

T-HAWK Control Station Description

The GCS is the Command and Control (C2) interface to the AV, which includes flight planning/execution, manual control and video display/storage. The GCS is comprised of the following of the Operator Control Unit (OCU), Ground Data Terminal (GDT), DTC Radio, and Antenna Mast. The GCS provides command and control of the AV, and displays video from the AV's payload cameras. The GCS is capable of storing approximately (b) (3) of video. The GCS provides the Vehicle Operator with control of the system during launch, landing, and flight along with full control of the payload. The GCS may also be utilized as a remote video terminal without adversely impacting the command and control of the aircraft by setting the emission control function on the GCS used as a remote video terminal. Below is a description of the major GCS components and a block diagram.

The training requires that one control station to be used for each air vehicle. It is planned to operate two air vehicles using two separate ground control stations.

i. Operator Control Unit (OCU): The OCU is the primary human interface to the system. The OCU is powered by a rechargeable lithium battery. The OCU can operate approximately (b) (3) A stylist is used as the primary input device. The operator control unit (OCU) is a Panasonic TB19 tablet PC running Windows XP. The OCU hosts the T-Hawk™ Ground Control Station software, used during operation of the T-Hawk™ MAV. The OCU is connected to the Ground Data Terminal (GDT) via High Speed Universal Serial Bus (USB).

ii. Ground Data Terminal (GDT): The GDT consists of a command and control transceiver, a GPS and video compression hardware. The GDT is powered by a rechargeable lithium battery. The GDT can operate approximately (b) (3) The GDT is connected via a serial interface to the DTC receiver to program the desired operational frequency. The GDT/DTC interface also provides power to the DTC radio. The DTC receives video and outputs a composite NTSC video stream to the GDT. The GDT digitizes the video and sends it via the USB to the OCU for use by the Ground Control Station software.

iii. Antenna Mast— The antenna mast is a structural element used to position the omni-antenna and directional antenna above the ground for better radio frequency (RF) line-of-sight to the AV.

(b) (3)