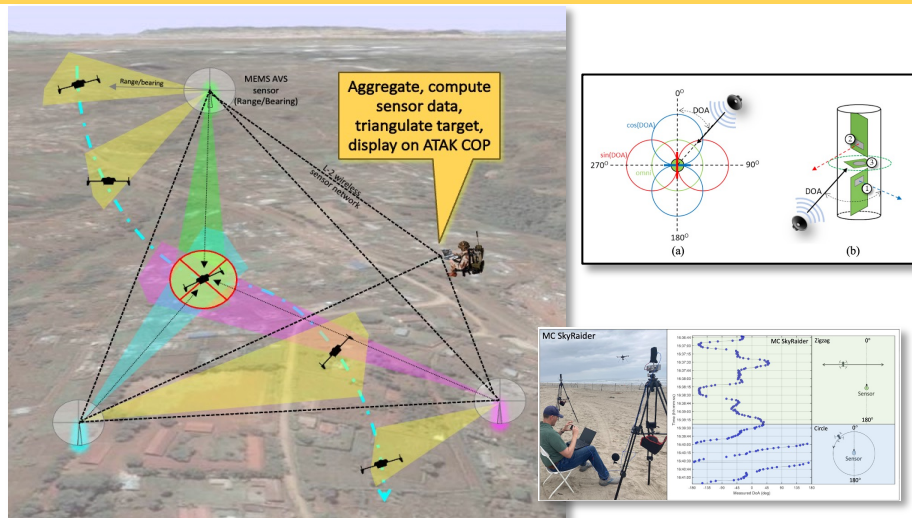


Network Integration of Bio-Inspired MEMS Acoustic Vector Sensors (AVS) for Counter UAS Target Acquisition



Distributed network of MEMS AVS acoustically triangulate threat UAS

Problem Statement

- This crucial phase of the MEMS acoustic vector sensor (AVS) evolution requires the integration of a robust tactical wireless network to relay threat acoustic range/bearing data to the central processing unit for CUAS triangulation and C2 dissemination
- Our approach is to integrate the network protocol stack on the sensor boards, connect them to candidate wireless L-2 technologies (802.11ah, MPU-4, TrellisWare, ..), compute triangulation of CUAS range/bearing data in lab/field test, display on ATAK tablet/PC.

Impact

- What contribution does this work make to your field?

The robust networking of novel, small-scale MEMS AVS nodes is unique and will enable distributed threat detection and potential future integration into air-ground IUAS.

- What is the warfighting impact? Tactical operators require timely, accurate networked CUAS threat sensors that can disseminate track data via the C2 network (CoT)* and be incorporated into the tactical COP for actionable decision making.
- How will you measure success? Accurate triangulation of target UAS data collected in the field via the tactical wireless network and displayed on the Android Team Awareness Kit (ATAK) COP.

Transition

- Who cares? DoD, DHS (S&T Directorate), Naval Warfighting Centers, Services (Army Joint Counter Small Unmanned Aircraft Systems Office, ONR, Marine Corps Warfighting Lab (MCWL), ...
- What are the specific sources of continued support and collaboration? ONR Code 30/32 has supported the evolutionary development of the sensor for air & subsurface applications. It is anticipated that MCWL and other Naval Warfare Centers would find similar interest.

* CoT = Cursor-on-Target (Mitre)