Solicitation Number:

RFI-JIFX_FY20_Request_For_Information

Notice Type:

Special Notice

A. INTRODUCTION

The Naval Postgraduate School (NPS) will host quarterly Joint Interagency Field Experimentation (JIFX) events throughout the 2020 fiscal year (FY20). These events are an opportunity to experiment emerging technology in realistic field environments, while exploring technologies that have the potential to address challenges faced by the United States' Combatant Commands (AFRICOM, CENTCOM, CYBERCOM, EUCOM, NORTHCOM, INDO-PACOM, SOCOM, SOUTHCOM, SPACECOM, STRATCOM, and TRANSCOM), the military services (Navy, Marine Corps, Army and Air Force) and other U.S. Government (USG) organizations. The Department of Defense (DoD) is the primary sponsoring entity for this event. Companies, educational institutions, laboratories and other organizations are invited to submit Experiment Proposals that may lead to an invitation to participate in FY19 JIFX events. For a full list of event dates and how to submit an experiment proposal, please visit the JIFX website: www.nps.edu/fx

B. OBJECTIVES

(1) Background: NPS will conduct JIFX events in cooperation with Science & Technology (S&T) and operational representatives from the Combatant Commands, military services and interagency partners four times in FY20, one event per quarter. The cooperative JIFX events will be conducted with representatives from Government Research and Development (R&D) organizations, academia, private industry and non-government/non-profit organizations. JIFX events provide an opportunity for technology developers to interact with operational personnel to determine how their technology and ideas may support or enhance USG/DoD capabilities. The environment facilitates a collaborative learning environment between government, academia, industry and NGOs to promote the identification and assessment of emerging and maturing technologies. These events enable rapid iteration on nascent technologies with the direct input of end users.

The overall purpose of JIFX is to: a) accelerate innovation and explore technologies that have the potential to address National Defense Strategy objectives; b) validate capabilities that fit in DOD's seams and gaps; c) rapidly assess a wide range of technologies from small businesses, academia and the defense industry; and d) to provide

a collaborative learning environment featuring easy access for industry, academia, partner nations and other organizations. Submissions that relate to any of the RFI areas of interest will be considered for acceptance. For more information about themes and focus areas for individual events please visit the JIFX website: http://my.nps.edu/fx

(2) Event Dates and Locations: Dates and locations may change due to operational and scheduling requirements. For the most up-to-date information please visit the JIFX website: http://my.nps.edu/fx

20-1 4 - 8 November 2019
Location: Camp Roberts, CA
Focus Area: TBD. Check www.nps.edu/fx
Submission Deadline: 20 September 2019

20-2 2 – 6 March 2020
Location: Camp Roberts, CA
Focus Area: TBD. Check www.nps.edu/fx
Submission Deadline: 8 January 2020

20-3 18 – 22 May 2020
Location: Camp Roberts, CA and Naval Postgraduate School, CA
Focus Area: TBD. Check www.nps.edu/fx
Submission Deadline: 27 March 2020

20-4 17 – 21 August 2020
Location: Camp Roberts, CA
Focus Area: TBD. Check www.nps.edu/fx
Submission Deadline: 26 June 2020

C. SUBMISSION INSTRUCTIONS AND AREAS OF INTEREST

(1) Proposal Process: The submission process is managed through the NPS JIFX website (www.nps.edu/fx). Experiment proposals will be reviewed and selected respondents will be invited to participate in the JIFX event. NPS will provide venue, supporting infrastructure, and assessment (operational and technical) personnel at no cost to invited respondent(s). All respondent's costs including, but not limited to, travel, equipment, regulatory compliance, insurance, and licensing, will be at the respondent's expense. The JIFX venue will only supply basic venue infrastructure including power, frequency allocation, network access, and working/collaboration spaces. Outside of those basic items, invited respondents should practice self-sufficiency and bring all other resources

necessary to successfully complete their experiment(s). Multiple experiment proposals, each addressing a different technology, may be submitted by each respondent. Submissions will be reviewed by government representatives, service subject matter experts (SMEs), JIFX personnel, support contractors, and NPS faculty, staff, or students (as appropriate). You may submit multiple experiment proposals, however each experiment proposal must address only one experiment.

(2) Security Requirements: Participants should not submit classified information. It is preferred that no proprietary information be included in the experiment proposal. If provided, clearly label any proprietary or other sensitive information in proposals.

(3) Other Special Requirements: DO NOT SUBMIT PROPOSALS FOR FUNDING. SUBMIT ONLY EXPERIMENT PROPOSALS. No contracts will be awarded based on this announcement or any subsequent supplemental RFI announcements. Experiment Proposal submission deadliness may be found on the JIFX website (www.nps.edu/fx).

(4) AREAS OF INTEREST:

PRIORITY #1: AUTONOMY/AUTONOMOUS SYSTEMS/AI/ML/CYBERSECURITY/C3 RESEARCH

PRIORITY #2: QUANTUM NETWORKING/MICROELECTRONICS/SPACE SYSTEMS/HYPERSONICS/SPACE SYSTEMS/MISSILE DEFENSE RESEARCH

SPECIFIC ADDITIONAL AREAS OF INTEREST INCLUDE BUT ARE NOT LIMITED TO:

- **A)** Unmanned Aerial Systems
  - **1)** Unmanned Tethered Aerial System (UTAS)
  - **2)** Group 1 Nano Vertical Takeoff and Land (VTOL)
  - **3)** Group 1 Micro VTOL
  - **4)** Group 1 Short Range / Short Endurance (SR/SE) VTOL
  - **5)** Group 1 SR/SE Fixed Wing
  - **6)** Group 1 Medium Range / Medium Endurance (MR/ME) Fixed Wing
  - **7)** Group 2 Long Range / Long Endurance (LR/LE) Fixed Wing
- **B)** Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
  - **1)** Sensors

2) Power and Communications sub-systems

3) Multi- and Cross-Domain UxS

4) Technologies Supporting Swarming UxS

5) Mobile Ad-Hoc Networking for UxS Control

6) Situational Awareness and Control systems

7) HADR applications

8) Logistics and Support applications

9) Intelligence, Surveillance, and Reconnaissance (ISR) applications

10) Autonomy and Semi-Autonomy

11) Human Factors

C) Countering Unmanned Systems

1) Detection, Tracking, and Surveillance Systems

2) Defeat Systems

3) Remote UxS Characterization

D) Communication and Networking

1) Scalable and Mobile Communication Networks

2) Location, Tracking, and Communication Technologies

3) Distributed Spectrum Management

4) Air to Ground Communication

5) Information Exchange and Communication

6) Untethered, Underwater Communication Systems

E) Cyber, Cyber Security, and Electronic Warfare

1) Signature Reductions and Electromagnetic Battle Management

2) Communication and Data Security

3) Network Security

4) Operations in GPS Denied Environments

5) Military Information Support Operations

F) Intelligence, Surveillance, and Reconnaissance (ISR)

1) Remote Sensing

2) Integrated Undersea Surveillance System (IUSS).

3) Persistent ISR

4) Digital Characterization/Classification of Vessels.

5) Maritime C4ISR

G) Situational Awareness

1) Social Media for Situational Awareness.

2) Maritime Domain Awareness

3) Command and Control Optimization, Modeling and Simulation.

4) Maritime Common Operating Picture

5) Maritime Risk, Threat, Analysis and Resilience

H) Defense Support to Civil Authorities (DSCA)

1) Non-combatant Evacuation Operations (NEO)

2) Data Collection during Disaster Response Operations.

3) Mapping in Disaster Environments

4) Technologies Augmenting Current Distributed Health and Preparedness Training

5) Mass Communications Across a Wide Range of Outlets

I) Health and Safety

1) Improved Life-Support and Tracking during Patient Evacuation.

2) Rapid Body and Health Detection and Monitoring.

3) Personal Protective Equipment

4) Detection, Measurement, Sterilization, and Clean-Up of Explosive, Nuclear, Radiological, Chemical, and/or Biological Agents in all Environments.

5) Force Protection Equipment and Wearable Technologies

6) Warfighter Performance Enhancements

7) Reduced Stress of the Force

8) Water Generation and Purification Systems

J) Expeditionary Operations

1) Canine Operations

2) Mine and IED Operations

K) Infrastructure and Power

1) Deployed Infrastructure Building and Maintenance.

2) Deployable Lighting Technologies.

3) Energy efficiencies and Improved Safety

L) Mobility and Transportation

1) Cargo Screening

2) In-transit Visibility (ITV).

3) Mobility Management Solutions.

4) Next generation Combat Rubber Raiding Craft (CRRC).

M) Precision strike, Non-Lethal Weapons, Information Operations

1) Targeting Technologies for Faster, More Precise Engagements.

2) Light Aerial Combat Vehicles.

3) Land domain Non-Lethal/Scalable Effects Engagement.

4) Non-Lethal/Scalable Effects Engagement.

5) Maritime domain Non-Lethal/Scalable Effects Engagement.

6) Air & Space domain Non-Lethal/Scalable Effects Engagement.