

Attachment 1 – DAGSI Research Topic Template

NOTE: Under the Cooperative Agreement, Technical Directorates have three options for topics. First, a topic can strictly be considered in the pool for the state allocation of funding. DAGSI will work across the TDs for this allocation. Second, the TD can be prepared to be a funding partner with the State of Ohio. This would include: providing additional funds to support additional recipients of a topic, or expand the proposers team to include additional members on a topic. Third, the TD may elect to fully fund a topic not selected for State of Ohio funding or to pursue University teams outside the State of Ohio. Contact lindsay.kotouch.2@us.af.mil for questions.

1. **Research Title:** Advanced Multiplatform and Multisource Fusion
2. **Individual Sponsor:**

Dr. Trevor Bihl, AFRL/RYPAR
AFRL/RYPAR Bldg 620
2241 Avionics Circle
WPAFB, OH 45433-7333
Trevor.Bihl.2@us.af.mil

3. **Academic Area/Field and Education Level**

Electrical Engineering and Computer Science (MS or PhD level)

4. **Objectives:** Current distributed fusion systems do not scale well, information and computation required become prohibitive, for large autonomous swarms where information must be shared across many (100+) autonomous UAVs to come to a collective understanding of a scene or of targets. What is needed are fusion paradigms that scale well in both information shared (bandwidth needed) as well as information and data needed for fusion.
5. **Description:** Large swarm missions required collective understanding to be effective. This project will develop novel data, feature, and/or track fusion methods which scale well in both bandwidth and computational demands for many (100+) cooperative autonomous airborne vehicles. This fusion system must be heterogeneous in nature, supporting platforms with multiple different sensing modalities as well as operate locally with reasonably computing needs.
6. **Research Classification/Restrictions:** Unclassified
7. **Eligible Research Institutions:** Ohio State University, Ohio University, University of Cincinnati, Shawnee State University, Wright State University, Case Western Reserve University

NOTE: Topics submitted to DAGSI must be approved for public release. Need PA Approval # AFRL-2024-4584