its own costs incurred after the effective date of termination and which are unrelated to the termination. If *Air Force Activity* terminates this *Agreement* strictly for mission requirements or national security purposes, it shall not be liable to *Collaborator* or its contractors or subcontractors for any costs resulting from or related to the termination, including, but not limited to, consequential damages or any other costs.

## ARTICLE 8—DISPUTES

8.1. **Resolution of Disputes.** All disputes arising out of or related to this *Agreement* will be resolved in accordance with this Article. The parties agree to use reasonable efforts to reach a fair settlement of any dispute. Resolution attempts must be documented and maintained in the *Official File*. Pending the resolution of any informal or formal dispute process, work under this *Agreement* not subject to dispute may continue.

8.2. **Informal Resolution.** The parties agree to make a good faith attempt to informally resolve all disputes arising out of this *Agreement* among themselves before pursuing the formal dispute resolution process.

8.3. **Alternative Dispute Resolution Process.** In accordance with Department of Defense Instruction 5145.05, *Alternative Dispute Resolution (ADR) and Conflict Management* (27 May 2016) and Air Force Policy Directive 51-12, *Alternative Dispute Resolution* (9 January 2003), the parties should use ADR as an alternative to litigation or formal proceedings to the maximum extent practicable and appropriate. Either party may submit a written request for ADR to the other party any time prior to the submission of a request for a formal decision by the *Reviewing Official*. ADR may be used for all or a portion of the issue in controversy. The *Air Force Activity* shall, within sixty (60) *Days* of receiving or submitting a request for ADR, identify in writing a third-party neutral suitable for the requested ADR process and provide an estimate or cost basis for the process. In identifying such third-party neutral, *Air Force Activity* shall, with the assistance of the Air Force General Counsel (SAF/GC), make use of existing *Government ADR* resources to avoid unnecessary expenditure of time and money. The party in receipt of a request for ADR may provide a written rejection of the requested ADR process, which must include a detailed description of why the requested ADR process is not appropriate. Failure to provide such rejection to the other party within thirty (30) *Days* of the identification of a third-party neutral shall be deemed as an acceptance of the requested ADR process.

8.4. **Formal Decision by Reviewing Official.** If informal efforts to resolve disputes are unsuccessful, either party may request a formal decision by the *Reviewing Official*. The *Reviewing Official* must, within sixty (60) *Days* of receipt of the request for decision, issue a formal decision to the parties in writing. The decision of the *Reviewing Official* shall be binding on the parties unless appealed in accordance with paragraph 8.5.

8.5. **Final Agency Decision.** Either party may appeal the formal decision by the *Reviewing Official* by submitting a request for a final agency decision, along with a complete documentation of the dispute process, to the Office of the Secretary of the Air Force General Counsel for Acquisition (SAF/GCQ) within six (6) months of the issuance of the formal decision by the *Reviewing Official*. The Office of the Assistant Secretary of the Air Force for Acquisition (SAF/AQR) shall promptly notify the parties of the final agency decision in writing. The decision of SAF/AQR or designee shall be final and conclusive and shall be binding on the parties. Nothing in this *Agreement* may be interpreted to deny or limit the right of the parties to thereafter seek relief in federal court.

## ARTICLE 9—REPRESENTATIONS

9.1. **Air Force Activity.** The *Air Force Activity* hereby represents to *Collaborator* as follows:

9.1.1. **Mission.** The performance of the activities specified by this *Agreement* is consistent with the mission of *Air Force Activity*.

9.1.2. **Authority.** The *Air Force Activity* has obtained, prior to the execution of this *Agreement*, all prior reviews and approvals required by law or regulation. The *Air Force Activity* officials signing and executing this *Agreement* have the requisite authority to do so.

9.1.3. **Statutory Compliance.** The *Air Force Activity*, prior to entering into this *Agreement*, has: (1) given special consideration to entering into CRADAs with small business firms and consortia involving small business firms; (2) given preference to business units located in the United States which agree that products embodying an *Invention Made Under this Collaboration* or produced through the use of such *Invention* will be manufactured substantially in the United States; and (3) taken into consideration, in the event this *Agreement* is made with an industrial organization or other person subject to the control of a foreign company or government, whether or not such foreign government permits United States agencies, organizations, or other persons to enter into CRADAs and licensing agreements with such foreign country.

9.2. **Collaborator.** The *Collaborator* hereby represents to *Air Force Activity* as follows:

9.2.1. **Corporate Organization.** The *Collaborator*, as of the date hereof, is Wright State Applied Research Corporation, a 501(c)(3) tax-exempt nonprofit corporation, a research arm and affiliated entity to Wright State University, duly organized, validly existing and in good standing under the laws of the State of Ohio. The *Collaborator* is not a Small Business, as defined by the Small Business Administration. The *Collaborator* is not a foreign owned or a subsidiary of a foreign owned entity.

9.2.2. **Statement of Ownership.** The *Collaborator* has the right to assignment of all *Inventions Made* and copyrightable works *Created* by its employees *Under this Collaboration*.

9.2.3. **Authority.** The *Collaborator* official executing this *Agreement* has the requisite authority to enter into this *Agreement* and *Collaborator* is authorized to perform according to the terms hereof.

9.2.4. **Infringement.** The *Collaborator* will not knowingly, without appropriate authorization and consent, infringe any third-party's intellectual property rights in the performance of work *Under this Collaboration*. The *Collaborator* will immediately notify *Air Force Activity* of any potential infringement involving work *Under this Collaboration* upon receipt of a notice of infringement or after otherwise becoming aware of any possible infringement of a third party's intellectual property.

9.2.5. **Lawful Compliance.** The *Collaborator* will perform all activities under this *Agreement* in compliance with all applicable laws, regulations and policies.

9.2.6. **Certification.** Neither *Collaborator* nor any of its principals are currently debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from participating in transactions with *Government*, the Department of Defense, or the United States Air Force. The *Collaborator* will promptly notify *Air Force Activity* if such status changes during this *Agreement*.

## ARTICLE 10—LIABILITY AND LIMITATIONS

10.1. **Property.** No real or tangible property or equipment may be furnished to the other party unless specifically identified in the *Joint Work Plan*.

10.1.1. All such property and equipment identified in the *Joint Work Plan* is furnished “AS IS” and the parties make NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, for any property or equipment furnished under this *Agreement*.

10.1.2. All *Government* property and equipment furnished to *Collaborator* under this *Agreement* must be returned to *Air Force Activity* on or before the termination or expiration of this *Agreement*. The *Collaborator* shall immediately return or provide immediate access to any *Government* property or equipment provided to it under this *Agreement* that is deemed essential for national security or mission needs at the absolute discretion of the *Reviewing Official*. The unauthorized use of *Government* property can subject a person to fines, imprisonment, or both, under 18 U.S.C. § 641.

10.1.3. The party that has received property or equipment from the other party under this *Agreement* assumes the risk of, and shall be responsible for, any loss of such property or equipment upon its return, or failure to return when due, to the party providing the property or equipment. All property and equipment provided to the receiving party, unless otherwise specified in the *Joint Work Plan*, shall be returned in the same condition in which it was received, reasonable wear and tear excepted.

10.2. **Intellectual Property.** The parties make NO EXPRESS OR IMPLIED WARRANTY AS TO ANY MATTER WHATSOEVER, including the conditions of the research or any *Invention* or other intellectual property, or product, whether tangible or intangible, provided, *Made*, *Created* or developed *Under this Collaboration*, or the merchantability, or fitness for a particular purpose of the research or any *Invention* or other intellectual property, or product. The parties further make no warranty that the use of any *Invention* or other intellectual property or product provided, contributed, *Made*, *Created* or developed *Under this Collaboration* will not infringe any other United States or foreign patent or other intellectual property right.

10.3. **DAMAGES.** IN NO EVENT WILL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR PUNITIVE, EXEMPLARY, OR CONSEQUENTIAL DAMAGES.

10.4. **No Waiver of Sovereign Immunity.** Notwithstanding any provision to the contrary, *Collaborator* understands and agrees that *Government* will not be liable to any party to this *Agreement*, whether directly or by way of contribution or indemnity, for any claim made by any person or other entity for personal injury or death or for property damage or loss, arising in any way from this *Agreement*, including, but not limited to, the later use, sale, or other disposition of research and technical developments, whether by resulting products or otherwise, whether *Made*, *Created*, or developed *Under this Collaboration* or contributed by either party pursuant to this

*Agreement*, except as provided under the Federal Tort Claims Act (28 U.S.C. § 2671 *et seq.*) or other federal law where sovereign immunity has been explicitly waived.

## ARTICLE 11—GENERAL TERMS & PROVISIONS

11.1. **Disposal of Toxic or Other Waste.** The *Collaborator* is responsible for either the removal and disposal from *Air Force Activity* premises of any additional toxic and hazardous materials and wastes over and above amounts or different from types which would be produced during operations of *Air Force Activity* facilities in the absence of this *Agreement* or for the costs associated with such additional removal or disposal, if any. The *Collaborator* must obtain, at its own expense, all necessary permits and licenses as required by local, state, and Federal law and regulation, and will effect such removal and disposal in a lawful and environmentally responsible manner.

11.2. **Force Majeure.** Neither party will be in breach of this *Agreement* for any failure of performance caused by any event beyond its reasonable control and not caused by the fault or negligence of that party. In the event such a force majeure event occurs, the party unable to perform must promptly notify the other party, and in good faith maintain such part performance as is reasonably possible, and resume full performance as soon as is reasonably practicable.

11.3. **Relationship of the Parties.** The parties to this *Agreement* and their employees are independent contractors and are not agents of each other, joint venturers, partners, or joint parties to a formal business organization of any kind. Neither party is authorized or empowered to act on behalf of the other with regard to any contract, warranty, or representation as to any matter, nor will either party be bound by the acts or conduct of the other. Each party will maintain sole and exclusive control over its own personnel and operations.

11.4. **Publicity/Non-Endorsement.** Any public announcement of this *Agreement* must be coordinated between *Collaborator*, *Air Force Activity* and the public affairs office supporting *Air Force Activity*. By entering into this *Agreement*, neither *Air Force Activity* nor the *Government* directly or indirectly endorses any product or service provided, or to be provided, by *Collaborator*, its successors, assignees, or licensees. The *Collaborator* may not in any way imply that this *Agreement* is an endorsement of *Collaborator* or any such product or service.

11.5. **Publication or Public Disclosure.** The parties agree to confer and consult with each other prior to publication or other public disclosure of information obtained from, or results derived from, collaborative activities *Under this Collaboration* to ensure that no *Background Technology*, *Protected Information*, military critical technology, classified information, export controlled, or other controlled or sensitive information is inappropriately released.

11.5.1. Each party shall provide a complete copy of any such proposed publication or public disclosure to the other party as soon as practicable, subject to the limitations under paragraph 11.5.2, to allow the other party to submit objections to such publication or disclosure and to take suitable steps to secure appropriate protection in a timely manner.

11.5.2. Where submission of a complete copy of the proposed publication or disclosure is limited by law or regulation or where such submission is impractical, the party proposing such publication or disclosure shall provide a summary or description of the relevant information subject to publication or disclosure. Such summary or description shall be as reasonably complete as possible to allow the party to assess the need to protect sensitive information.

11.5.3. Neither party may proceed with such publication or public disclosure within thirty (30) *Days* of providing a copy, summary, or description of such publication or public disclosure under paragraph 11.5.1 or 11.5.2, without the express written consent of the other party.

11.5.4. Failure to object to such proposed publication or disclosure within ninety (90) *Days* after such proposed publication or disclosure was received from the other party, or prior to the actual publication or public disclosure, subject to paragraph 11.5.3, whichever is earlier, shall constitute implied assent to such publication or disclosure.

11.5.5. In all cases, a party proposing to publish or publicly disclose information obtained from the other party that is marked with a restriction limiting the distribution of such information, may not proceed with such publication or public disclosure without the express written consent of the other party.

11.5.6. Under no circumstances shall any review or assent of a proposed publication relieve the publishing party of its obligations under Executive Order 13526, “*Classified National Security Information*,” the Arms Export Control Act, or the Export Administration Act.

11.5.7. Subject to the restrictions under paragraph 11.4, any such publication or other public disclosure of work or results *Under this Collaboration* must, unless waived by the other party in writing, include a statement to the effect that the project or effort was made in the performance of a Cooperative Research and Development Agreement with the other party to this *Agreement*.

11.6. **Governing Law.** The construction, validity, performance and effect of this *Agreement* will be governed, for all purposes, by the laws applicable to *Government*.

11.7. **Waiver of Rights.** Any waiver must be in writing and provided to all other parties. Failure to insist upon strict performance of any of the terms and conditions hereof, or failure or delay to exercise any rights provided herein or by law, will not be deemed a waiver of any rights of any party hereto.

11.8. **Entire Agreement.** This *Agreement* represents the entire agreement of the parties and is the complete and exclusive statement of their agreement.

11.9. **Severability.** The illegality or invalidity of any provision of this *Agreement* will not impair, affect, or invalidate the other provisions of this *Agreement*.

11.10. **Survivability.** All rights and responsibilities incurred under Section I: *Standard Terms and Conditions*, and Article E—*Intellectual Property*, shall survive the expiration or termination of this *Agreement*.

11.11. **Assignment.** Neither this *Agreement* nor any rights or obligations of either party hereunder may be assigned or otherwise transferred by either party without the prior written consent of the other party.

11.12. **Controlled Information.** The parties understand that information and materials provided pursuant to or resulting from this *Agreement* may be export controlled or unclassified sensitive and protected by law, executive order, or regulation. Nothing in this *Agreement* may be construed to permit any disclosure in violation of these restrictions.

11.13. **Classified Information.** No classified information will be submitted, received, discussed, or otherwise transferred between the parties under this *Agreement*.

11.14. **Records.** The *Air Force Activity* will maintain a complete record of this *Agreement* in the *Official File*. This record will include, for example, a signed copy of this *Agreement*, legal review, all *Modifications*, *Amendments* and attachments thereto, an archive of all *Background Technology* and *Protected Information* provided by either party—which shall be used solely for the purpose of documenting *Air Force Activity's* obligations under this *Agreement*—and all formal notices received by or delivered to *Collaborator* under Article 12—“*Notices*,” in accordance with 15 U.S.C. § 3710a(c)(6).

11.13. **No Human or Animal Research.** No work performed *Under this Collaboration* will involve human or animal subjects. Absolutely no human or animal research or testing is authorized under this *Agreement* or any *Modification* thereto.

11.14. **Implementation of Operations Security (OPSEC) by *Air Force Activity*.** General OPSEC procedures, policies and awareness are required in an effort to reduce program vulnerability to adversary effort to collect and exploit critical information. OPSEC shall be applied as a protective measure throughout the life cycle of this *Agreement*.

## ARTICLE 12—NOTICES

Notices specified in this *Agreement* must be addressed and sent as follows:

12.1. **Formal Notices.** Send formal notices under this *Agreement*, including copyright, invention and patent correspondence, by prepaid, certified U.S. Mail, or by electronic mail with a non-automated confirmation receipt by receiving party (note: If receiving party requires a “wet signature,” that party should not provide confirmation to the sender but should instead indicate the need for an original document), to:

***Air Force Activity***

Abby Boggs  
AFRL/SB  
1864 4th Street  
Wright-Patterson AFB OH 45433  
937-656-7361  
[abby.boggs@us.af.mil](mailto:abby.boggs@us.af.mil)

***Collaborator***

Brian McCartan  
Contracts Manager  
Wright State Applied Research Corp  
4035 Colonel Glenn Hwy  
Beavercreek OH 45431  
937-705-1049  
[brian.mccartan@ws-arc.org](mailto:brian.mccartan@ws-arc.org)

12.2. **Technical Matters.** Send informal correspondence on technical matters to the Technical Point of Contact (TPOC), designated below, by U.S. Mail or electronic mail to:

***Air Force Activity***

Arthur F. Huber II  
AFRL/DO  
1864 4th Street, Bldg 15, RN 002  
Wright-Patterson AFB OH 45433  
937-904-8012  
[arthur.huber@us.af.mil](mailto:arthur.huber@us.af.mil)

***Collaborator***

Dr. David Gross  
Chief Engineer  
Wright State Research Institute  
4035 Colonel Glenn Hwy  
Dayton, OH 45431  
[David.Gross@wright.edu](mailto:David.Gross@wright.edu)  
937-284-2050



**SECTION II:**  
**JOINT WORK PLAN**

**“Ohio Federal Research Network Flight Testing and Demonstrations”**

**ARTICLE A—PROJECT DESCRIPTION**

A.1. **Executive Summary.** The Air Force Activity and Collaborator are working with the Ohio Federal Research Network (OFRN) to create a novel approach to technology-based development with a focus on aggregating, integrating, and leveraging federal, academic and private sector capabilities and resources to develop proactive and innovative solutions to address emerging federal and state requirements and emerging market opportunities. OFRN research projects are intended to advance priority research thrust areas of the Air Force Research Laboratory (AFRL), National Air and Space Intelligence Center (NASIC), Naval Medical Research Unit – Dayton (NAMRU-D), National Aeronautics and Space Administration Glenn Research Center (NASA-GRC), the State of Ohio's Adjutant General (TAG), and thrust areas from the United States Marine Corps (USMC).

The development of and requirement for remotely-piloted vehicles in general and more specifically, autonomous aerospace systems has grown dramatically with a variety of designs and targeted dates for deployment. These new classes of vehicles will disrupt existing transportation and logistic systems. However, the certification and fielding of autonomous or semi-autonomous systems has significantly lagged the technology development.

This joint effort is focused on expanding the federal and industry aerospace research, development and sustainment for unmanned air systems (UASs), personal air vehicles (PAVs), and logistics delivery air vehicles (LDVs). Across the different classes, target applications, and technologies, several barriers persist, including FAA flight certification; reliability and safety concerns; and, specific technical and market validation needs.

Under this CRADA technology will be demonstrated in simulated scenarios in coordination with AFRL and the other OFRN partners. OFRN teams are focused on creating technologies to support in-field operations ranging from payload delivery in disaster response and their associated support systems.

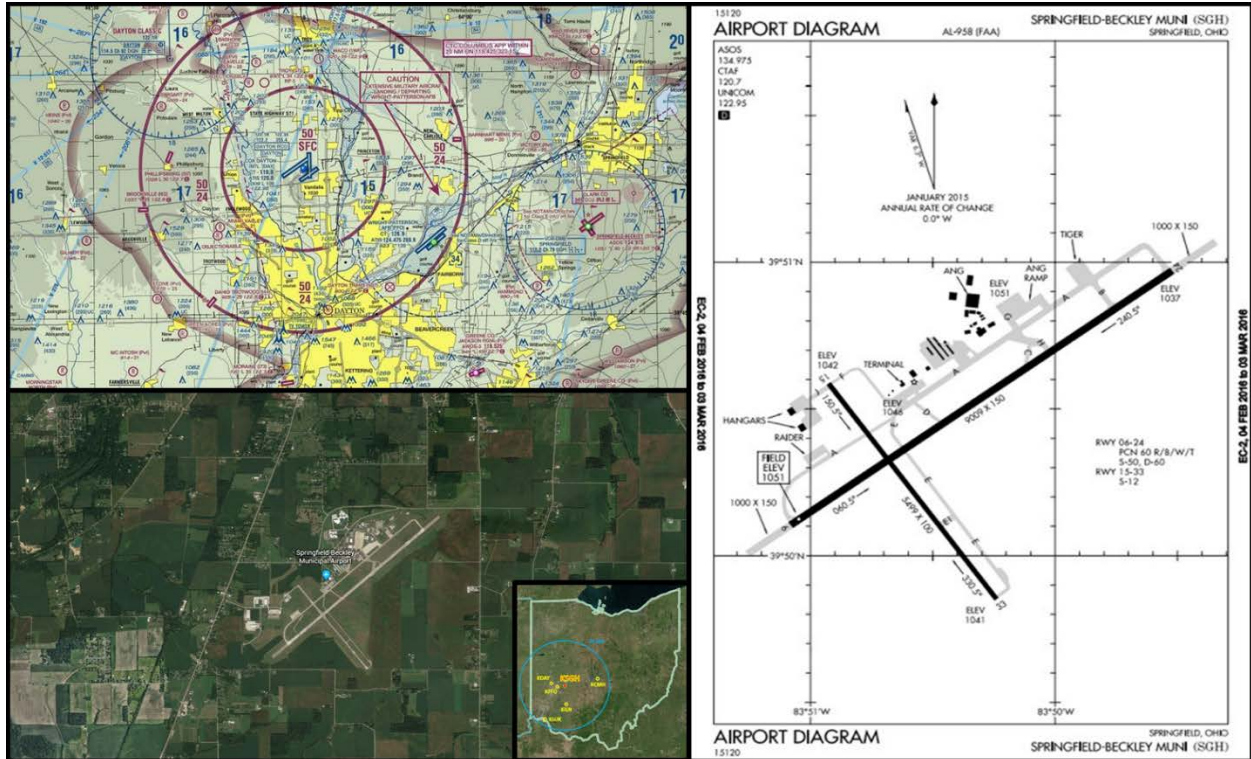
The flight demonstrations covered by this CRADA will serve to debut new capabilities in aerospace systems. Such demonstrations have near term-benefit for safe and efficient operations by military, law enforcement, and first responders as well as long-term benefits of improving the performance characteristics of UASs, PAVs, and LDVs.

OFRN intends to support testing and demonstrations of UAS, LDV and PAV systems using the Springfield UAS test site. OFRN is planning many flight demonstrator projects that will enable:

- An increase in the performance, capability, safety, and trust of UAS, PAV, and LDV systems
- A blueprint for rapid prototyping, scaling and qualification of systems
- An increase in deployment and service models
- Delivery of goods/personnel to remote and high value sites
- Changes to the nature of the last mile in logistics

- The advancement of automation technology to distributed aircraft models
- Flexible airspace and integration policy

Demonstrations will be based on using the Ohio/Indiana UAS Center (UASC, see <http://www.dot.state.oh.us/divisions/uas/Pages/default.aspx>) in Springfield, OH, and/or the National Center for Medical Readiness (NCMR) Calamityville in Fairborn, OH. The demonstration will evaluate and demonstrate clear benefits to future deployment of UASs, PAVs, and LDVs for multiple applications.



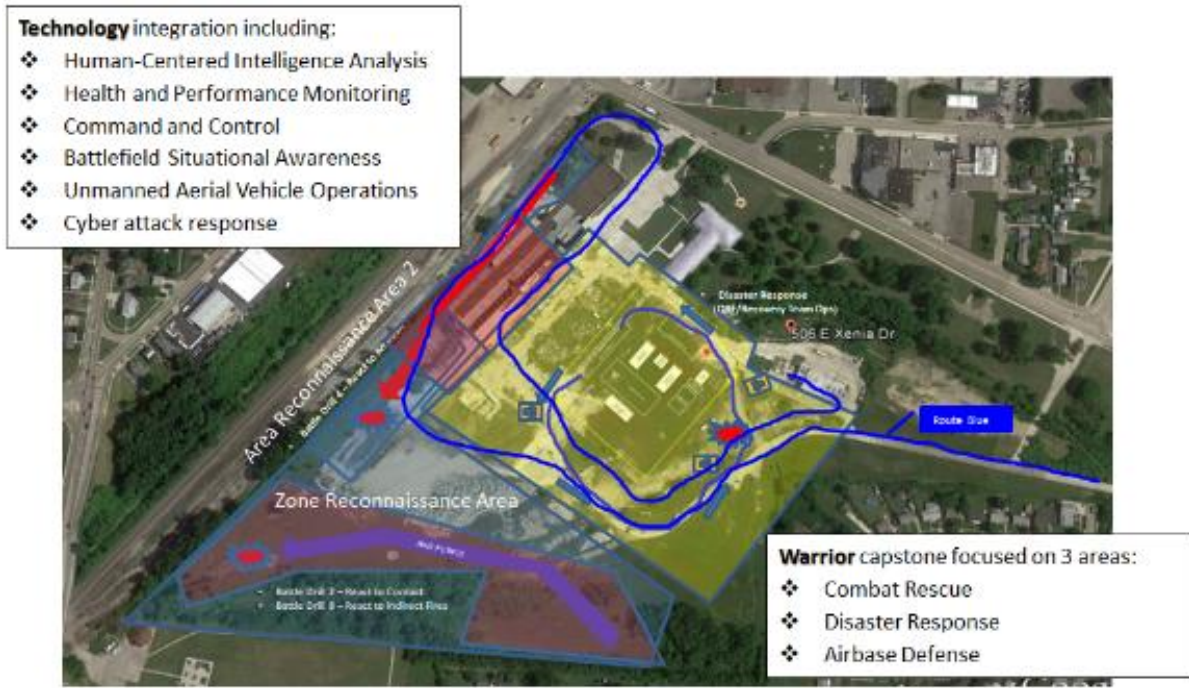
**Figure 1: KSGH Springfield-Beckley Municipal Airport - Springfield, OH**

Figures 1 and 2 illustrate the airspace available for the demonstration scenarios. There are two operational volume airspaces defined, one for Visual Line of Sight (VLOS) operations and another for Beyond Visual Line of Sight (BVLOS) operations. The VLOS airspace is surface to 3,500 feet AGL and an area of approximately 7 NM<sup>2</sup>. The BVLOS airspace is 1,000 feet AGL to 8,000 feet MSL covering an area of over 200 NM<sup>2</sup>. Additional details of the UASC flight requirements including air worthiness, pilot qualification, and additional facility and airspace details will be provided with each test and demonstration.



**Figure 2: UASC VLOS and BVLOS Operational Volume**

Figure 3 shows the Calamityville disaster response test area that is also intended to be available for the demonstration scenarios. These are two operational volume airspaces defined, one for Visual Line of Sight (VLOS) operations and another for Beyond Visual Line of Sight (BVLOS) operations. More information is available online about Calamityville (see: <https://wsri.wright.edu/programs-and-facilities/national-center-for-medical-readiness>)



54 Total Acres  
 18 miles from Dayton International Airport  
 2.0 miles from Wright Patterson AFB  
 12 Miles from Springfield OHANG.

Scenario used during recent large scale exercise



*Figure 3: Calamityville Disaster Response Test Area*

UASs, PAVs, and LDVs will be deployed to these two sites to show how proposed technologies could improve their deployment. Examples include but are not limited to:

- Communication and relay systems
- New in-flight sensors and computing systems
- Innovations for detect and avoid systems
- Increased autonomy of systems
- Increased efficiency of energy systems,
- Propulsion that allows longer endurance flights, or
- New flight profiles

## **ARTICLE B—OBJECTIVES**

**B.1. Nature of Collaboration and CRADA Objectives.** The overall nature and objective of this collaboration is to advance the state of the art of UAS vehicles and their inherent technologies to include their command and control, particularly, in the National Airspace System. Through this CRADA both the *Air Force Activity* and *Collaborator* will enhance their capabilities to make UAS technologies of greater relevance to their respective customer communities.

**B.2. Technology Transfer.** Federally-owned or originated technology in the form of testing techniques and use of the specialized facility known as the Ground-Based Detect and Avoid (GBDAA) System which is currently owned and was developed by *Air Force Activity*, and the data resulting from the use of such equipment and facilities, will be made available to *Collaborator*. This Agreement provides a mechanism for *Air Force Activity* and *Collaborator* to combine and share their respective knowledge and experience in this area of research. The *Collaborator* and *Air Force Activity* each bring complementary aerospace research and development as well as flight testing and demonstration experience, personnel, facilities, and services to conduct research projects in support of UASs, LDVs and PAVs. The scientific data and knowledge gained from this Agreement will be shared between the *Air Force Activity* and *Collaborator* and made available to third-party researchers in both the public and private sectors to the extent permitted by this Agreement. The technologies evaluated under this Agreement may have both military and commercial applications in UASs, LDVs, and PAVs. It is anticipated that data, collected at both *Collaborator* and *Air Force Activity* facilities will be transferred on a

recurring basis to the private sector, in compliance with the statutory requirement of the Federal Technology Transfer Act.

### B.3. **Benefit to Air Force Mission.**

**B.3.1. Description of Benefit to Air Force Activity.** The *Air Force* will benefit by the creation of a major test site and demonstration facility near WPAFB that facilitates joint efforts to research, develop, and test innovations with industry, academia and local government. Additionally, the projects sponsored by the *Collaborator* will promote direct advisory relationships with the Air Force, which can provide another method for the *Air Force* to attain a strategic advantage through introduction to new ideas from non-federal partners. The *Air Force* would also benefit by having access to projects that seek to increase the rate of manufacturing and use of virtual test systems. These innovations alone would build for the *Air Force* distinct domestic abilities to rapidly test, certify and deploy aircraft and subcomponents to adapt to rapidly changing profiles. Finally, through the close partnership with *Collaborator*, the Air Force would have direct access not only to top research talent in academia and industry, but also a pipeline of technical students that have training and direct experience in *Air Force* relevant areas.

**B.3.2. Estimated Benefit to Air Force Activity.** This project will allow *Air Force* Activity to leverage the expertise and research results of *Collaborator* to accelerate the research and development needed to realize UAS/LDV products that meet Air Force needs. Access to *Collaborator*'s expertise and research results will save thousands of dollars and hundreds of hours of development time for *Air Force* Activity.

### B.4. **Benefit to Collaborator.**

**B.4.1. Description of Benefit to Collaborator.** The *Collaborator* will benefit by having access to *Air Force* Activity's personnel, unique resources, and operational-specific data, and access to military test facilities. This work will further enhance the aerospace industrial base while leveraging research funding, talent, and capabilities development to support future Federal, State, and Industry aerospace requirements. The OFRN has established a novel approach to technology-based development through its focus on aggregating, integrating, and leveraging federal, academic and private sector capabilities and resources to develop proactive and innovative solutions that address emerging federal and state requirements and market opportunities. OFRN research projects are intended to advance priority research thrust areas of the Air Force Research Lab (AFRL), National Air and Space Intelligence Center (NASIC), Naval Medical Research Unit – Dayton (NAMRU-D), National Aeronautics and Space Administration Glenn Research Center (NASA-GRC), and the State of Ohio's Adjutant General (TAG). Also included in this initiative are thrust areas from the United States Marine Corps (USMC) related to manufacturing and logistics automation. Through its collaboration with the AFRL, NASIC, NAMRU-D, NASA-GRC, USMC, and TAG, OFRN has identified research priorities of mutual interest and has organized universities and colleges in Ohio around these organizations' missions, technology roadmaps, and strategic priorities. The aim of the OFRN is to provide value to its Federal customers so that the State of Ohio and the Ohio aerospace industry benefit in return. The State of Ohio will benefit from the transition of the research it conducts or sponsors with *Air Force* Activity assistance to Ohio defense and commercial enterprises that will create new products and fill new jobs.

**B.4.2. Estimated Benefit to Collaborator.** The *Collaborator* will benefit by having access to *Air Force Activity* personnel, expertise, processes, and facilities. Such access will save hundreds of thousands of dollars it would cost to independently develop such resources.

**B.5. Estimated Value of Contributions.**

**B.4.1 Estimated Contributions by Air Force Activity.** The *Air Force Activity* estimates the following contributions toward this CRADA effort:

(1) Personnel / Labor	\$	0.125M*
(2) Services	\$	\$0
(3) Facilities	\$	2.5M#
(4) Supplies and Equipment	\$	0^
(5) Intellectual Property	\$	0
(6) Other Resources	\$	0
<b>TOTAL</b>	<b>\$</b>	<b>2.625M</b>

\* one half man-year over the life of this CRADA

# value of AF investment in specialized equipment/facilities made available through this CRADA

^ captured in facilities figure

**B.4.2 Estimated Contributions by Collaborator.** The *Collaborator* estimates the following contributions toward this CRADA effort:

(1) Personnel / Labor	\$	0.125M
(2) Services	\$	0
(3) Facilities	\$	0
(4) Supplies and Equipment	\$	0
(5) Intellectual Property	\$	0
(6) Other Resources (Funds)	\$	6.900M
<b>TOTAL</b>	<b>\$</b>	<b>7.025M</b>

**ARTICLE C—PARTIES AND OTHER PARTICIPANTS**

**C.1. Relationship of Parties.** The *Air Force Activity* and *Collaborator* have not previously worked together in a formal fashion, but have held numerous informal discussions on this unique cooperative opportunity, leading to the decision to enter into this *Agreement* based on *Collaborator's* demonstrated capabilities, expertise, and level of interest. The *Air Force Activity* is not: (1) providing an unfair competitive advantage to *Collaborator*; (2) unduly competing with the private sector; or (3) establishing a sole source for future procurement needs.

C.2. **Other Participants.** The *Air Force Activity* anticipates that the following participants will contribute to this *Agreement*:

- OH/IN UAS Center (indirect via scheduling/operation of the GBDAA system under existing agreements with the *Air Force Activity*)
- City of Springfield (indirect via fees paid for use of KSGH airspace)

## ARTICLE D—TECHNICAL TASKS

D.1. **Air Force Activity.** The *Air Force Activity* will:

D.1.1. Within thirty (30) days after the *Effective Date* of this *Agreement*, arrange for and participate in a kickoff meeting with *Collaborator*.

D.1.2. Assist in the design and planning of the flight demonstrations covered by this CRADA

D.1.3. Be responsible for conducting technical, safety, operator, and airworthiness reviews as a necessary precondition to use Air Force Activity resources.

D.1.4. Be responsible for Flight Test approval for experiments conducted using Air Force Activity resources.

D.1.5. Assist Collaborator in conduct of experiments using Air Force Activity resources, involving both military and civilian systems as needed/appropriate. This primarily includes access to airspace and/or provision/operation of the GBDAA system in a manner relevant to the Collaborator's test activities at the Springfield UAS test site and NCMR Calamityville.

D.2. **Collaborator.** The *Collaborator* will:

D.2.1. Within thirty (30) days after the Effective Date of this Agreement, participate in a kickoff meeting with Air Force Activity to discuss detailed project plans and mechanisms for coordination.

D.2.2. Provide all required documentation and expertise to facilitate Air Force Activity's technical, safety, operator, and airworthiness review and approval processes for use of Air Force Activity resources.

D.2.3. Provide regularly scheduled communication with Air Force Activity detailing the progress of efforts and coordinating on any issues that may require collaborative resolution.

D.2.4. Assist Air Force Activity with writing test procedures and protocols, as required.

D.2.5. Provide personnel and test supplies as needed to assist with testing activity.

D.2.6. Provide post-test documentation detailing results of test activities to include assessments of test item performance against desired or expected objectives.

## ARTICLE E—INTELLECTUAL PROPERTY

E.1. **Background Technology.** A designation of relevant *Background Technology*, if any, each party brings to this *Agreement* is listed below, along with a detailed description or

appropriate citation (e.g., patent number, software version, etc) for each item and the type of intellectual property protection that applies (e.g., trade secret, copyright, patent or patent application, etc). No *Background Technology* may be added after the *Effective Date* except by *Modification* or *Amendment*.

E.1.1. ***Air Force Activity Background Technology.*** The GBDAA system is based upon technology operated by the Federal Aviation Administration (FAA) known as the Standard Terminal Automation Replacement System Enhanced Local Integrated Tower Equipment (STARS ELITE). This system and information describing its technical details is controlled under the International Traffic in Arms Regulations (ITAR). The STARS ELITE is an air traffic control automation system used in many air traffic control (ATC) facilities around the United States adapted for use within the GBDAA. The system receives and processes target reports, weather, and other non-target messages from ATC sensors. It also detects unsafe proximities between tracked aircraft and provides visual and aural warnings according to programmed and selectable settings. It may be necessary to share some technical interface and procedural information about the STARS ELITE system with the Collaborator to support individual test activities. This information will be protected in compliance with the ITAR regime.

E.1.2. ***Collaborator Background Technology.*** None.

E.2. ***No Effect on Rights of Background Technology.*** Except as provided in paragraph 6.2, the designation of technology as *Background Technology* does not create or establish any rights in *Background Technology*. Nothing in this *Agreement* shall be construed to otherwise alter or affect any rights of either party to any technology listed as *Background Technology* that exist or are modified outside this *Agreement*.

E.3. ***Other Privileged or Proprietary Information.*** Privileged or proprietary information (e.g., commercial or financial information developed prior to this *Agreement* but not qualifying as *Background Technology*), should be conspicuously marked with the appropriate legend (e.g., “Proprietary Information”) when provided to the other party. The receiving party shall protect such information with at least the same care as it would protect its own trade secret information (or information that would be a trade secret if originating from a non-federal party).

E.4. ***Standard Markings.***

E.4.1. ***Background Technology.*** All *Background Technology* will be identified as such with a marking. For example:



**[PARTY NAME] – BACKGROUND TECHNOLOGY**

The right to use, modify, reproduce, release, perform, display, disclose or dispose of information revealed herein is restricted in accordance with CRADA No. FY-###-LAB-##.

This information shall be protected in accordance with 15 U.S.C. § 3710a(c)(7). Any information subject to this legend may only be reproduced or disclosed if authorized under that agreement and every such reproduction or disclosure must also be prominently marked with this legend.

If you are not permitted to receive this information under that agreement, you must immediately return it to an authorized representative.

Figure 1: Marking of *Background Technology*

E.4.2. ***Protected Information.*** All *Protected Information* will be identified as such with a marking. For example:

**[PARTY NAME] – PROTECTED INFORMATION**

The right to use, modify, reproduce, release, perform, display, disclose or dispose of information revealed herein is restricted in accordance with CRADA No. FY-###-LAB-##.

This information shall be protected in accordance with 15 U.S.C. § 3710a(c)(7). Any information subject to this legend may only be reproduced or disclosed if authorized under that agreement and every such reproduction or disclosure must also be prominently marked with this legend.

If you are not permitted to receive this information under that agreement, you must immediately return it to an authorized representative.

Figure 2: Marking of *Protected Information*

E.4.3. ***Future Use of Information subject to Special Purpose License.*** Use of information developed or *Created Under this Collaboration* and subject to a *Special Purpose License* in a future *Government* procurement, in accordance with paragraph 6.8, will be identified as such with a marking. For example:

<b><u>GOVERNMENT PURPOSE RIGHTS</u></b>
CRADA No. [FY-###-LAB-##]
[Collaborator Name]
[Collaborator Address]
Expiration Date: NONE

Figure 3: Marking of information subject to *Special Purpose License* in future *Government* procurement

**ARTICLE F—DELIVERABLES**

F.1. **Property and Equipment.** None

F.2. **Annual and Interim Reports.** The *Collaborator* will prepare final reports throughout the life of this *Agreement* for each individual activity conducted/sponsored by the *Collaborator*. These individual activity final reports will include: a summary of each individual activity, issues encountered and resolved or left unresolved objectives met and unmet, technology advanced or developed, and benefits accrued. The *Air Force Activity* will prepare at least one briefing describing the results of the work by the end of each one-year period during the term of this *Agreement*.

F.3. **Final Report.** The final summary report for this *Agreement* will be completed jointly by *Air Force Activity and Collaborator* and will be completed by the last day of the month following the month of termination or expiration of this *Agreement*. The format of the final report will be determined by mutual consent of *Air Force Activity and Collaborator*.

F.4. **Delivery of Reports.** All reports to be delivered under this *Agreement* shall be delivered to the individuals specified in Article 12—“*Notices*” and maintained in the *Official File*.

F.5. **Other Deliverables.** The *Collaborator* and *Air Force Activity* will deliver test data in an agreed-upon format to each other, as needed.

**ARTICLE G—MILESTONES.**

Month 1..... Air Force Activity hosts kick-off meeting/teleconference with Collaborator.

Month following completion of individual research activities.....Collaborator provides final research report

Month following month of Agreement termination..... Air Force Activity and Collaborator jointly provide final summary report.

**APPENDIX A:  
CONFIRMATORY LICENSE**

**Cooperative Research and Development Agreement (CRADA) No.:**

**Licensors (Collaborator):**

[Name/Address/E-mail]

**Licensee (Air Force Activity):**

[Name/Address/E-mail]

**The invention identified below was developed under the referenced CRADA with the United States of America, Department of the Air Force. This confirmatory license documents the paid-up, royalty free, irrevocable, non-exclusive license to practice or have practiced for or on behalf of the Government of the United States of America (“Government”), and hereby grants to Government the irrevocable power to inspect and make copies of the patent application identified below.**

**Title of Invention:**

**Name of Inventor(s):**

**Patent Application Filing Date:**

**Serial No.:**

**I certify that I am a duly authorized representative of Licensors.**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**[Name]**

**[Title]**

**[Address]**

**[Phone/E-mail]**

**APPENDIX B:  
ANNUAL REPORT TEMPLATE**

[Air Force Activity]  
[Collaborator]  
[Title]

CRADA Annual Report

[Start Date] — [End Date]

The CRADA between Air Force Activity and Collaborator was executed on [CRADA Effective Date] for a term of [term] months. All milestones have been met and the projects specified in the Joint Work Plan have been proceeding as planned. The parties consider the CRADA to be a successful collaboration.

**1. Funds.** During the past year, what payments, if any, were provided by Collaborator to Air Force Activity, and when were they received? Specify the total funds received under the CRADA to date.

Payments received by Air Force:

- (1) \$ n on [date 1<sup>st</sup> payment received].
- (2) \$ m on [date 2<sup>nd</sup> payment received].

Total funds received by Air Force in [Report Year]: \$ N.

Total funds received by Air Force under the CRADA to date: \$ M.

**2. Equipment.** During the past year, what equipment or material was provided under the CRADA by either party, and when was it transferred?

No equipment was provided by either party during the past year.  
[Or provide list of equipment]

**3. Inventions.** During the past year, identify any inventions made under the CRADA, and when they were reported to the other party.

None.  
[Or provide list of Inventions]

**4. Technology Transfer.** Identify the benefits of Technology Transfer to the Air Force during the past year (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Provided Air Force with a new capability | <input type="checkbox"/> Developed new technology           |
| <input type="checkbox"/> Reduced Air Force manpower requirements  | <input type="checkbox"/> Improved technology or software    |
| <input type="checkbox"/> Saved Air Force resources                | <input type="checkbox"/> Assisted in the development of the |

(other than manpower)

future workforce

- |  |   |
|--|---|
| <input type="checkbox"/> Developed relationship in local community     | <input type="checkbox"/> Increased Technology Readiness Level (TRL) of Technology |
| <input type="checkbox"/> Developed relationship in S&T community       |   |
| <input type="checkbox"/> Facilitated investment strategy               | <input type="checkbox"/> Facilitated commercialization                            |
| <input type="checkbox"/> Increased Manufacturing Readiness Level (MRL) |   |

**5. Estimated Value of Contributions.** During the past year, the parties estimate the approximate value of their contributions under this *Agreement* as follows:

a. The *Collaborator* contributions:

(1) Personnel / Labor	\$	n
(2) Services	\$	n
(3) Facilities	\$	n
(4) Supplies and Equipment	\$	n
(5) Intellectual Property	\$	n
(6) Other Resources	\$	n
(7) Funds	\$	n
<hr/>		
<b>TOTAL</b>	<b>\$</b>	<b>N</b>

b. The *Air Force Activity* contributions:

(1) Personnel / Labor	\$	n
(2) Services	\$	n
(3) Facilities	\$	n
(4) Supplies and Equipment	\$	n
(5) Intellectual Property	\$	n
(6) Other Resources	\$	n
<hr/>		
<b>TOTAL</b>	<b>\$</b>	<b>N</b>

**6. Description of Activities.** [Provide a detailed description of the activities completed under the CRADA during the past year. Include any completed milestones.]

**7. Issues / Areas of Concern.** [Describe any significant problems or issues.]

**8. Recommendation.** We recommend the CRADA effort continue to expiration. No extension of time is anticipated at this point.

\_\_\_\_\_  
Signature of  
*Air Force Activity TPOC*

\_\_\_\_\_  
Date

**SECTION III:  
SIGNATURES**

**I. Expiration.** This *Agreement* expires 36 months from the *Effective Date* unless duly modified in accordance with Article 7—“*Term of Agreement, Modifications & Termination,*” and attached hereto.


**II. IN WITNESS WHEREOF,** the parties with signature authority have executed this *Agreement* in duplicate, or authorized electronic format, through their duly authorized representatives as follows:

***Collaborator***

***Air Force Activity***

Dennis Andersh  
WSRI Executive Director  
& WSARC CEO  
4035 Colonel Glenn Hwy  
Beavercreek, OH 45431  
937-430-9644  
dennis.andersh@wright.edu

Col Elena M. Oberg  
Vice Commander,  
AFRL 1864 4th Street, B  
15 WPAFB, OH 45433  
937-904-9200  
elena.oberg@us.af.mil

 10 Oct 2018  
Signature Date

 12 Oct 2018  
Signature Date

**III. Action by *Reviewing Official.*** This section is completed at the discretion of the *Reviewing Official*. The *Reviewing Official* must complete this section within thirty (30) *Days* of the date of *Air Force Activity*'s signature above to disapprove or require modification of this *Agreement*.

- This *Agreement* is hereby **APPROVED**.
- This *Agreement* is hereby **DISAPPROVED**.\*
- This *Agreement* **REQUIRES MODIFICATION**.\*

\* An explanation is required by law if *Agreement* is disapproved or requires modification.

 12 Oct 2018  
Signature Date

WILLIAM T. COO LEY, Major General, USAF  
Air Force Technology Executive Officer