

## **REQUEST FOR INFORMATION**

The DOD invites the University Consortium for Cybersecurity (DoD UC2) to provide white papers on new cyber technologies related to two topics: (a) Achieving Mission Resilience & Anti-Fragility; and (b) Next-Generation Modeling and Simulation, Testing, and Training Tools.

The response format is attached. Responses may address one or both topics; however, each topic must be submitted separately. Institutions may provide multiple responses engaging different faculty teams or subject matter experts. Responses must be succinct and focused.

Any faculty member or group associated with a designated NCAE-C academic institution may submit or collaborate on a response. Responses must include collaboration or coordination with the NCAE-C designated program point of contact (POC); endorsement of the response by the NCAE-C POC is preferred.

### **(a) Achieving Mission Resilience & Anti-Fragility**

The DOD is seeking new approaches to deploy automated, continuous red-teaming and security validation tools in operational, safety-critical environments, such as weapons systems, mission networks, and cyber-physical systems.

These new approaches must provide DOD operational decision-makers with the surety needed to enable deployment and use of autonomic defensive capabilities, as well as advance and integrate software engineering and automated security testing tools throughout the development cycle -- and into fielded systems -- to dramatically increase code quality, reduce bugs, and provide assurance.

In addition, the DOD is searching for leap-ahead technologies that could greatly reduce the time needed to update and patch DOD-embedded and legacy software systems and any new classes of technologies that would support rapid forensics, triage, remediation, and recovery from attacks against SCADA/ICS, weapons systems, and other OT systems.

### **(b) Next-Generation Modeling and Simulation, Testing, and Training Tools**

DOD is seeking technologies that would enable it to improve both the scalability of cyber-relevant modeling and simulation environments, and the fidelity of those environments, without sacrificing on either axis. These technologies should also identify and address the technical gaps that prevent the integration of digital twins and other high-fidelity cyber-physical models into network simulations.

DoD developers and cyber operators are also searching for new technologies that would allow them to move seamlessly between modeling or simulation environments, cyber test ranges, and training environments to accelerate the fielding of new capabilities.

**THIS IS A REQUEST FOR INFORMATION (RFI) NOTICE ONLY. THIS IS NOT A REQUEST FOR PROPOSALS (RFP). NO SOLICITATION IS AVAILABLE AT THIS TIME.**

Format for response to DoD UC2 RFI Number 1

Title page must include:

INSTITUTION NAME

DESIGNATED NCAE-C PROGRAM PATH NAME (as reflected on the NCAE-C Designation Certificate)

DESIGNATED POC NAME, EMAIL AND PHONE/TEXT INFORMATION

TITLE WILL BE EITHER “Response to Achieving Mission Resilience & Anti-Fragility RFI” OR  
“Response to Next-Generation Modeling and Simulation, Testing, and Training Tools RFI”

ANY SUBTITLE ACCORDING TO SUBMITTER PREFERENCE

EXECUTIVE SUMMARY. Provide a one-page overview of the input with primary thoughts and points.

WHITE PAPER BODY. Provide a succinct description of thoughts, analysis, and innovation in the topic of choice. Submissions are limited to 15 pages. Use the following outline to frame your input; include any additional subjects as needed within the total page limit.

- PROBLEM STATEMENT. State the RFI question of choice and your understanding of the topic.
- INNOVATIVE APPROACH. Your thoughts for an innovative approach to the topic/question.
- INSTITUTION TEAM QUALIFICATIONS AND IDENTIFIED PARTNERS. Institution collaboration and a cross-institutional teams approach is allowed and encouraged. Identify the name, associated research background, and experience in the field for each team member.
- PRELIMINARY WORK AND/OR BACKGROUND. Identify any foundational or related work already conducted in this area of discovery or innovation.