A. INTRODUCTION

The Naval Postgraduate School (NPS) will host quarterly Joint Interagency Field Experimentation (JIFX) events throughout the 2019 fiscal year (FY19). These events are an opportunity to experiment emerging technology in harsh, field environments, while exploring the technologies potential to address challenges faced by the United States’ Combatant Commands (COCOMS, i.e. AFRICOM, CENTCOM, EUCOM, NORTHCOM, PACOM, SOCOM, SOUTHCOM, STRATCOM, TRANSCOM), other U.S. Government (USG) organizations, as well as state, local, and non-governmental Humanitarian Assistance and Disaster Response (HADR) organizations. The Department of Defense (DoD) is the 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 COCOMs and interagency partners four times in FY19, 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 working relationship 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) explore technologies that have the potential to rapidly increase military and first responder capability; b) reduce the cost of current capabilities; c) provide options for reducing force structure associated with a capability; and d) to provide a means to work and share more with 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, locations, and focus areas 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

19-1 29 October – 2 November 2018
Location: Camp Roberts, CA
Focus Area: Unmanned Systems and Countering Unmanned Systems
Submission Deadline: 14 September 2018

19-2 4-8 February 2019
Location: Camp Roberts, CA
Focus Area: Unmanned and Autonomous Systems in Humanitarian Assistance and Disaster Response Operations.
Submission Deadline: 7 December 2018

19-3 29 April – 3 May 2019 (Tentative)
Location: Camp Roberts, CA
Focus Area:
Submission Deadline: 15 March 2019

19-4 5 – 9 August 2019 (Tentative)
Location: Camp Roberts, CA
Focus Area: TBD
Submission Deadline: 7 June 2019

C. SUBMISSION INSTRUCTIONS AND AREAS OF INTEREST

(1) Proposal Process: The submission process is managed through the NPS JIFX website. 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). 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 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 COCOM representatives, service subject matter experts (SMEs), JIFX personnel, support contractors, and NPS faculty, staff, or students
You may submit multiple experiment proposals, however each experiment proposal must address only one experiment.

**2) Security Requirements:** Participants should not submit classified information. 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 deadlines may be found on the JIFX website (www.nps.edu/fx).

**4) AREAS OF INTEREST:**

**PRIORITY #1: UNMANNED AND AUTONOMOUS SYSTEM RESEARCH**

_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) UxS Sensors
2) Power and Communications sub-systems for (UxS)
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 for UxS
7) HADR applications of UxS
8) Logistics and Support applications of UxS
9) Intelligence, Surveillance, and Reconnaissance (ISR) applications of UxS
10) Autonomy and Semi-Autonomy in UxS
11) Human Factors in UxS

C) Countering Unmanned Systems
   1) UxS Detection and Surveillance Systems.
   2) UxS Defeat Systems.
   3) Remote UxS Characterization.

PRIORITY #2: OTHER AREAS OF RESEARCH

D) 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

E) Communication and Networking
   1) Scalable and Mobile Communication Networks.
   2) Location, Tracking and Communication Technologies.
   3) Distributed Spectrum Management.
   4) Air to Ground Communication Hardware.
   5) Big Data Computing Architecture
   6) Information Exchange and Communication
   7) Untethered, Underwater Communication Systems

F) Situation 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

G) Humanitarian Assistance and Disaster Response (HA/DR)
   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
H) 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
I) Cyber, Cybersecurity, and Electronic Warfare (EW)
   1) Signature Reductions and Electromagnetic Battle Management (EMBM)
   2) Communication and Data Security
   3) Network Security
   4) Operations in GPS Denied Environments
   5) Military Information Support Operations
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.
6) Air & Space domain Non-Lethal/Scalable Effects Engagement.