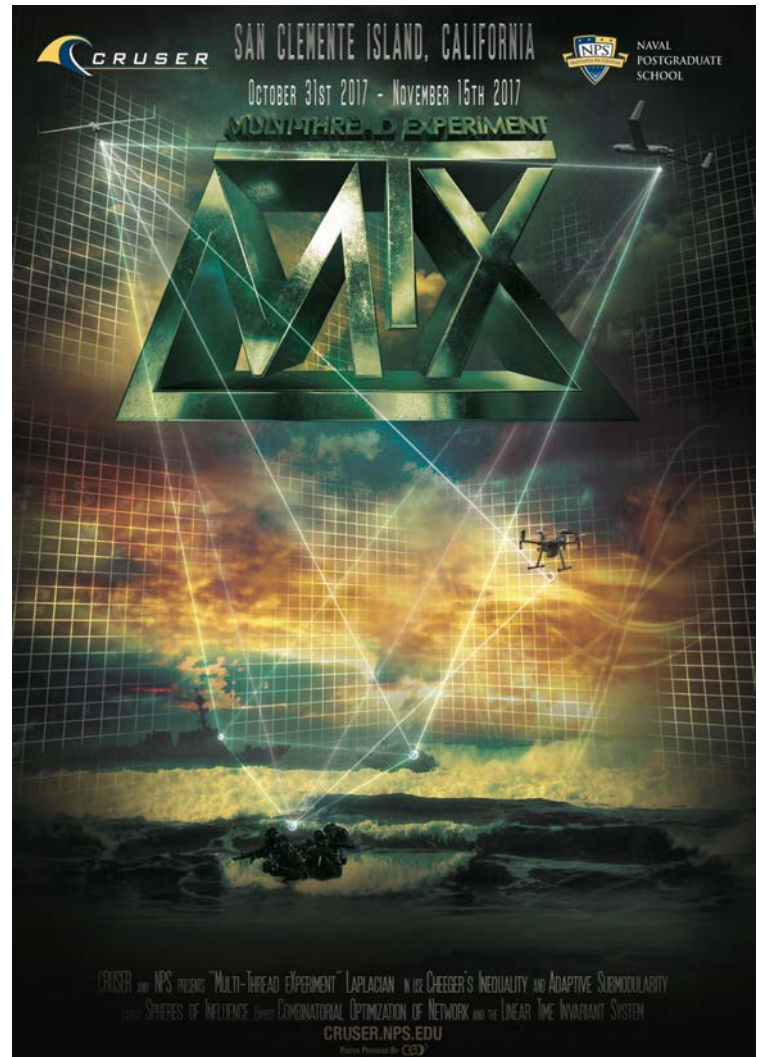# JIFX 18-1 Quicklook

From October 31st through November 15th 2017, a maritime NPS-FX Multi-Thread Experiment was executed on San Clement Island, California. MTX explored a realistic operational scenario in a multi-domain environment: sea, land, and air. This scenario include tactical team operations supported by a guided missile destroyer (DDG) with all sharing data over the UxS control network.

The primary goal of MTX was to advance autonomy of a collaborative UxV Network Control System in a multi-domain environment. The system consisted of two ScanEagles (air), two SeaFox's (surface), two REMUS 100 (subsurface), one Shield AI Quadrotor (air), and a Persistent Systems mesh network. The experiment objectives of MTX where to (1) Initiate development of a unified framework for UxV Network Control System, (2) Support tactical unit route selection through an optimal trajectory 'template' approach for UAV road network mapping, (3) Reduce tooth-to-tail-ratio for UxV operations while harnessing the capability of these systems to more actively support the warfighter, and (4) Gather and analyze data to inform the path and priorities for the future.

The MTX team successfully completed simultaneous surveillance operations in support of the infiltration of a tactical unit on a SeaFox, using the ScanEagles and REMUS 100 vehicles as communication nodes. The mesh network was successfully transferring live video from the ScanEagles and the Shield AI Quadcopters, and NPS students were able to setup an integrated a C3F node with the mesh network.

http://www.nps.edu/fx

MTX By The Numbers

48 total NPS and associated experimenters on San Clemente Island

Scan Eagle flew 5 sorties for a total of 24 hours

Network bandwidth average of 1Mbps

Engaged Network Nodes: 1 tactical team, 1 DDG, 2 UAS, 2 USVs, 2 UUVs

Clockwise from top left: (1) DDG 104, USS Sterett; (2) Technical Operations Center; (3) Sea Fox vehicle (4) REMUS vehicle, (5) Scan Eagle vehicle on the launcher.