Director's Note

My appreciation to everyone who made the journey and persevered through the newest set of pandemic protocols! We hosted one experiment virtually and thirteen experiments at Camp Roberts & the Sea Air Land Military Research (SLAMR) laboratory.
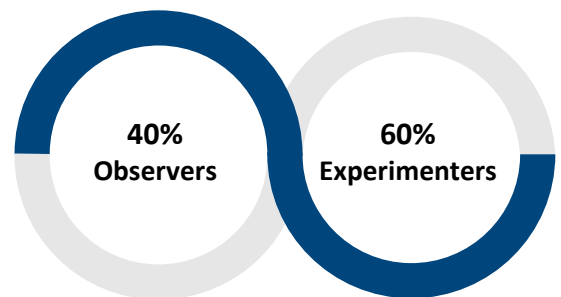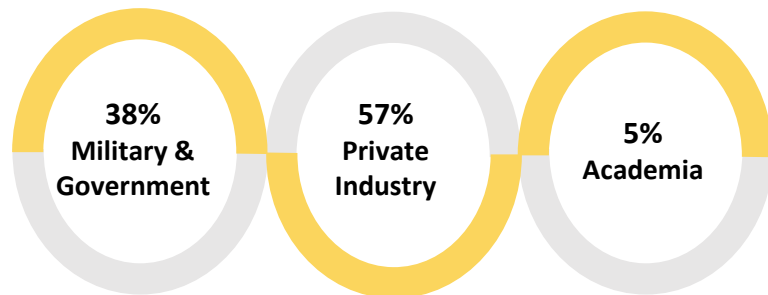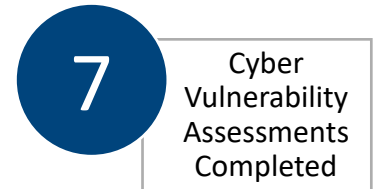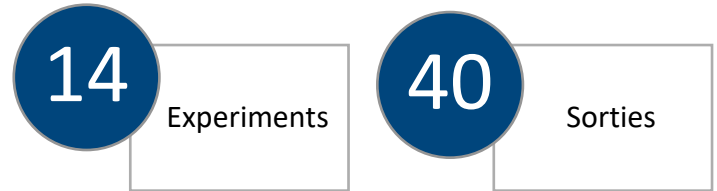
With so many experiments representing emerging systems, **early engagement** was the watch word with lots of discussion about operational applications for these technologies.

Our NPS-AFRL All-Domain UAS C2 experiment leapt toward enabling "whole of country" experimentation connectivity. COPERs saw the highest volume of data yet ingested from systems operating from the Pacific to the Atlantic and including experiments in the San Francisco Bay, Camp Roberts, SLAMR, Wright Patterson AFB, and Fredericksburg, VA.

Our theme for JIFX 22-2, scheduled for 14-18 February 2022, is wildfire identification, response, and suppression. New experiment proposals are due by Tuesday, 23 November. Post your experiment proposals here

For experimenters with systems already approved for use, please complete Part I of the proposal to let us know you plan to participate in February. If all else send me, an email at npsfx@nps.edu

By the Numbers

14 Experiments

40 Sorties

7 Cyber Vulnerability Assessments Completed

130 Total Participants

50 Government & Military Observers

38% Military & Government

57% Private Industry

5% Academia

40% Observers

60% Experimenters

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A) Unmanned Aerial Systems

A-01: Vehicle-Mobile Tethered UAS, Planck Aerosystems

A-02: Microwave Backhaul Solutions (Flying COW), AT&T Drone Operations

A-03: Stability & Optimization: VTOL UAV Shifting Cargo & Tether-deploy Payloads, Rhoman Aerospace

Quad Charts

B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control

B-01: RoboDog, AT&T Public Sector Solutions

B-02: Aerial UAS Sensor Deployment, Nevada National Security Site - Special Technologies Laboratory

B-04: Multi-Institutional All Domain C2 for UXS, Air Force Research Lab and Naval Postgraduate School

D) Communication and Networking

D-01: DuckLink Deployable Sensor and Communications Networks, Project OWL

F) Intelligence, Surveillance, and Reconnaissance (ISR)

F-02: Expeditionary Artificial Intelligence and Behavior Analysis at-the-edge for tactical surveillance, Gantz-Mountain Intelligence Automation Systems Inc.

F-03: Overwatch Imaging AI enabled wide area imaging, Overwatch Imaging

F-04: Expeditionary Power for Artificial Intelligence and Behavior Analysis at-the-edge for Tactical Surveillance Sensor Devices – FeatherLight 16, Ascent Solar Technologies

F-05: Expeditionary Power for Artificial Intelligence and Behavior Analysis at-the-edge for Tactical Surveillance Sensor Devices – MilPak 60E, Ascent Solar Technologies

G) Situational Awareness

G-03: Real-Time Map of Federal Government Hierarchy to Enhance Distributed Human-to-Human Teaming; Command, Control, and Communications (C3); and Crisis Response, Orgo

G-04: modelspace Live: a digital platform for Special Operations, modelspace Incorporated

G-05: Automatic Identification System integration into SA Platforms, San Francisco Wireless Emergency Mesh

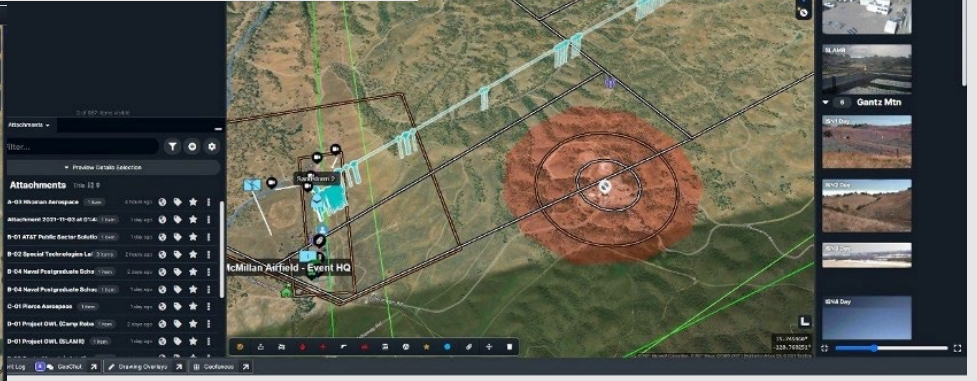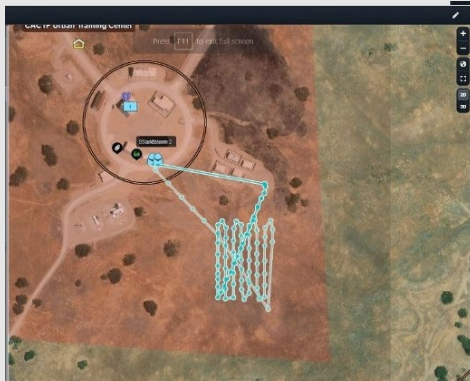## NPS Joint Interagency Field Experimentation 22-1

All Domain Command Control for UxS

Ingested and visualized Cursor on Target (CoT) data from 825x Air, Sea, & Land systems.

Extending UAS Sensing Capabilities

Special Technologies Lab UAS ferry flight from the CACTF to McMillan Airfield to conduct a dual system multi-spectral survey.

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Semi-Intelligent Autonomous All Terrain System

Ghost Robotics Vision 60 quad-legged unmanned ground vehicle validated waypoint navigation and full motion video camera feed via the AT&T Integrated Command Center application transmitting over their 5G mobility network.

Flight Systems

Rhoman Aerospace adaptive UAV control system accounts for shifting system center of gravity.

AT&T FlyingCOW (Cell on Wings) propagates 5G cellular signal.

Planck Aerosystems vehicle-mounted tethered UAS.

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Integrating AIS to Enable First Responder Situational Awareness
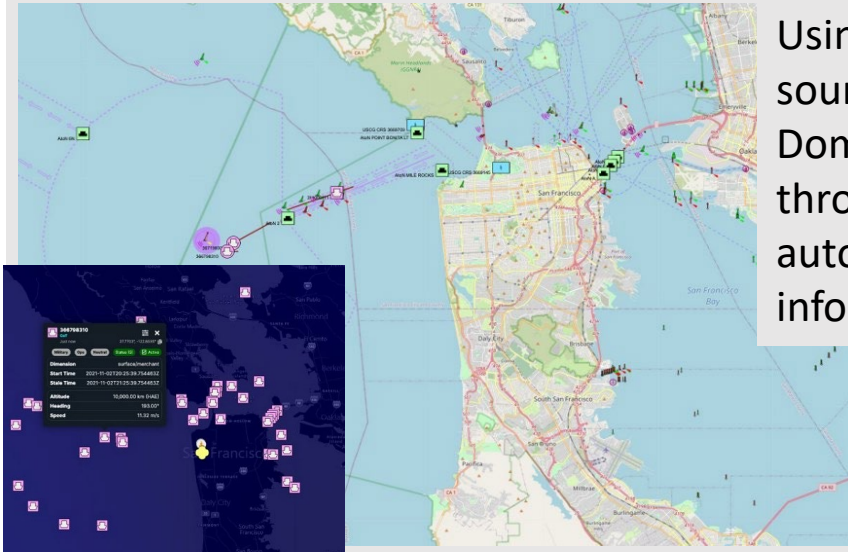
Using COTS hardware running open-source software to enhance Maritime Domain Awareness to First Responders through collection and classification of automatic identification system (AIS) information.

High Resolution Imaging

Overwatch Imaging assessed AI enabled multispectral wide area imagery to improve geolocation and elevation accuracy of photogrammetry based digital maps that support automated ISR missions in austere environments.

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