Lockheed Martin Team 2 – Rapid Target Identification Through Mini Drone Swarms

Overview
The team has been tasked by Lockheed Martin to develop a swarm of miniature drones that can fly together autonomously and communicate with one another to locate and identify a target. Applications we see these drones completing include; P.O.I. identification, Reconnaissance, and Search and Rescue.

Objectives
● Custom design several drones
● Must have ability to support various sensors and cameras
● Design mesh network for intra-drone communication
● Create swarming algorithm

Approach
● Decided to design two drones
● 3D printed 2 unique frames
● Research other hardware and electronics
● Purchased and integrated all electronics
● Decided on Raspberry Pi B+ processor
● Design mesh network for drone communication

Outcomes
● Successfully built two drones
● Drone supports manual and autonomous flight and implements predetermined missions
● Capability to support multiple sensors and easy plug and play for future improvements
● User interface has been modified to a more user friendly and task specific setup