



Digital Research Innovation, Validation & Experimentation (DRIVE) Consortium

Request For Proposal (RFP)*

***Eligible applicants must be DRIVE Consortium Members-in-Good-Standing (<https://driveconsortium.org/>)**

OAI-DRIVE-23-P001

Manufacturing at Speed (M@S)

Version 4.0 (May 24, 2023)

Email Proposals to Bob Dirgo at bobdirgo@oai.org

no later than 5:00 pm EST June 11, 2023

Ohio Aerospace Institute (OAI)

22800 Cedar Point Road

Cleveland, OH 44142



1.0 Introduction

The Ohio Aerospace Institute (OAI) is under contract with the U.S. Air Force Research Laboratory (AFRL) to establish a consortium that facilitates the U.S. Air Force's commitment to the transformation of digital practices across its acquisition, operations, and sustainment enterprises. Executed by OAI in collaboration with AFRL, the Digital Research Innovation, Validation and Research Consortium (DRIVE) provides an ecosystem for mitigating transformation risks in U.S. Air Force programs and activities.

Under this Request for Proposals (RFP), OAI is seeking proposals to address and resolve the technical Needs Statement(s) identified in this solicitation. If the Offeror wishes to propose against more than one identified Needs Statement, individual proposals for each must be submitted. **Proposals in response to this solicitation are due by 5:00 pm EST on June 11, 2023, to the attention of Bob Dirgo at OAI, 22800 Cedar Point Road, Cleveland, OH 44142.** Offerors submitting winning proposals will enter into negotiations for subcontracts under OAI's cooperative agreement FA8650-22-2-5720 with the Air Force Research Laboratory (AFRL).

OAI reserves the right to award several, one or none of the proposals received and/or to make an award(s) without discussion. OAI also reserves the right to conduct discussions if it is later determined to be necessary. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, OAI reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that OAI desires to award only portions of a proposal, negotiations may be opened with that proposer. OAI reserves the right to fund proposals in phases with options for continued work at the end of one or more of the phases as applicable.

2.0 Background and Program Description

The purpose of the DRIVE Consortium is to establish a forum for U.S. Air Force organizations, original equipment manufacturers, technology providers, academia and other government agencies to collaborate, in a pre-competitive environment, to manage the development and demonstration of processes, tools, and architectures supporting transformed acquisition and sustainment, for identifying critical business policy and cultural constraints for implementing digital processes and capabilities in business enterprises, and to accelerate their adoption and implementation within the Air Force enterprise and the wider industrial base.



DRIVE was organized to leverage the resources and technical expertise of its members for the accomplishment of selected research activities. This RFP represents the first effort of the Consortium to undertake a project(s) to address a need identified by the Air Force in support of their digital transformation activities. Involvement of the members in projects created through Consortium RFPs will provide Consortium members with the methodologies, demonstrations of processes, tools and architectures required to expand the digital enterprise knowledge base and accelerate the adoption of digital processes within the Air Force and industrial organizations. All projects are supported by research funding provided by the Air Force and by the in-kind contributions of member resources through their commitment and active participation in specific projects of mutual interest.

3.0 Needs Statements – Manufacturing at Speed

Manufacturing at Speed (M@S) is planned to be primarily a risk reduction and integration pilot project focused on evaluating multiple strategies to speed the manufacturing times during the acquisition phase of either new make or system modifications. The specific strategies will be identified, demonstrated, and evaluated for effectiveness and could form a set of solutions that are implementable in current engineering and manufacturing processes. The project is meant to be a showcase that can be promulgated across industry and Air Force manufacturing and engineering communities to motivate change and prepare the thinking of the industrial base to respond when speed is paramount.

Background

Modern warfighting requires rapid response to changing conditions. Lengthy acquisition cycles cannot keep pace with shifts in battlefield conditions and tactics. As the 2018 National Defense Strategy stated (emphasis added):

“Deliver performance at the speed of relevance. Success no longer goes to the country that develops a new technology first, but rather to the one that better integrates it and adapts its way of fighting. Current processes are not responsive to need; the Department is over-optimized for exceptional performance at the expense of providing timely decisions, policies, and capabilities to the warfighter. Our response will be to prioritize speed of delivery, continuous adaptation, and frequent modular upgrades. We must not accept cumbersome approval chains, wasteful applications of resources in uncompetitive space, or overly risk-averse thinking that impedes change. Delivering performance means we will shed outdated management



practices and structures while integrating insights from business innovation.”

Pursuit of the changes needed to support operating at the “speed of relevance” requires complete rethinking of acquisition, development, and test processes across the enterprise. From Interim National Security Strategic Guidance (March 2021):

“...we will assess the appropriate structure, capabilities, and sizing of the force, and, working with the Congress, shift our emphasis from unneeded legacy platforms and weapons systems to free up resources for investments in the cutting-edge technologies and capabilities that will determine our military and national security advantage in the future. We will streamline the processes for developing, testing, acquiring, deploying, and securing these technologies.”

And the 2022 National Defense Strategy Fact Sheet

“...Building enduring advantages for the future Joint Force involves undertaking reforms to accelerate force development, getting the technology we need more quickly, and making investments in the extraordinary people of the Department, who remain our most valuable resource.”

“Streamline rapid, iterative approaches from development to fielding. A rapid, iterative approach to capability development will reduce costs, technological obsolescence, and acquisition risk. The Department will realign incentive and reporting structures to increase speed of delivery, enable design tradeoffs in the requirements process, expand the role of warfighters and intelligence analysis throughout the acquisitions process, and utilize non-traditional suppliers. Prototyping and experimentation should be used prior to defining requirements...”

To fulfill the need to produce winning capability at the speed of relevance, specific and difficult challenges must be addressed during design and production. The implication is clear: a redefined relationship between the AF and its partners in Industry is needed...one which recognizes the inherent constraints of operating across public/private organizational boundaries, but which facilitates changes required to move faster.



There are multiple ways to produce these changes. A focus on critical path activities may reveal opportunities for parallelization of tasks and processes; improved analysis and planning may eliminate mistakes that create delays and rework; advanced supply chain planning may alleviate material or tooling lead time delays, etc. It is also recognized that measuring impacts from any such improvements depends entirely on clear definition of start and end points which represent some aspect of the critical path.

Prior studies and dialog with Industry reveals many potential issues and constraints to be addressed, including (but not limited to):

- Business rules and a Govt-Industry execution model designed with speed as primary consideration.
- Infrastructure enabling rapid analysis and decision making as requirements and designs change and a need to evaluate those changes against manufacturing simulation instead of 'make and break;'
- Enterprise architecture that enables tools and data to be integrated, and used by any of the stakeholders, especially access to a "single source of truth" to drive engineering, design, and mfg. planning/execution (including supply).
- Improved engineering tools for subsystems integration (Electrical, fluid, etc.).
- Virtual methods for "verification mgmt." so that every mod does not require a full rerun of A/W and other certifications and to reduce long test development and V&V times; and,
- Supply strategies that alleviate long procurement cycle times for materials, parts, and tooling.

The objective is to develop capabilities and demonstrate efficacy by decomposing these challenges into two parts: (1) utilizing digital manufacturing and digital engineering approaches to accelerate the time from design to manufacture, called M@S.1; and reducing friction in customer-supplier relationships through the use of digital environments that provide higher quality/fidelity data at the time of generation across the manufacturing chain and impact supply chain coordination and effectiveness called "M@S.2." Cost alignment is expressed in the objective statements below.

Proposals submitted for this RFP shall be in response to one of the following identified needs:

M@S.1 – Design through Manufacture

Anticipated government funding: \$4,875,000



The anticipated government funding is an estimate only and not a contractual obligation for funding. All funding is subject to change due to Government discretion and availability.

STATEMENT OF OBJECTIVES

The goal for M@S.1 is to identify, develop, and demonstrate changes in practice, tools, and technology which create a significant, measurable impact on maturation and delivery of capability from design through manufacture.

1. **Baseline:** Identify a use case for analysis of specific tasks, such as a cyber-mechanical subsystem, attritable airframe component, or propulsion subsystem. Clear definition of limitations on speed must be discernable; start and end points for timelines must be concise. Opportunities of interest include significant modifications to existing products, Class I engineering changes, or new product development focused on a verifiable AF requirement. This use case must be scalable to provide a convincing basis for broader implementation and form the basis for all analyses and demonstrations conducted in this effort.
2. **Enterprise Architecture:** Define a potential operating model/enterprise architecture for collaborative Govt-Industry teaming where speed of delivery is the critical “performance” requirement. Included in this could be agile development methodology, continuous analysis-based reviews in lieu of milestones, etc. Identify minimum acceptable data sharing needs to facilitate a “single source of truth” concept. Identify opportunities to incentivize contractors to minimize change and maximize reuse of designs, tools, etc. Execute a demonstration to evaluate the effectiveness of the architecture through a defined real-world engineering scenario, preferably related to the use case identified in (1).
3. **Engineering and Design:** Identify digital engineering analysis capabilities required to support rapid progression and maturation from requirements through design and manufacture. These may be commercially available or in-house tools, or combinations of both. Concepts for improved analysis and planning may include systems engineering trade study and design decision methodologies that allow rapid “ility” trade-offs to be performed during design activities to avoid downstream delays due to quality issues, inadequate process capability, MRBs, etc. These modeling, simulation, and analysis tools must be demonstrated against the use case opportunity identified in (1) thus any additional development, integration, and data preparation must be planned. Advanced computing architectures (multidisciplinary optimization; quantum computing) may be identified where relevant and actionable for this demonstration.



4. **Manufacture:** Define changes in manufacturing process capable of facilitating rapid production for the scalable use case/opportunity identified; examples include tooling reuse, parallelization of tasks, reduction of fasteners, determinant assembly techniques, additive manufacturing for appropriate tooling and components, digital manufacturing approaches that replace artisanal or laborious tasks, etc. Identify data capture needed to support rapid verification and validation, as well as reduced build-test cycles, especially that created during production. Process flow simulation or other virtual manufacturing demonstrations may be desirable in preparation for the M@S demonstration in (6).
5. **Test/certification/qualification/etc.:** A significant amount of time is spent repeating certification/qualification tasks after changes. Define a data and analysis strategy to reduce or eliminate delays due to repeat/restart of these procedures. Demonstrate the suitability of this approach through a mock re-qualification exercise. Additionally, define virtual test strategies to reduce testing times while producing appropriate evidence (e.g., via digital twin techniques); identify which of these will impact measures of interest and develop models and analyses appropriate for successful final demonstration.
6. Based on (2) – (5) above, define and execute a scalable, integrated demonstration of multiple technical elements on the baseline article identified in (1), specifically focused on measures of span time reduction identified.

Based on market research, we anticipate an exemplar proposal might include the following elements:

1. Utilize an attributable aircraft subsystem, such as a wing, for the baseline and all demonstrations. Document the original baseline manufacturing timeline during the original design of the wing. Document the artifacts from the design and manufacturing phases of acquisition. Quantify the number of major re-design/re-manufacture iterations that occurred during that design with associated lead times. The suitability of the use case to the remaining tasks is a key evaluation criterion.
2. Identify a data tech stack architecture for management of the engineering, design, and manufacturing data. Demonstrate the usability of such a system in collaboration with the government as a customer and preferably including suppliers as limited users. Use that stack for the demonstration of the other tasks. In this task, configuration control, version control, permissioning and data access are key metrics, as well as retrieval time for example artifacts and linkages of such artifacts to decisions throughout the acquisition phase.
3. Demonstrate the use of manufacturability assessment methodologies from conceptual through detailed design. Conduct virtual manufacturability analyses that grade design merit based on speed to manufacture and system simplicity and assess against trade with typical design metrics such as performance in an



integrated conceptual design approach. Redesign the wing based on new figures of merit based on manufacturability and speed to delivery. Quantify expected timelines and performance trades.

4. Conduct a manufacturing demonstration of the wing utilizing the new design configuration; emphasize digital manufacturing technologies such as robotic drilling and coating, determinant assembly, virtual manufacturing, and standard materials and processes through a trusted and established supply chain. Quantify manufacturing times and compare to original baseline and conceptual design estimates. Quantify any iterations required to achieve the intended product. Collect digital thread data during digital manufacturing technologies, include in the tech stack.
5. Conduct relatively simple verification tests and utilize digital thread data for verification of specific quality requirements in lieu of other time intensive make and break verifications. Compare T&E results to baseline results and conceptual design predictions. Offer a qualification methodology that leverages "certification by similarity" where possible based on the use of standard materials and processes. Identify key design deviation points from the similarity baseline and test those specifically.

Period of Performance

The period of performance shall not exceed 30 months from the initiation of a contractual agreement.

Cost Share

Cost share for this effort is *strongly encouraged, though not required*.

M@S.2 – Supply Chain Integration

Anticipated government funding: \$7,975,000 which is anticipated to be distributed over multiple awards, with a maximum per award not to exceed \$3.5M.

The anticipated government funding is an estimate only and not a contractual obligation for funding. All funding is subject to change due to Government discretion and availability.

STATEMENT OF OBJECTIVES

A critical barrier to rapid development and production of new capability at the speed of relevance is the serial nature by which part and process engineering analyses are checked and verified, especially when those procedures require identification of new



sources and collaboration across supply chain boundaries. Exchanges of technical data require alignment of engineering tools and standards which are fraught with translation issues, and which create configuration management problems. This project will establish digitally based architectural concepts to facilitate a rapid evaluation of product designs, such as performance validation, producibility evaluation and supply chain risk assessment, under an overall objective of reducing the time to validate new designs by a factor of ten. Expectation is a 24-month effort which includes architectural design and a series of demonstrations, each of which increases in complexity against the overall goal of reducing span time to deliver new capability to the warfighter. Topics of particular interest include (a) data sharing methods to facilitate rapid response in production and delivery; and (b) technologies and processes that enable rapid surge in supply base response.

1. **Baseline:** Identify a use case for analysis of specific supply chain challenges, such as a cyber-mechanical subsystem, attritable airframe component, or propulsion subsystem. Clear definition of supply-oriented limitations/constraints on speed must be discernable; start and end points for timelines must be concise. Opportunities of interest include significant modifications to existing products, Class I engineering changes, or new product development focused on a verifiable AF requirement. This use case must be scalable to provide a convincing basis for broader implementation and form the basis for all analyses and demonstrations conducted in this effort.
2. **Enterprise Architecture:** In support of objectives identified above, define a potential operating model/enterprise architecture for supply chain planning and/or execution where speed is the critical “performance” requirement. Identify changes from baseline processes and potential technology/process gaps. Define cybersecurity considerations for data and IP protection. Where possible identify where data standards (or tool commonality) are a priority. An exemplar proposal might address via a variety of modalities, including (but not limited to):
 - “Shared tech stack” concepts where data, tools, and security services are managed as a collaborative venture between the OEM and key suppliers.
 - Industry 4.0 or IIoT concepts and commensurate contracting mechanisms to facilitate data sharing for near real time insight.
 - Third party “data trust” concepts – outsourcing data handling needs to a third party (e.g., an e-commerce platform) whose capabilities include appropriate cybersecurity, capability for handling technical data translations, and identity-based access to tools and datasets.
3. **Engineering and Design:** Identify analysis capabilities required to support supplier integration during rapid maturation from requirements through design and manufacture, including identification of new sources, collaboration on key design



elements, development of production plans, etc. Concepts for improved analysis and planning may include systems engineering trade study and design decision methodologies that allow rapid “ility” trade-offs to be performed during design activities to avoid downstream delays due to quality issues, inadequate process capability, MRBs, etc. These analysis tools must be demonstrated against the use case identified in (1) thus any additional development, integration, and data preparation must be planned. Advanced computing architectures (multidisciplinary optimization; quantum computing) may be identified where relevant and actionable for this demonstration.

4. *Certification*: If relevant to the use case, identify supplier data capture needed to support rapid verification and validation, as well as reduced build-test cycles, especially that created during production. Process flow simulation or other virtual manufacturing demonstrations may be desirable in preparation for the M@S demonstration in (5).
5. Based on (2) – (4) above, define and execute a scalable, integrated demonstration of multiple technical elements on the baseline article identified in (1), specifically focused on measures of span time reduction identified.

Operations Security Requirements

The contractor shall participate in all activities associated with the disciplines of the organization’s Industrial Security, Information Security, Personnel Security, Operations Security (OPSEC), and Antiterrorism programs, following appropriate measures in each program as required for this particular contract. Security measures are required to reduce program vulnerability from successful adversary collection, exploitation of critical information, and violations of export control requirements. The prime contractor shall ensure all subcontractors, if applicable, conform to these requirements as required by the prime contractor.

Program Protection Plan (PPP) Requirements

Any potential critical program information (CPI) generated as part of this effort will be reviewed to determine the need for a PPP or to be included as part of an existing PPP.

Period of Performance

The period of performance shall not exceed 30 months from the initiation of a contractual agreement.

Cost Share

Cost share for this effort is *strongly encouraged, though not required*.



3.1 Eligible Applicants

All responsible U.S. industrial organizations, academic institutions, and non-profit organizations not barred from contracting with or receiving funds from the United States Government and governmental agencies and who are interested in furthering the development and application of advanced digital engineering and digital manufacturing tools, technology and education are invited to submit a proposal for consideration by OAI. This is in addition to the requirement of being Members-in-Good-Standing within the DRIVE Consortium.

3.2 Type of Subcontract

It is anticipated the funding for this effort will be obligated to award FA8650-22-2-5720, a cooperative agreement from the Air Force to OAI. Accordingly, it is anticipated that the type of award for this opportunity will be issued through a Cost Reimbursement Subcontract.

3.3 Marking

Any use of proposer proprietary information within the proposal should be clearly marked as such on the page(s) in which it is used. Do not use the marking 'Confidential' so it will not be confused with the US Government security classification system categories.

4.0 Proposal Instructions

4.1 Administrative

- Proposals should be emailed to the attention of Bob Dirgo, Ohio Aerospace Institute, at bobdirgo@oai.org.
- Proposals MUST be received **no later than 5:00 pm EST on June 11, 2023.** Proposals received after the deadline will not be considered.
- The multi-document proposal package shall consist of the following:
 - Appendix A – Cover sheet pages 1-5 using template provided
 - Appendix B – Estimated multi-year budget using template provided
 - Appendix C – Identification of Background IP and multi-submission summary using the templates provided
 - Appendix D – Detailed Research Plan (DRP) using the guidance provided – 25 page limit



- Appendix E – Financial Plan using the guidance provided – no page limit (there is also a requirement for a stand-alone Excel budget sheet as explained in Appendix E)
- Information contained must be valid for 180 days after submission.
- Proposals should reference the solicitation number: OAI-DRIVE-23-P001 and title of the relevant Needs Statement.
- Should more than one Needs Statement be addressed, complete individual proposals must be submitted for each.
- The Detailed Research Plan is limited to 25 pages, prepared, and submitted in Microsoft Word format. The page limitation covers all information including indices, photographs, tables, charts, etc. Should proposals exceed the 25-page limit, only the first 25 pages will be considered in the proposal's evaluation. The Statement of Work does not count towards the 25 pages and may be included as an appendix within the Detailed Research Plan Document.
- The sections of the detailed research plan should be numbered. Major section headings (1.0, 2.0, etc.) should be in **bold font**, ALL CAPS and underlined. Minor section headings (1.1, 1.2, etc.) should be ALL CAPS and underlined.
- The body text should be single spaced Arial 12 pt. font with judicious use of bold and italics. Please use left justified alignment for all body text. There should be a 10-pt. space after each paragraph.
- Figures and tables shall be prepared with a minimum Arial font size of 8 pt. with captions centered beneath the figure or above the table.
- An Executive Summary, limited to a total of 1-page and not included in the 25-page limit, is required but will not be scored as part of the evaluation.
- There is no page limitation regarding the Financial Plan, but formatting should follow the guidelines noted above as closely as possible.
- Clearly indicate/mark which pages contain information proprietary of offeror.

Questions:

Questions relative to the RFP requirements must be submitted in writing via email to BobDirgo@oai.org and received no later than 5:00 pm EST on June 5, 2023. Responses will be provided by email to all RFP recipients. For questions of a contractual nature please cc on the email Stephen Warthman at StephenWarthman@oai.org.



4.2 Detailed Research Plan

- In preparing the Detailed Research Plan, please follow the format and requirements of Appendix D.

5.0 PROPOSAL EVALUATION PROCESS, FACTORS AND WEIGHTING

5.1 Initial Screen for Compliance with Proposal Requirements

All proposals will receive an administrative review for adherence to the following RFP proposal requirements on a pass/fail basis. Failed submissions will not be considered further.

- Lead Proposer and project participants receiving funds must identify any Background Intellectual Property that they own or control that shall be required to conduct the proposed project and to implement project results by the DRIVE Members and agree to comply with the DRIVE Consortium intellectual property requirements at the time of project award. Appendix C from this RFP must be included.
- Proposal must address at least one of the topics of the current RFP, and the subject technology at the start of the project shall be within the range of targeted Technology Readiness Level (TRL) 1 to 3 or explain why a higher TRL project should be funded under the guidelines.
- Proposal meets required format, includes all required sections and forms as outlined in the RFP.
- Proposal is consistent with the DRIVE funding requirements and period of performance.
- Includes clearly defined deliverables, success metrics and risk mitigation plan.
- Signed by submitting institution's business official.

5.2 Proposal Evaluation

Subcontract Awards shall be made based on negotiated best value to the Air Force and not necessarily the low bid.

5.2.1 Peer Review

- Conducted and scored by non-competing, knowledgeable DRIVE industry Member and government individuals on a confidential basis



- Review results will be provided to the DRIVE Consortium Governance Board, which is responsible for the final selection and the award of contract funding through the DRIVE Consortium Administrator.

Evaluation Criteria and Weighting

Criterion	Maximum Score
Technical Narrative	
Potential Contribution to the DRIVE Mission, including Pervasive Impact and opportunity for Technology Transition.	25
Scientific and Technical Merit	25
Realism of the Technical Plan	20
Experience and Qualifications	15
Project Management Approach, including Statement of Work, Project Deliverables and Schedule, and Risk Management	15
Business/Cost Plan	
Realism of the Proposed Cost and Schedule	25
Extent to which Costs are Substantiated	10
Nature and extent of cost share, if applicable	15

Qualitative Factors also under consideration

- Impact of implementation barriers due to identified or known Background Intellectual Property.
- Leverage from other relevant proposals and awards.
- Commitment of project participants.

5.2.2 Prioritization by Governance Council Selection Committee

- Selection Committee includes three representatives from the DRIVE Governance Council and two from the Air Force
- Project prioritization
 - Peer review ratings and ranking
 - Relevance to strategic technical/business interests of the industry Members and the Air Force
 - Anticipated benefits if successful
 - Adequacy of the technical plan and metrics
 - Strength and relevant experience of the proposal team
 - Reasonableness of the Cost Proposal



- Effectiveness of the transition plan

6.0 Deliverables

- Data, hardware, software, etc. deliverables are required as described for the Needs Statement being investigated.
- Any software developed must be useable and include a detailed, well-illustrated User's Manual with screenshots and detailed examples/case-studies that show how to utilize each function of the software in a real-world application.
- Any other deliverables specified for the proposal
- Presentation material
- Reports tailored to requirements of the Needs Statement being addressed, but typically include:
 - Monthly written technical status
 - Monthly invoices for work performed in the previous period not to exceed current obligated subcontract value
 - Quarterly Technical Report
 - Quarterly Funds and Man-hour Report
- Additional Deliverables
- Final written report to be delivered 30 days after the completion of technical effort

7.0 Small Business Certification

For small businesses, a small business certification form will be required to be completed and submitted immediately preceding Subcontract Award. If sub-Subcontractors / Consultants are utilized in the Proposal a separate small business certification form shall be utilized/required for each sub-Subcontractor / Consultant.

8.0 Terms and Conditions

Any resulting subcontract under this program will include terms and conditions required by the US Government as well as those required by virtue of the program's association with the DRIVE Consortium.

8.1 Intellectual Property (IP)

8.1.1. Intellectual Property Rights for any work performed on this project will be subject to the terms and conditions specified within the DRIVE Consortium Membership Agreement, Section 4 "Intellectual Property Rights and Access".



8.1.2. Ownership, control, licensing, and rights to use intellectual property developed under this project is governed by the rights in Data provisions of AFRL Contract FA8650-22-2-5720. The Government expects developed technical data to be delivered with at least Government Purpose Rights.

8.1.3. Respondents to this solicitation are required to identify any Background IP (BIP) required to conduct the proposed project, and

- (a) to the extent the disclosed Background IP is made part of or otherwise embodied in Intellectual Property developed under this Project, to grant the DRIVE Consortium through the Consortium Administrator an irrevocable, paid up, royalty free license and/or sublicense to such Background Intellectual Property, but only for the purpose of performing obligations pertaining to the agreed Project
- (b) to provide said Background Intellectual Property with Government Purpose rights but only as it pertains to use of the affected DRIVE Consortium Intellectual Property by the Government.

8.2 Export Control

Information involved in this project will not be subject to Export Control (International Traffic in Arms Regulations – ITAR) 22 CFR 120-131, or Export Administration Regulations (EAR) 15 CFR 710-774.

8.3 Release of Technical Information

At least thirty (30) business days prior to release of any information related to work performed under this project, subcontractor must provide OAI with a copy of the information to be presented or released for review by the DRIVE Consortium Members in order to determine potential disclosure of any Member or Consortium confidential or Proprietary Information or bar the availability of patent protection for said Proprietary Information, and by AFRL. The subcontractor agrees to remove DRIVE Consortium Member confidential and/or Proprietary Information from the proposed publication or presentation, to give good faith consideration to the reviewing Member(s) comments and to protect confidential or Proprietary Information with the same degree of care with which it protects its own confidential and/or Proprietary Information. After receiving permission from OAI on behalf of the DRIVE Consortium and the USAF Public Affairs Office (if applicable), offerors shall have the right to publish or present the results of their work.



APPENDIX A – PROPOSAL COVER SHEETS

DRIVE-RFP-23-P001

Cover Sheet 1

PROJECT SUMMARY

Proposal No. 2023-_____
(Filled in by DRIVE Administrator)

In Response to RFP Needs Statement:

Project Title

Period of Performance: MM YYYY to MM YYYY

Abstract (*Limit 200 Words*)



Cover Sheet 2

Potential Implications for US Air Force and DRIVE Members

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Technology Key Words

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Principal Investigator

Name		Signature	
Title		Date	
Organization		Address	
Phone		Email	

Project Manager

Name		Signature	
Title		Date	
Organization		Address	
Phone		Email	



Cover Sheet 3

Project Title

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Cover Sheet 4

Project Cost Summary

Project Title	
Organization	
Address	
Principal Investigator	

Overall Requested Funding

DRIVE	\$	Duration	(In months)
Cost Share	\$		
Project Total	\$		



Lead Organization

Name		Total Cost (\$) Cost Share (\$)	
Address		Duration	
Responsible Individual		Phone	
Title		E-mail	

Partner Organization

Name		Total Cost (\$) Cost Share (\$)	
Address		Duration	
Responsible Individual		Phone	
Title		E-mail	

Cover Sheet 5

Project Cost Summary

Partner Organization

Name		Total Cost (\$) Cost Share (\$)	
Address		Duration	
Responsible Individual		Phone	
Title		E-mail	

Partner Organization

Name		Total Cost (\$) Cost Share (\$)	
Address		Duration	
Responsible Individual		Phone	
Title		E-mail	

Partner Organization



Name		Total Cost (\$) Cost Share (\$)	
Address		Duration	
Responsible Individual		Phone	
Title		E-mail	

Partner Organization

Name		Total Cost (\$) Cost Share (\$)	
Address		Duration	
Responsible Individual		Phone	
Title		E-mail	



APPENDIX B

Estimated Multi-Year Budget

Name	Lead	Partner	Partner	Partner	Partner	Partner
1. Category						
Salary/wages	\$	\$	\$	\$	\$	\$
Fringe						
Travel						
Equipment						
Materials/Supplies						
Subcontracts						
Other						
Total Direct						
Total Indirect						
Total Cost	\$	\$	\$	\$	\$	\$
Non-DRIVE Funds	\$	\$	\$	\$	\$	\$
DRIVE Funds	\$	\$	\$	\$	\$	\$
2. Sources of Funds						
DRIVE	\$	\$	\$	\$	\$	\$
Participant Cost Share						
Other (I.D.)						
Total Sources	\$	\$	\$	\$	\$	\$
3. Tasks	\$	\$	\$	\$	\$	\$
A.						
B.						
C.						
D.						
E.						
Total all Tasks	\$	\$	\$	\$	\$	\$



APPENDIX C

Exhibit I. Identification of Background Intellectual Property

Project Title	
Organization	
Principal Investigator	

List all known background intellectual property to be used in the conduct of this project or for which access may be required to implement project results:

Inventor / Owner	Title	Patent or Disclosure I.D.

If controlled by a project participant, I understand that a “good faith” commitment to enter into negotiations for a license of this background intellectual property to DRIVE Members may be required as a condition for project funding.

OR

I am unaware of any background intellectual property to be used in the conduct of this project or that may be required for implementation of project results.

Intellectual Property Rights Policy & Confidentiality Statement

As the Principal Investigator at _____ participating in a DRIVE funded Project, I agree to accept and abide by the Intellectual Property Rights Requirements described in the DRIVE RFP, as approved by the DRIVE Governance Council. I understand that I may be the recipient from time to time of information of a confidential and proprietary nature and marked as such as belonging to a participating DRIVE Member organization or of the DRIVE Consortium and shall agree to protect such confidential and proprietary information with the same degree of care as I protect my own confidential and



proprietary information.

I further agree to assist the project participants in their obligation of implementing agreed DRIVE Consortium intellectual property requirements for funded projects. I will do this by encouraging the timely submission of invention disclosures by project participants, clearly identifying such disclosures as relating to the applicable DRIVE Project, and by providing any supporting documentation and information that may be requested from time to time for the purpose of filing patent applications under DRIVE and/or the Inventing Organization(s).

Principal Investigator

Signature	
Printed Name	DATE:



Exhibit II. Multiple Submissions Summary

List all planned or submitted requests for additional funding of this project from sources other than DRIVE.

Date Submitted or Planned Submittal Date	Organization	Decision Date

DRIVE recognizes that projects may be submitted to multiple sources of funding.

The DRIVE Administrator must be informed if other funding is secured and will work with the PI to modify this project scope, as appropriate.

Principal Investigator

Signature	
Printed Name	
Date	



APPENDIX D – DETAILED RESEARCH PLAN

Detailed Research Plans (DRPs) are detailed descriptions of the specific research being performed submitted in the format of a Scientific and Technical Report (in accordance with DI-MISC-80711 – tailored to contractor format). A DRP shall be submitted for each research project proposed to be worked. Before initiation of work on an individual project, a proposal with total estimated costs for the work to be done and project completion schedule shall be provided. Initial DRP changes may take place during negotiations for research projects. It is also anticipated that the DRP may need to be changed as work progresses under certain projects. DRP changes after work begins will require a MOD to the sub-contract agreement

Each DRP will detail the amount of cost share under each proposed project.

Detailed Research Plan Format Example:



Detailed Research Plan

(Can be tailored for each DRP as needed)

Project Title

Period of Performance: MM YYYY to MM YYYY

Project Lead:	Organization Name	Project Partner:	Organization Name
Project Partner:	Organization Name	Project Partner:	Organization Name

Principal Investigator: (Technical Lead)
Name
Title
Organization
Address
Phone
Email
Project Manager:
Name
Title
Organization
Address
Phone
Email

1.0 PROJECT SUMMARY BACKGROUND:

The sections of the Detailed Research Plan should be numbered. The major section headings (1.0, 2.0, etc.) should be in Arial 12 pt. **bold** font and ALL CAPPS and underlined. The minor sections (1.1, 1.2, etc.) should be in Arial 12 pt., ALL CAPPS and underlined.

The body text should be single-spaced Arial 12 pt. font with judicious use of bold and italics. Please use left justified alignment for all body text. There should be a 10-pt. space after each paragraph.



Figures and tables should be prepared with a minimal Arial font size of 8 pts, with captions centered beneath the figure or above the table.

All Detailed Research Plans should have the following major section headings: 1.0 Executive Summary, 2.0 Technical Plan, 3.0 Project Metrics, and 4.0 Special Instructions. Section subheadings are given below but may be tailored in a limited fashion to suit the individual projects. If additional subheadings are required for a project, please add them after the existing subheadings and continue with the numbering given. **ITAR or other restrictions should be called out in an optional section 4.0 Special Instructions and also in 1.0 Executive Summary.**

1.0 Executive Summary

This section should contain a top-level summary of the problem to be solved and potential impact, the technical solution to be pursued including any EWD activities, the metrics to be tracked during the project; the deliverables or major milestones; and the budget. This section should explain the basics of the WHAT, WHY, WHO, and HOW for the project. Please limit this section to one page.

2.0 Technical Plan/Scope

In this section and the following subsections please describe in detail the Technical Plan for the project, including Objectives, Tasks, Workforce/Education and/or other tasks as appropriate.

2.1 OBJECTIVES

In this subsection, please describe the objectives that will obtain as a result of this research and how they meet or exceed the requirements stated within the Needs Statement of this RFP.

2.2 TASKS

In this subsection, please describe the tasks that you will execute in order to realize the stated objectives. Please provide detail on the resources needed to execute the tasks and any gaps in resources that you may have available to you.



2.3 WORK FORCE/EDUCATION

In this subsection, please identify staff personnel that will be executing the tasks and any education needs that may exist in order to enable your staff to fully execute the noted tasks.

3.0 PROJECT METRICS

In this subsection, please identify all project metrics that you will be using to assure a successful completion of the project that meets all stated objectives on-time. Include any leading metrics that you will use to track interim progress as well as final metrics to demonstrate success.

3.1 DELIVERABLES/MILESTONES

Please include a table of the project deliverables and the expected delivery date for each. Please use no smaller than Arial 10 pt. font. Column headers should be in ALL CAPS and **bold**.

DELIVERABLE	DATE
Quarterly funds and Man-hour report	Quarterly
Quarterly Technical Report	Quarterly
Final Report	As cited on each DRP
List any additional deliverables	As cited on the DRP

4.0 SPECIAL INSTRUCTIONS (OPTIONAL)

Clearly define any ITAR or other restrictions, Program Classification, Place of Performance, GFP, Fundamental Research, Special Requirements/Constraints, or other special instructions in this section.



Appendix E Financial Plan

All cost and/or pricing data is considered Proprietary. Notwithstanding the DRIVE Consortium Agreement submission of Subcontract cost / pricing data is a requirement. A separate and distinct proprietary information agreement (PIA) shall be established between OAI and the Subcontractor (sub-Subcontractor / Consultant) that shall govern submission of cost / pricing data relative to this Program (DRIVE Consortium) only. Said PIA shall be negotiated / signed between / among the Parties prior to submission of a Subcontractor Proposal. Accordingly, a signed Certificate of Current Cost and Pricing Data may be required of the Subcontractor / sub-Subcontractor / Consultant immediately preceding Subcontract Award (negotiation conclusion).

The cost proposal shall break down the mix and quantity of labor hours to include the direct labor and indirect rates; amount of any materials proposed, the backup for this material, i.e., vendor quotes, catalog pages, etc., any proposed travel, which includes the purpose and destination with the number of persons, etc. by calendar year. ***In addition, please include an Excel spreadsheet (not .pdf) of these proposed costs.***

Cost Element Breakdown: Clear, concise, and accurate cost proposals reflect the offeror's financial plan for accomplishing the effort contained in the technical proposal. As a part of its cost proposal, the offeror shall submit the information outlined below, together with supporting breakdowns. All direct costs (labor, material, travel, computer, etc.) as well as labor and overhead rates should be provided by contractor calendar year (CCY). Detailed cost element breakdowns by Government Fiscal Year or calendar year are not required. The supporting schedules may include summary level estimating rationale used to generate the proposed costs. The cost element breakdown should include the following if applicable.

Direct Labor: Direct labor should be detailed by number of labor hours by category of labor.

Labor and Overhead Rates: Direct labor hours, with their applicable rates, must be broken out and the bases used clearly identified. The source of labor and overhead rates and all pricing factors should be identified. For instance, if a Forward Pricing Rate Agreement (FPRA) is in existence, that should be noted, along with the Administrative Contracting Officer's (ACO's) name and telephone number. If the rates are based on current experience in your organization, provide the historical base used and clearly identify all escalation, by year, applied to derive the



proposed rates. If computer usage is determined by a rate, identify the basis used and rationale used to derive the rate.

Material/Equipment: List all material/equipment items by type and kind with associated costs and advise if the costs are based on vendor quotes, data and/or engineering estimates; provide copies of vendor quotes and/or catalog pricing data.

Subcontractor Costs: Submit all subcontractor proposals and analyses with your cost proposal (See FAR 15.404-3(b)). On all subcontracts and interdivisional transfers, provide the method of selection used to determine the subcontractor and the proposed contract type of each subcontract. An explanation shall be provided if the offeror proposes a different amount than that quoted by the subcontractor. The offeror's proposal must:

- a) Identify principal items/services to be subcontracted.
- b) Identify prospective subcontractors and the basis on which they were selected. If non-competitive, provide selected source justification
- c) Identify the type of contractual business arrangement contemplated for the subcontract and provide rationale
- d) Identify the basis for the subcontract costs (e.g., firm quote or engineering estimate, etc.).
- e) Identify the cost or pricing data submitted by the subcontractor.
- f) Provide an analysis of the proposed subcontract in accordance with FAR 15.404-3(b). Provide an analysis concerning the reasonableness, realism, and completeness of each subcontractor's proposal. If the analysis is based on comparison with prior prices, identify the basis on which the prior prices were determined to be reasonable. The analysis should include, but not be limited to, an analysis of materials, labor, travel, other direct costs and proposed profit or fee rates.

Special Tooling or Test Equipment: When special tooling, and/or test equipment is proposed, attach a brief description of items, and indicate if they are solely for the performance of this particular contract or project and if they are or are not already available in the offeror's existing facilities. Indicate quantities, unit prices, whether items are to be purchased or fabricated, whether items are of a severable nature and the basis of the price. These items may be included under Direct Material in the summary format.



Consultants: When consultants are proposed to be used in the performance of the contract, indicate the specific project or area in which such services are to be used. Identify each consultant, number of hours or days to be used and the consultant's rate per hour or day. State the basis of said rate and give your analysis of the acceptability of the consultant's rate.

Travel: Travel costs must be justified and related to the needs of the project. Identify the number of trips, the destination and purpose. Travel costs should be broken out by trip with number of travelers, airfare, per diem, lodging, etc.

Computer Use: Detail the amount and kind of computer usage, the cost, and how the costs were derived.

Facilities Capital Cost of Money: If Facilities Capital Cost of Money is proposed, a properly executed DD Form 1861 is required.



Amendment No. 1

Digital Research Innovation, Validation & Experimentation Consortium

Program Solicitation

OAI-DRIVE-23-P001

The Program Solicitation referenced above, first issued on May 10, 2023 with modifications on May 10, 2023 and May 18, 2023 by the Ohio Aerospace Institute, 22800 Cedar Point Road, Cleveland, OH 44142 as the DRIVE Consortium Administrator is hereby amended as provided herein on this date May 24, 2023. Changes are noted as follows:

Section 8.0 Terms and Conditions

The original text is replaced in its entirety by the following:

Any resulting subcontract under this program will include terms and conditions required by the US Government as well as those required by virtue of the program's association with the DRIVE Consortium.

Paragraph 8.1.3 The following statement is added for clarification of the Respondents requirement to identify Background IP necessary to conduct the proposed project.

- (c) It is solely at the Respondent's discretion to determine whether any of its Background IP may be necessary for successful completion of the proposed project, and thereby its disclosure. Further, a Respondent is not required to disclose any of its intellectual property relevant to the proposed project prior to establishing their desired patent protection, nor shall the disclosed intellectual property be deemed relevant to any project other than that for which it is disclosed.



Detailed Research Plan

1.0 PROJECT SUMMARY BACKGROUND

The last sentence of this Section is corrected to read as follows:

ITAR or other restrictions should be called out in an optional section 4.0 Special Instructions and also in 1.0 Executive Summary.

All other provisions of this Program Solicitation remain unchanged and in full force and effect.

The Ohio Aerospace Institute

By: Stephen Warthman

Name: Stephen Warthman

Its: Director, Contracts

Date: MAY 26, 2023