Welcome to CyManII's Informational Webinar:

CyManII 2023 Request for Proposals

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Presenter: Dr. Greg Shannon, Chief Science Officer, CyManII

September 6, 2023

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Agenda

- *CyManII Overview*
- *CyManII Approach*
- *RFP Technical Areas*
- *IUC Information*
- *Award Information*
- *Eligibility Information*
- *Cost Share*
- *Submission Requirements*
- *Evaluation Criteria*
- *Selection Criteria*
- *Key Dates*
- *Questions*

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CyManII Overview

- The Cybersecurity Manufacturing Innovation Institute (CyManII) is one of 18 Manufacturing USA Innovation Institutes designed to revitalize American manufacturing and support domestic manufacturing competitiveness.

- The Cybersecurity Manufacturing Innovation Institute (CyManII) was awarded to the University of Texas at San Antonio (UTSA) under the U.S. Department of Energy (DOE) Cooperative Agreement DEEE0009046. CyManII is a national network that brings together over **$111 million in public-private investment** and more than 50 partners from leading manufacturers and universities across the US. The Institute will implement a national vision for manufacturing cybersecurity that unleashes American innovation for decades to come.

A Public-Private Partnership to Advance U.S. Competitiveness

Institute Goals and Objectives

CyManII's objective is to secure and sustain American leadership in global manufacturing competitiveness by providing U.S. companies, namely small- and medium-sized businesses, with the tools, support, and training needed to secure their energy-efficient smart manufacturing processes and connected supply chains.

Our quantitative goals are to help manufacturers:

- **Save** 1 quad of energy,
- **Mitigate** 1 trillion vulnerability instances,
- **Train** 1 million workers, and
- **Save** $20 billion.

CyManII will achieve these goals by:

- Securing the digital thread
- Creating a cyber-informed workforce
- Developing a network of trusted partners

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CyManII Approach

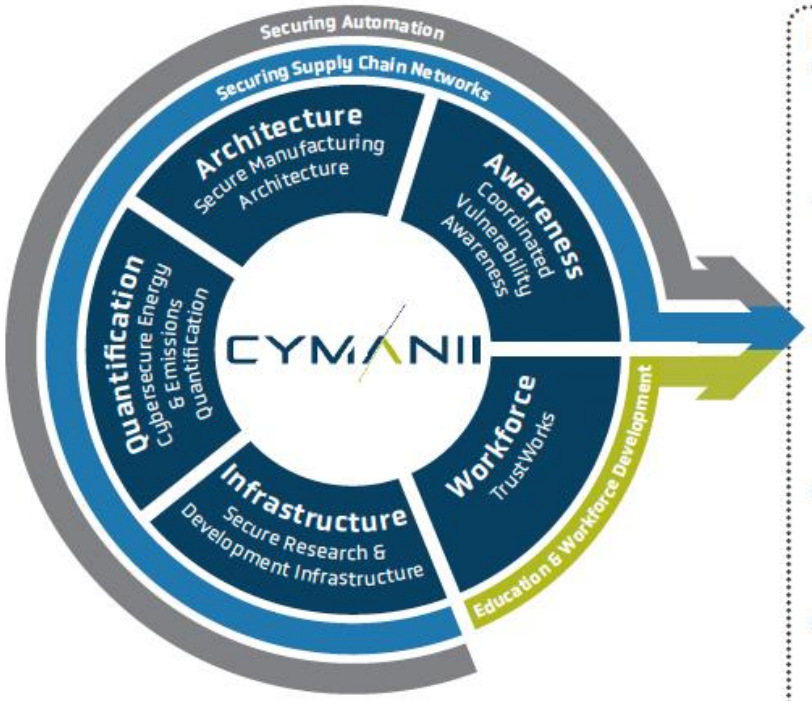
As a National Manufacturing Innovation Institute, CyManII adopts a unique approach to realizing these goals that prioritizes industry involvement, development speed and agility, and early demonstration. Key elements are:

- **The CyManII Roadmap** is a strategic document that outlines the business and technical needs of U.S. manufacturers relative to cybersecurity and energy efficiency. The roadmap specifies a deliberate approach to addressing these needs by detailing research paths.
- **Industry Engagement and Agile Development** We use product owners from industry and an Agile Development process with 2–3-week sprints, each having defined outcomes that are reviewed in sprint retrospectives. Day-to-day project work at CyManII is highly integrated and distributed. CyManII team members are flexible in supporting project teams as required by the SCRUM process.

Integrated Collaborating Teams

CyManII's Integrated Technical Approach – Key Principles

- ε-PURE
- Working together
  - Shared secure environment (TTI)
  - Distributed, diverse
  - Agile/scrum based
- Secure Defensible Architecture
  - Integrated automation & supply chain security
  - Integrated secure cyber, physical, energy
  - Integrated formal methods for security



Key Outcomes:

- **Securely quantified energy productivity**, costs, and emissions to design more securely efficient products, automated process, and supply chain networks
- **Usable and effective cyber-secured architectures** for product-process automation and product supply chain networks to reduce downtime and accelerate adoption of innovations
- **Federated manufacturing research ecosystem** that allows secure development and evaluation of CyManII innovations and attracts new industry participants from "digital threads" of key sector supply chains
- **Focused industry risk management** on mitigating/preventing categories of vulnerabilities in manufacturing automation and supply chain networks
- Virtual/mixed-mode experiential competency-based cybersecurity **education and workforce development**

Figure 2—The CyManII research themes and key outcomes

Further Details in the Roadmap on CyManII's Approach

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CyManII Approach – Institute Foundational Tasks (IFTs)

These building blocks are driven by the research paths identified in the CyManII Roadmap.

- *Cybersecure Energy and Emissions Quantification* (**CEEQ**) applies baselining techniques for securely quantifying energy productivity, costs, and emissions to guide the design of products, processes, and supply chain networks
- *Secure Defensible Architecture* (**SDA**) designs and develop effective cybersecure architectures for product-process automation and product supply chain networks to reduce downtime and accelerate innovations
- *Secure Research and Development Infrastructure* (**SRDI**) builds a federated manufacturing infrastructure that allows secure development and evaluation of CyManII innovations and establishes the CyManII member ecosystem
- *Coordinated Vulnerability Awareness* (**CVA**) reshapes industry risk management practices around mitigating/preventing categories of vulnerabilities in manufacturing automation and supply chain networks
- *Education and Workforce Development* (**TrustWorks**) provides state-of-the-art support to help manufactures level-up their people to enhance cybersecure, energy efficient production.

See the Roadmap for Further Details

CyManII Approach – Industry Use Case (IUC) Projects

- The purpose of the IUCs is to both integrate our IFT foundational research and to **advance the Technology Readiness Levels (TRL)** of our innovations, thereby helping to accelerate the adoption of these solutions into industry.
- The IUCs will **provide industrial environments** together with practical business constraints and facilitate rapid learnings translatable to commercialization (higher TRL) and future research (lower TRL).
- IUCs will **align to the NIST Cybersecurity Framework** as a key resource for planning, executing, and evaluating activities.

RFP IUC Topic Areas

Industrial Control System IUC (typo: Energy Controllers)

- Demonstrate industry-relevant security controls surrounding the production and associated supply chain of ICS systems to ensure digital integrity and supply chain traceability while improving resilience to a cyber event

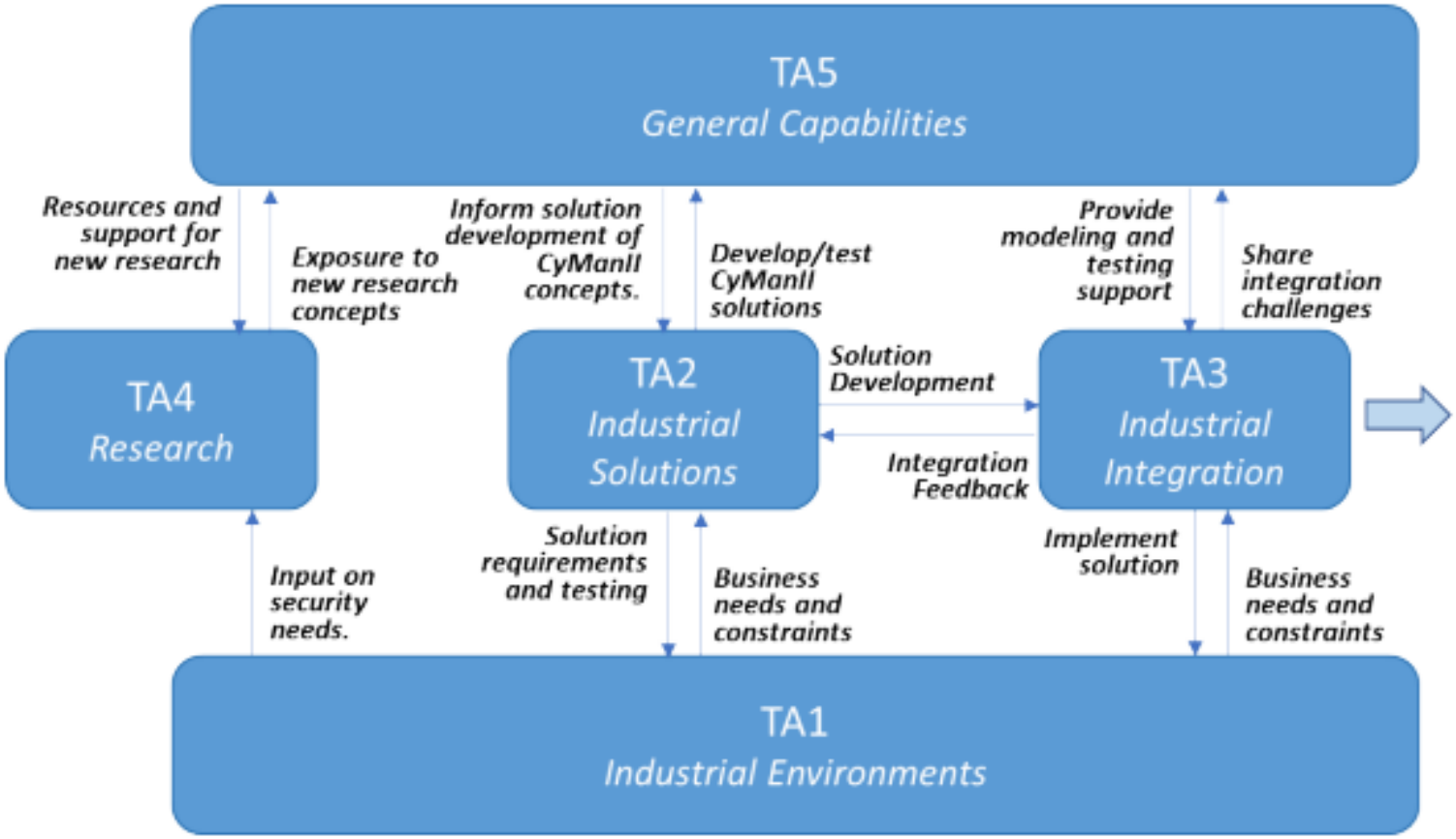
Secure Digitalization IUC

- Demonstrate the application of secure digitalization to a small manufacturing enterprise's digital transformation and to identify and develop good practices, supported by a relevant business case

Additive Manufacturing IUC

- Demonstrate how an additive manufacturer can implement security provenance tracking of their products' digital thread to ensure product integrity and supply chain traceability while reducing costs

RFP Technical Areas – for each Use Case Topic Area



End State: Completed IUC where…

- Industrial environment is secure and energy efficient.
- CyManII-informed tools and solutions have been developed and tested.
- Lessons-learned have been documented and shared.

Integrated Use Cases

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Technical Areas – Integrated Use Case Topic Areas

	Industrial Control System Use Case (Control)	Secure Digitalization Use Case (Optimization)	Additive Manufacturing Use Case (Supply Chain)
TA1 Industrial Environments	Focused on the design, manufacture and testing of industrial control systems	SMM digitalizing for greater competitiveness through energy efficiency, decarbonization, and resiliency to cyberattack	Specializes in additive manuf. processes and already has some degree of digitization
TA2 Industrial Solutions	Develop a secure, energy/carbon efficient logic-protecting solution for the TA1 environment using CyManII's SDA, CPP, CEEQ	CIE/CWE/CSF-based protections of TA2 new/old OT with evidence of reduced cyber-attack costs and reduced energy/carbon	Develop a secure, energy/carbon efficient, file-integrity solution for the TA1 environment using CyManII's SDA, CPP, CEEQ
TA3 Industrial Integration	Deploy & measure the impact of the TA2 solution in a production-level industrial environment	Holistically implement and measure efficacy/impact of the TA2 solution in an actual industrial environment	Deploy & measure the impact of the TA2 solution in a production-level industrial environment
TA4 Research	Use-case relevant innovations in interdependency models, encrypted decision logic, secure IP containers, formalized CWEs	Translatable CIE/CSF-based applied research for secure OT digitization at SMM's, documented as a "playbook"	Use-case relevant innovations in interdependency models, design file integrity, secure IP containers, formalized CWEs
TA5 General Capabilities	10% for use-case relevant foundational roadmap tasks: SMEs, facilities, cross-team communication, resources	10% for use-case relevant foundational roadmap tasks: SMEs, facilities, cross-team communication, resources	10% for use-case relevant foundational roadmap tasks: SMEs, facilities, cross-team communication, resources

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Award Information

Award Type	No. Awards.	Award Ceiling
Industrial Control Systems Use Case	**5**	**$1,700,000 (total)**
(TA1) Industry Environments	1	$240,000
(TA2) Industry Solutions	1	$340,000
(TA3) Industry Integration	1	$340,000
(TA4) Research	1	$440,000
(TA5) General Capabilities	1	$340,000
Secure Digitalization Industrial Use Case	**5**	**$1,500,000 (total)**
(TA1) Industry Environments	1	$250,000
(TA2) Industry Solutions	1	$400,000
(TA3) Industry Integration	1	$400,000
(TA4) Research	1	$200,000
(TA5) General Capabilities	1	$250,000
Additive Manufacturing Industrial Use Case	**5**	**$1,500,000 (total)**
(TA1) Industry Environments	1	$240,000
(TA2) Industry Solutions	1	$300,000
(TA3) Industry Integration	1	$300,000
(TA4) Research	1	$300,000
(TA5) General Capabilities	1	$360,000

Note: Topic Area award ceilings do not sum to IUC award ceilings.

Maximum of 15 months, work to start no sooner than November 1, 2023

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Eligibility Information

Requirements to Receive Funding

- All project team members must be at least a Collaborative-level CyManII member in good standing by the time the project is awarded by CyManII. ***Note: Applicants are not required to hold CyManII membership at the time of submission, but if selected all teaming organizations within the proposal must pursue and be approved for CyManII membership.***
- The Principal Investigator (PI) is approved for access to the CyManII TTI.
- A 20% cost share of the total allowable cost of the project is required.

Teaming

It is likely that a single enterprise does not contain all the Technical Area capabilities required for a single Industrial Use Case, therefore teaming is encouraged and will be considered during evaluation.

- A team ideally includes: a manufacturer, and one or more of the following: a systems integrator, an app vendor, a college or university, a DOE National Laboratory, a machine builder, or Original Equipment Manufacturer (OEM), and other manufacturers, especially small and medium-sized manufacturers. For any teaming arrangement, a lead organization shall be identified.
- Additionally, if an applicant does not provide all the Technical Area capabilities required for a single Industrial Use Case, they may submit a proposal to address only those Technical Area to which they can address. If selected, CyManII will facilitate post-award teaming to complete the necessary Technical Area capabilities required for a single Industrial Use Case.
- While a single proposal may address multiple Technical Areas, a separate proposal must be submitted for each Industrial Use Case.

All applicants and team members must be domestic entities

Cost Share

- A minimum cost share of 20% of total project cost is required.
- Where teaming occurs, cost share will be considered in aggregate.
- The lead organization must ensure that the cost share requirement is met.
- See 2 CFR200.306 and 2 CFR 910.130 for information on allowable cost share contributions.
- Letters of cost share commitment, signed by a representative with approval to bind the organization, must be submitted with all proposals.
- Any cost share provided through award of a selected proposal may be used to fulfill the cost share requirements of CyManII membership.
- **Example:** For a $100,000 proposal total, at least $20,000 must be cost share, at most $80,000 comes from CyManII/DOE.

Example: $100k total cost has a minimum of $20k Cost Share

Submission Requirements

Proposals must be submitted via email at RFP@cymanii.org.

Please check https://cymanii.org/project_calls for any updates and teaming links.

- Must be written in English Language
- All pages must be 8.5 x 11-inch with margins of no less than one inch on every side.
- Proposals must use Times New Roman or Calibri font, no smaller than 12 points, and at least 1.0 line spacing.
- Tables and figures may use no smaller than 10-point font and at least 1.0 line spacing.
- Proposals must be submitted in a .pdf format.
- Do not include any proprietary information in the proposals.
- RFP templates are in this document's Appendices section.

Non-compliance May Prevent Technical Review

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Submission Requirements (cont.)

A project proposal may respond to more than one Technical Area, but applicants must submit a separate proposal for each Industrial Use Case if they intend to propose to more than one. Each proposal package must contain the following:

- Cover Page and Abstract – Limited to 1 page. APPENDIX A in RFP Document
- Technical Volume – Limited to 5 pages. Provide technical approach to solving the problem statement. Proposals shall identify any risks in meeting the requirements. See APPENDIX B.
- Management Volume – No page limit. Provide CV/resumes of team members, details on any special facilities or other resources available for effort, proposed schedule, and risk assessment and mitigation plan. See APPENDIX C in RFP Document
- CyManII Cost Summary Form – The CyManII cost summary form shall be completed detailing total project costs. One Budget Justification form from each organization expecting an agreement with CyManII shall be submitted. APPENDIX D in RFP Document
- 20% minimum Cost Share Letter of Commitment – Using the template provided in APPENDIX E, provide a cost share letter of commitment that details type, valuation, and benefit to CyManII signed by an authorized representative of the organization. Committed cost share for CyManII membership requirements may be utilized to fulfill this requirement.
- 10% minimum in TA5 (General Capabilities)

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Technical Evaluation Criteria

Technical Merit (Weight: 25%) – The application's technical objectives are clearly stated, well conceived, and technically feasible. The application fully addresses one or more Technical Areas for a single Industrial Use Case as described in Section 1.3 of this RFP. The proposed project has potential to make a valuable contribution to the competitiveness of U.S. manufacturing

Alignment (Weight: 25%) – The proposed project aligns with, and will materially advance, the mission of the Institute per the CyManII Roadmap.

Capabilities and Capacity (Weight: 50%) – Adequacy and feasibility of the proposed approach to achieving the stated objectives of the project. Likeliness that the proposed work can be accomplished within the proposed performance period by the team, given their organizational diversity, experience, expertise, past accomplishments, available resources, institutional commitment, and access to technologies. Clarity, completeness and appropriateness of the project plan and timeline. Clarity, logic, and effectiveness of the project organization, including team members to successfully complete the project. Credentials, capabilities, experience of the key personnel. Adequacy and availability of personnel, facilities, and equipment (both hardware and software) to perform the proposed project within proposed performance period.

Selection Criteria

Following a technical evaluation, applicants must meet the following selection criteria to receive an award.

- Meets strategic goals of the Institute
- Fit with current Budget Period (BP) funding profiles
- Cost-efficient use of CyManII funds and degree of technical amplification/acceleration/innovation with cost share resources
- Cross-industry applicability and broad-based relevance and impact
- Commitment to use of the CyManII Technical Innovation Infrastructure and Institute Approach
- Full compliance with DOE and CyManII requirements
- High-level fit to create balance in the Institute's portfolio of work

A Cooperative Decision between CyManII and DOE

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Key Dates

August

- √ *17th – RFP Release*

September

- √ *6th at 4 p.m. EST – Informational Webinar*
- *29th at 7 p.m. EST – PROPOSAL DUE DATE*

October

- *31st – Anticipated Notification of Selection*

November

- *1st – Anticipated Project Starts (option to work at risk)*
- *17th – Anticipated Award Date*

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Questions and Answers

FAQ page: https://cymanii.org/request-for-proposal-faq-2023/

New Questions: *RFP@cymanii.org*

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