Supporting Smart Infrastructure with UAV's

Introduction to AETOS

AETOS Holdings, a wholly owned subsidiary of Temasek, provides integrated and tailor-made solutions that cater to the security & technology needs of a diverse clientele.

In 2014, AETOS set up its UAV division to support the market's need for aerial data acquisition and, more importantly, the information which can be processed from such data

Integrated Data Flow by UAV's

"You can have data without information, but you cannot
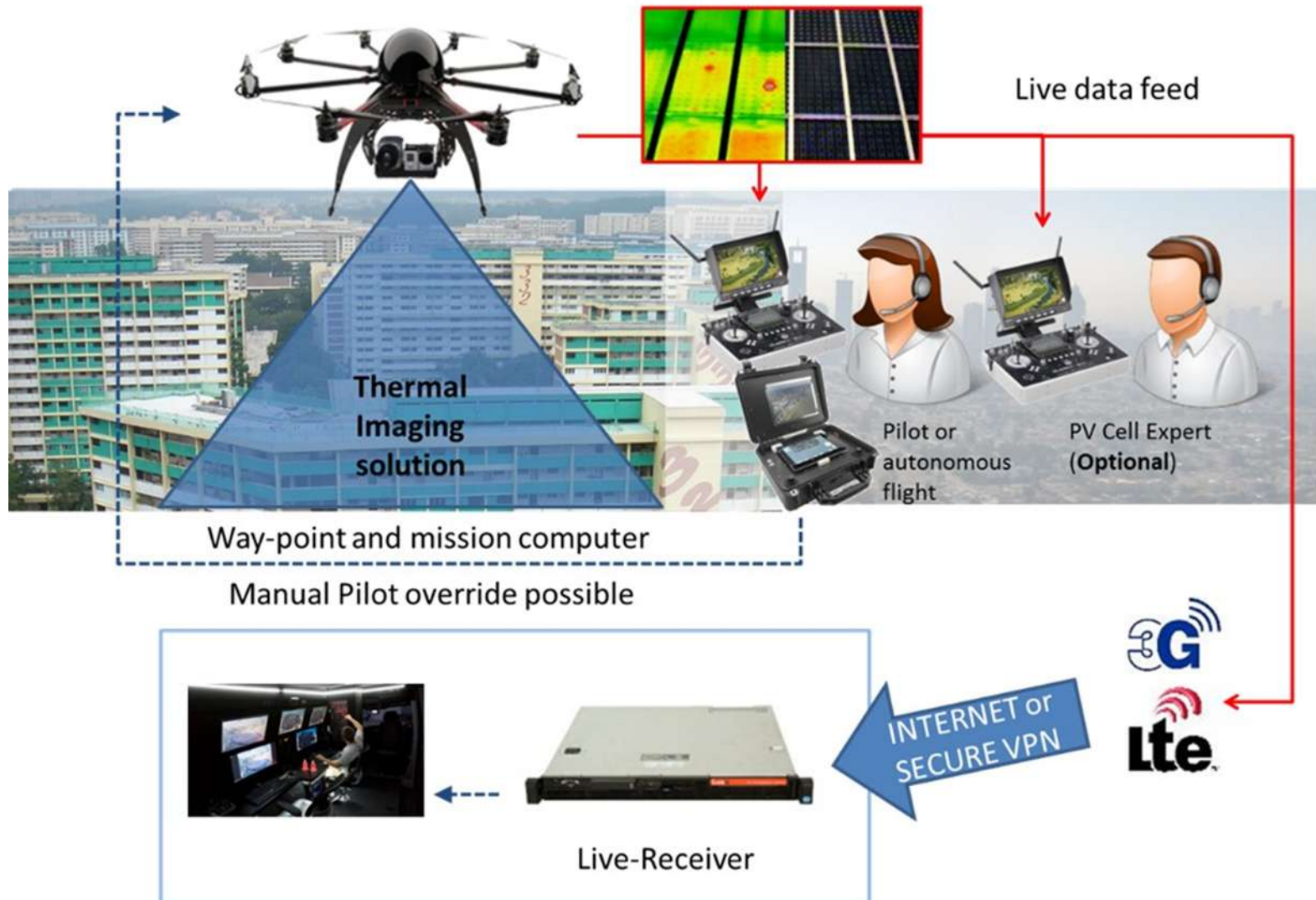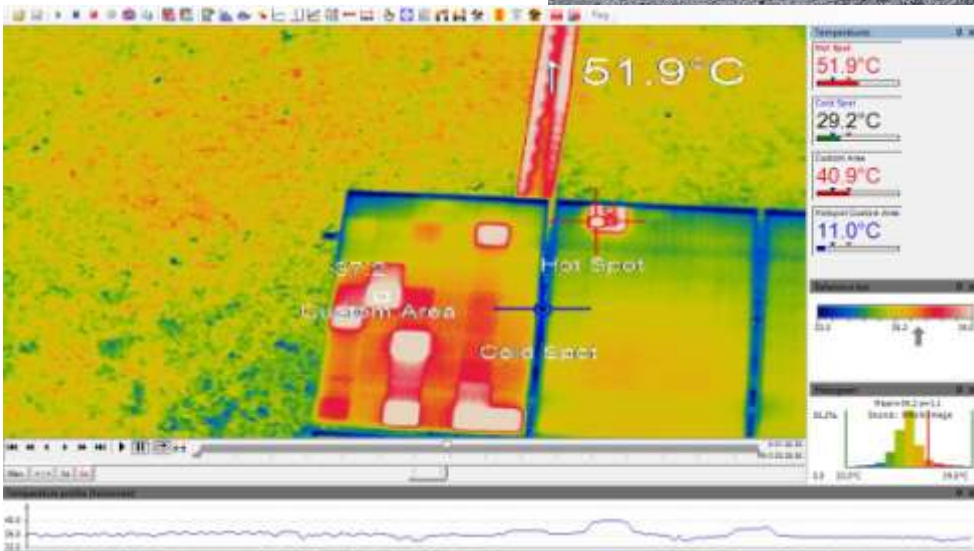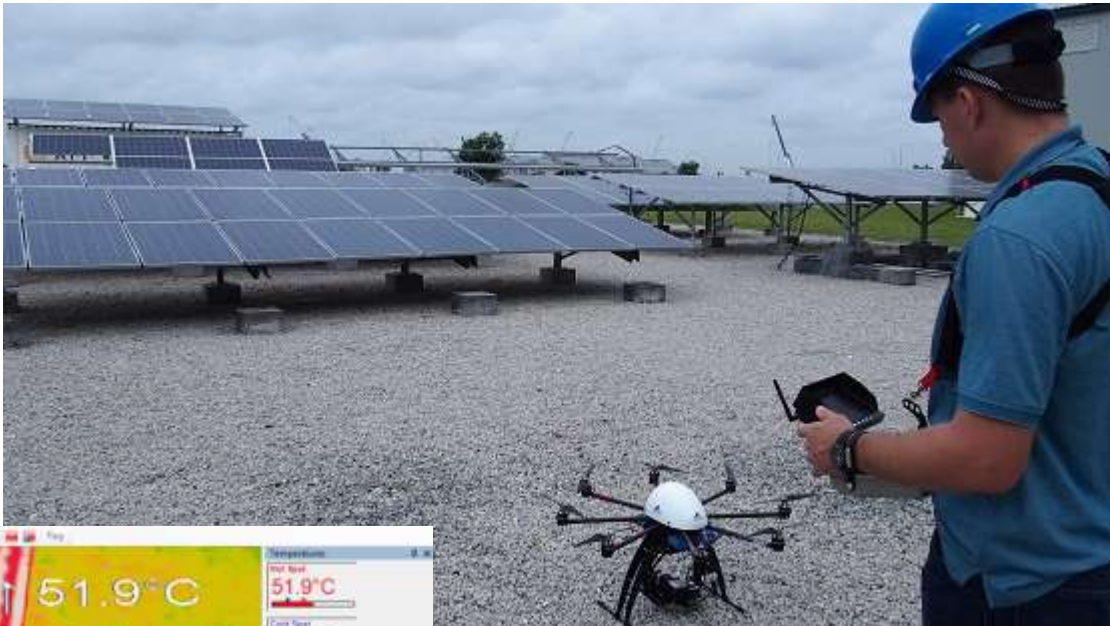have information without data."

Daniel Keys Moran

Data *Acquisition*   **Data** *Processing*   **Data** *Delivery*

Use Case Examples

Solar Panel Analysis

Acquisition & analysis
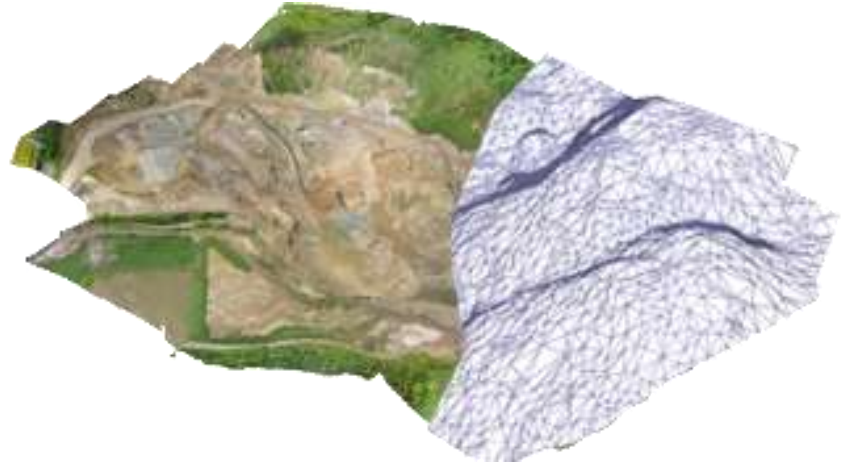
Industrial Documentation

- Accurate picture based documentation of industrial plants
- Repeated identical position through stored flight plans
- Operating even under heavy wind condition
- Industrial maintenance and inspection
- Pipe-line inspections (Photo, Video, Hyper-Spectral, etc.)
- Optional "Live-feed" to a ground station or command center

Example industrial inspection (video)

Industrial Documentation

Digital Terrain Models

Based on autonomous flight, our UAV's are able to create "survey-grade" Digital Terrain Models (DTM) which will allow further post-processing. Used by professional survey companies around the world.

- Measurement of hard to reach objects (landfills, mining areas, dumps, quarries)
- Generate easily point clouds for digital height models
- Create topographic surveys, location -and as built drawings
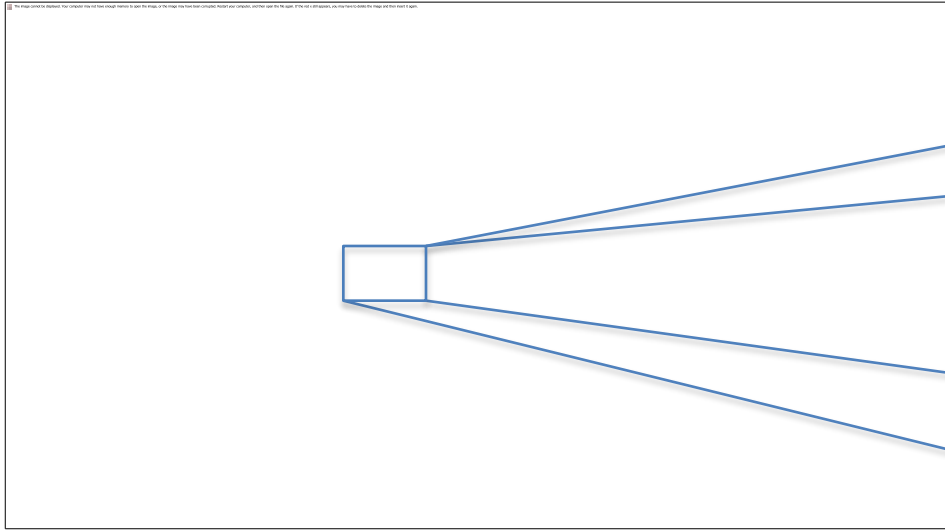- Create volume -and hydraulic models

Live-feed scenario

Live video feed

HD-Quality
25-160x Zoom
Camera

Way-point and mission computer

Manual Pilot override possible

Pilot
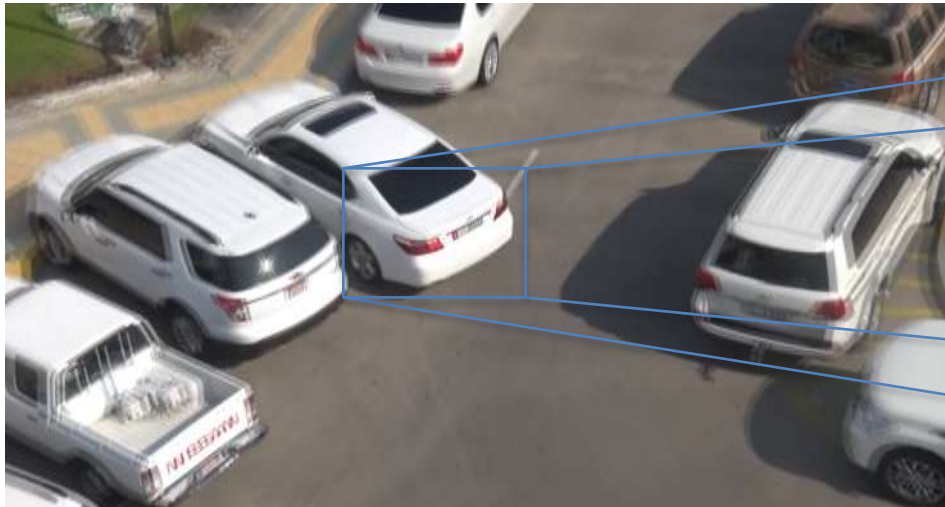
Camera Operator
(**Optional**)

The AETOS UAV allows
for ground units to quickly deploy
the UAV and send a live-feed
to the **command center**.
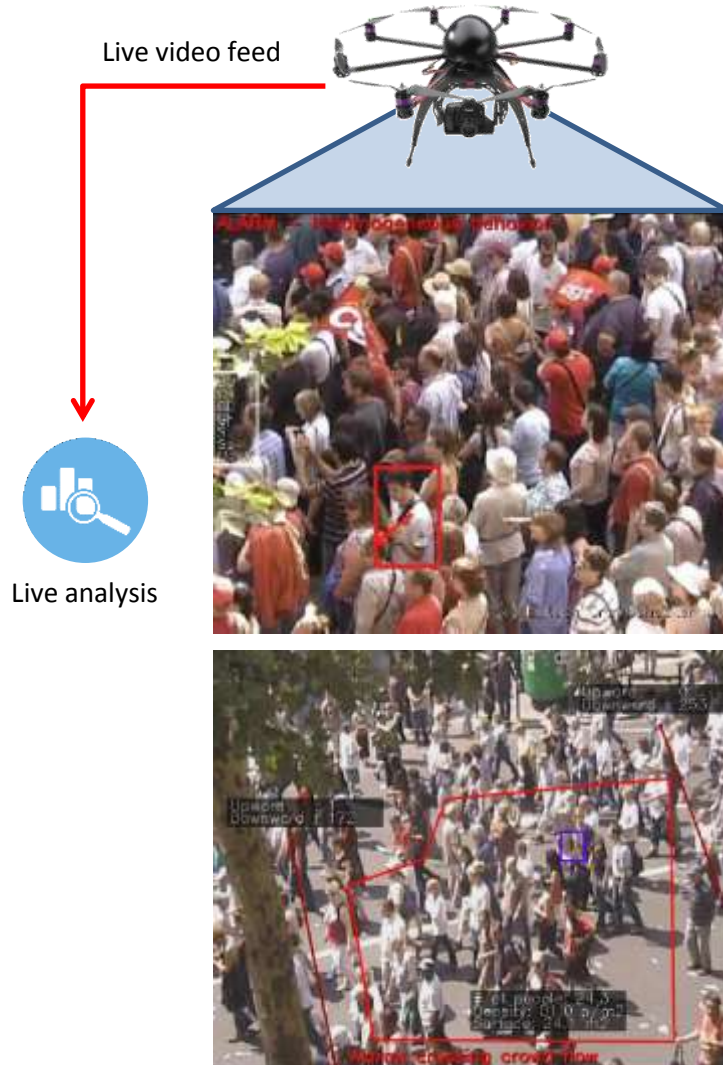Flight can be also performed
fully autonomous.

INTERNET or
SECURE VPN

3G

Lte

LiveU FOR EVERY
LIVE SCENARIO

Command Center

Live-Receiver

Use Case: Live-feed scenario

25-160x digital zoom

Precision HD quality image

Use Case: Live-feed scenario

Live video feed

Live analysis

The UAV based analysis solution complements potentially existing fixed CCTV installations. It offers **on-demand crowd analysis,** whenever needed.

Key Benefits:
- Enhance Major Events Security through crowd supervision and control
- Point of Interest Security
- Support Surveillance activities
- Behaviour analytics
- "Virtual Line" crossing counting (people flow)
- Zone counting (people density)
- Behaviour : reverse walk detection, running, …

Advanced integration

Command Center

Up to 100 drones using 2 way telemetry with indexed and Secure AES encrypted digital radio control
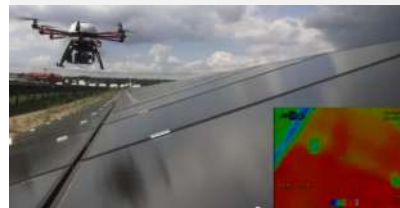
Perimeter Guard Posts

Special Operations Command

Coast Guard

Other current UAV applications

Please contact us to learn more about all the other commercial applications, including:

- Industrial Inspections and Search & Rescue

- Thermal Analysis and Agriculture applications

- Professional Movie & TV productions

Summary

- UAV's today can "react" to sensor data and autonomously gather information

- Increase in safety and efficiency

- Combined with other sensors, they make infrastructure "smart"

Questions:

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