



**Cloud Cap**  
TECHNOLOGY

**TASE Stabilized**  
Imaging Solutions



**UTC Aerospace Systems**

# Cloud Cap Technology

## TASE Operating Environment



### Low SWAP Payload (Size/Weight and Power)

The Cloud Cap Technology line of compact, lightweight camera payloads integrate seamlessly onto a variety of aircraft at a fraction of the cost of comparable imaging systems.

TASE payloads range in weight from only 2.2 lbs to 7 lbs with a minimal electrical power requirement of only 12-30 VDC at 30 watts. Less weight and minimal power requirements translate into increased useful load and increased safety and support for small, less expensive light aircraft (LSA).



### The New Standard in Stabilized Camera Systems

The TASE series of stabilized camera payloads are small, light-weight, and robust with features previously only available on larger, more expensive turrets. Applications include reconnaissance and surveillance (law enforcement and aerial firefighting), aerial surveying, infrastructure inspection (pipeline and utility), mapping, surface vehicles and atmospheric sciences.

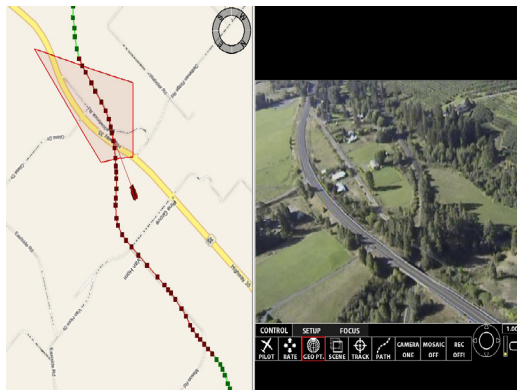
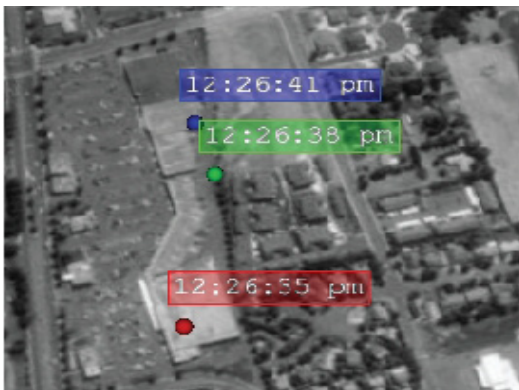
### Advanced Imaging Capability

Thermal (with Longwave and Midwave) imagery is ideal for night surveillance. Short Wave Infrared with (SWIR) camera technology can see thru smoke, fog and haze, giving the viewer the ability to see objects or hazards that would otherwise be difficult to observe. TASE camera payloads provide unmatched image quality over similar camera systems in this class.

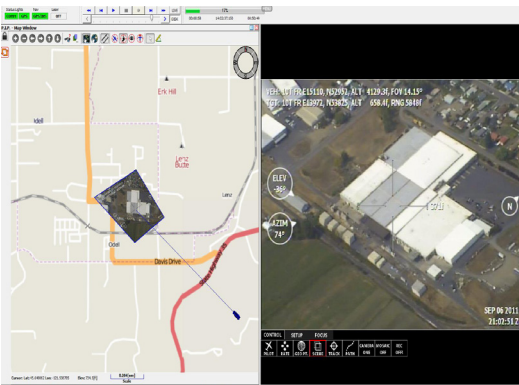


# Cloud Cap Technology

## ViewPoint TASE Payload User Interface



ViewPoint with Geo-Stamp locations (left) and PathTrack feature and map overlay (right).



ViewPoint with video on map (left) and picture-in-picture display (right) simultaneously showing MWIR, LWIR and EO imaging and object tracking.

### ViewPoint Advanced User Interface

ViewPoint is an advanced user interface software application that displays video and command/control for Cloud Cap Technology TASE payloads and is provided with each camera system.

#### Key Features

Video recording and playback with associated payload metadata, real-time display of video and metadata for operational awareness, camera control via joystick, keyboard, and/or touchscreen.

Electronic Stabilization (E-Stab) PC-based image stabilization enhances mechanical gyro stabilization.

Scene Steering (Includes E-Stab) PC-based scene tracking centers image and corrects for vehicle airspeed.

#### Feature Rich Software

**Real Time Image Mosaic** The increased information provided by mosaicing displayed in real-time on the payload interface provides a real advantage to the payload operator, showing path history and a wider situational awareness FOV when zooming in on an object.

**Object Tracking** The TASE payload will autonomously track a selected objects such as people, cars, trucks or other objects moving in the scene based on image match within a user adjustable target box.

**PathTrack** autonomously points the payload toward pre-loaded GPS coordinates along a path. Path-Track auto-detects aircraft heading and picks up the path for tracking.

**Geo-Stamp** allows the operator to designate areas of interest by simply pressing a key or touching the screen. The incident is tagged on a map, a still image is taken and the location is logged in a separate incident folder. The captured still image can be overlaid on Google Earth. This feature is invaluable when a still-image of an object/feature is needed for later reference.

**Video On Map** Live video geolocated and terrain warped over moving map. This feature greatly enhances the operators ability to identify the exact location of the object or feature the camera image is looking at.

Panasonic Toughbook ®



Interactive map displays location and payload sensor footprint on ground. Satellite, streets and maps, or any user supplied map supported.

#### Plugins

**VideoSim Plugin** provides training, demonstration, testing and development support.

**Antenna Plugin** Provides an integrated solution to either Piccolo Command Center (PCC) or the payload user interface (ViewPoint) for control of a third party positioner

## Camera Options

### Long Wave IR Camera

59 mm lens (TASE200)  
HFOV: 10.5°

Dual field of view lens  
(TASE350/400)

HFOV: 15.5° - 6.2°

Resolution: 640 x 480

### Daylight Camera

31x continuous optical zoom

HFOV: 55.7° - 1.94°

Video Out: NTSC or PAL

### Mid Wave IR Camera (TASE400 Series)

10x optical zoom with continuous digital zoom up to 4x

MWIR: 3 to 5  $\mu\text{m}$

Resolution: 640 x 480

HFOV: 22° - 2.2° continuous

### HD Daylight Camera (TASE310/350/400 Series)

30x Optical Zoom

Resolution: 1280 x 720

HFOV: 39.7° - 1.4°

Video Out:

- SD: NTSC or PAL

- HD-SDI: 720P 30Hz

### Spotter Camera (TASE400 Series)

53x fixed zoom

HFOV: 1.06° (SD) / 2.1° (HD)

Video Out: HD-SDI

### Long Range Daylight Camera (TASE400 Series)

1.6x optical zoom element

HFOV: 7.2° - 1.2°

### Extended Range Daylight Camera (TASE400 Series)

164x fixed zoom

HFOV: 0.34° (SD) / 0.69° (HD)

Video Out: HD-SDI

### Laser Options (TASE310/350/400 Series)

Laser illuminator<sup>1</sup> / laser range finder

## Payload Specifications

### Environmental

Operating Temperature Range:  
-20°C to +60°C

### Control Interface

TASE150/200 Series: RS-232, CAN

TASE310/350/400 Series: RS-232, CAN, Ethernet (with adaptor)

### Electrical (TASE310/350/400 Series)

VIN: 10 - 30 Volts

Power: 25W - 50W average, based on payload configuration, 125W (max)

### Electrical (TASE150/200 Series)

VIN: 9-20 volts

Power: 10W average 18W (max) TASE150 / 14W average 22W (max) TASE200

### Mechanical (TASE310/350/400 Series)

Size: 178 x 178 x 260/267 mm (7 x 7 x 10/10.5 inches) based on payload configuration

Turret Diameter: 178 mm (7 inches)

Weight: 3 kg (6.5 lbs) to 3.5 kg (7.75 lbs) based on payload configuration

### Mechanical (TASE150/200 Series)

Size: 122 x 112/115 x 178/192 mm (5.0 x 4.4/4.5 x 7.0/7.5 inches)

Turret Diameter: 112/115 mm (4.4/4.5 inches)

Weight 900 g (1.98 lbs) to 1.06 kg (2.34 lbs) based on payload configuration

### Payload Performance (TASE310/350/400 Series)

Rotation Limits: 360° continuous pan, + 45° / -85° tilt

Slew Rate: 150°/sec

Payload Stabilization: 2-axis, < 75  $\mu\text{RAD}$  jitter

### Payload Performance (TASE150/200 Series)

Rotation limits: continuous pan, + 23° / -203° tilt

Slew Rate: 200°/sec

873 $\mu\text{RAD}$  pointing resolution

## TASE Advanced Imaging

TASE advanced imaging systems with thermal infrared (LWIR/MWIR), shortwave infrared technology (SWIR), and ViewPoint software, combine perfectly to provide the tools needed to deliver quality, accurate imaging information.

## Seamless Integration

Cloud Cap's entire line of compact, lightweight camera payloads integrate seamlessly onto a variety of unmanned and manned aircraft at a fraction of the cost of comparable systems.

## TASE Payload Key Features

Onboard GPS/INS - no external IMU needed for geo-pointing

Fiber Optic Gyro (FOG) stabilization

Common operator interface across TASE family

Environmentally sealed (TASE310/350/400 Series)

Onboard image processing capable of target tracking, scene steering and electronic image stabilization



TASE400 Series



TASE310/350 Series



TASE150/200 Series



### For additional information:

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Payloads



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