

System Description

1a. Attach Description of Aircraft System:

The gasoline micro air vehicle (gMAV) also known as the T-HAWK™ system is a self-contained operator portable, line-of-sight reconnaissance and surveillance system. The system is capable of performing manual and automated flight while transmitting live airborne video images of the area of interest. The Global Positioning System (GPS) guided air vehicle employs a gasoline engine that powers a lift-augmented ducted fan Vertical Take-Off and Landing (VTOL) air vehicle containing Electro-Optical (EO) or Infrared (IR) cameras for Reconnaissance and Surveillance (RS) and remote monitoring. The system can be launched and recovered without special equipment on unprepared terrain. Images are transmitted to a Ground Control Station (GCS) enabling operators to navigate, search for targets, recognize terrain, and record information for later use and analysis.

i. AV Structure: The core airframe consists of the engine, duct, fan, stators, vanes, and servos. The primary structure is the duct which is made of carbon fiber.

ii. AV payload: The air vehicle incorporates two modular payloads: gimbaled IR camera and a gimbaled EO camera. The system transmits live airborne video images and location information to a ground control station (GCS) or to a remote video transceiver (RVT).

iii. AV Avionics: The avionics consists of the Flight Management Unit (FMU), Inertial Measurement Unit (IMU), Video Control and Power. The avionics and control system is made up of navigation and system health sensors, RF data link components and electromechanical control devices. The central processing unit runs software that performs autonomous functions, responds to command and control received from the GCS and transmits data back to the GCS. A high level automatic flight control system is executed in the avionics software.

iv. AV Propulsion: The primary propulsion components consist of a gasoline powered motor and a ducted fan. These elements generate propulsive force for the AV in response to commands received from the avionics.



gMAV Block II (T-HAWK™)