THREAT TRACKER (T2)

Program Overview

April 2022
Agenda

• Threat Tracker
  • Team
  • How it works
  • Features
  • Schedule
  • Way Forward
UAS Threats to the DoD

• Unmanned Aircraft Systems (UAS) pose a threat to DoD assets and facilities; the DoD seeks to detect, track, and identify these UAS to educate decisions for potential counter-measures

• Most systems under development that address this problem are bulky and have limited functionality
  • Must be static while operating
  • Specialized equipment or personnel needed to deploy and setup
  • Need infrastructure to operate
  • Only detects based off of RF signature

• Threat Tracker aims to address these limitations in a 2-man portable, small form factor solution
Who We Are

- Persistent Awareness Branch (E26) at the Naval Surface Warfare Center Panama City Division (NSWC PCD)
- Background in intrusion detection for DoD
- Perimeter protection
  - Video Analytics
  - Sensor fusion
- One full-time Technical Lead/Mechanical Engineer
- One full-time Software Engineer
- 3 quarter-time junior level Software support personnel (Software Engineer, Computer Engineer, and a Computer Scientist)
What is Threat Tracker?

• Threat Tracker is:
  • Small form factor UAS detection system
  • For use in mobile or static environments
  • Detects, Tracks and accurately Classifies small UAS
  • No user input needed following initial setup.
  • Utilizes locally developed software incorporating the latest cutting edge techniques and sensor fusion to classify detections from radar data and computer vision technology
Target Acquisition & Identification Process

Radar Initiates detection tracks

Camera slews to and autonomously begins tracking the detected UAS

Video/Radar fused classifications generate alarms

NSWC PCD developed software verifies detected UAS
Portability

• The Threat Tracker system is 2-man portable.
  • Packs and stores in four Pelican cases.
  • Can be checked onto commercial flights.
  • Fits into the back of a minivan while retaining seating for 5.
Rapid Response

• T2 is set up and operational within minutes, not hours or days.
• T2 can be deployed on both static or moving platforms and retain all operational capabilities.
Autonomous UAS Detection

- Operators cannot remain focused on monitoring for drones like a persistent autonomous system.
- UAS counter-measure decision-making timelines are seconds and any actions that need to be taken need must be done immediately and without hesitation.
- The cost to staff a full time operator around the clock becomes unsustainable.
- By removing the human from the loop, staff is available to perform other important tasking.
Future Threat Tracker Development

Target ID and Correlator
- Improved tracking capability

Hardware refinement
- Weatherize system
- Deployment/mounting options
- Power conditioning and backup

Cybersecurity
- Continued system hardening against cybersecurity threats

Additional Sensor Integration
Questions?

Ensuring Warfighting Dominance in the Littoral Battlespace