Unmanned Aerial Vehicle (UAV) for OSR

Kornnarong Tungfung

TOP Engineering Corporation Co., Ltd.

What is UAV for?

- Repetitive mission
  - Mapping
- Risky mission
  - Surveillance
  - Air strike
- Prompt-Action mission
  - Emergency situation

Types of UAV

- Fixed wings
- Rotors
  - Single rotor (Helicopte
  - Multi rotors
- Hybrid

Modern UAV Capability

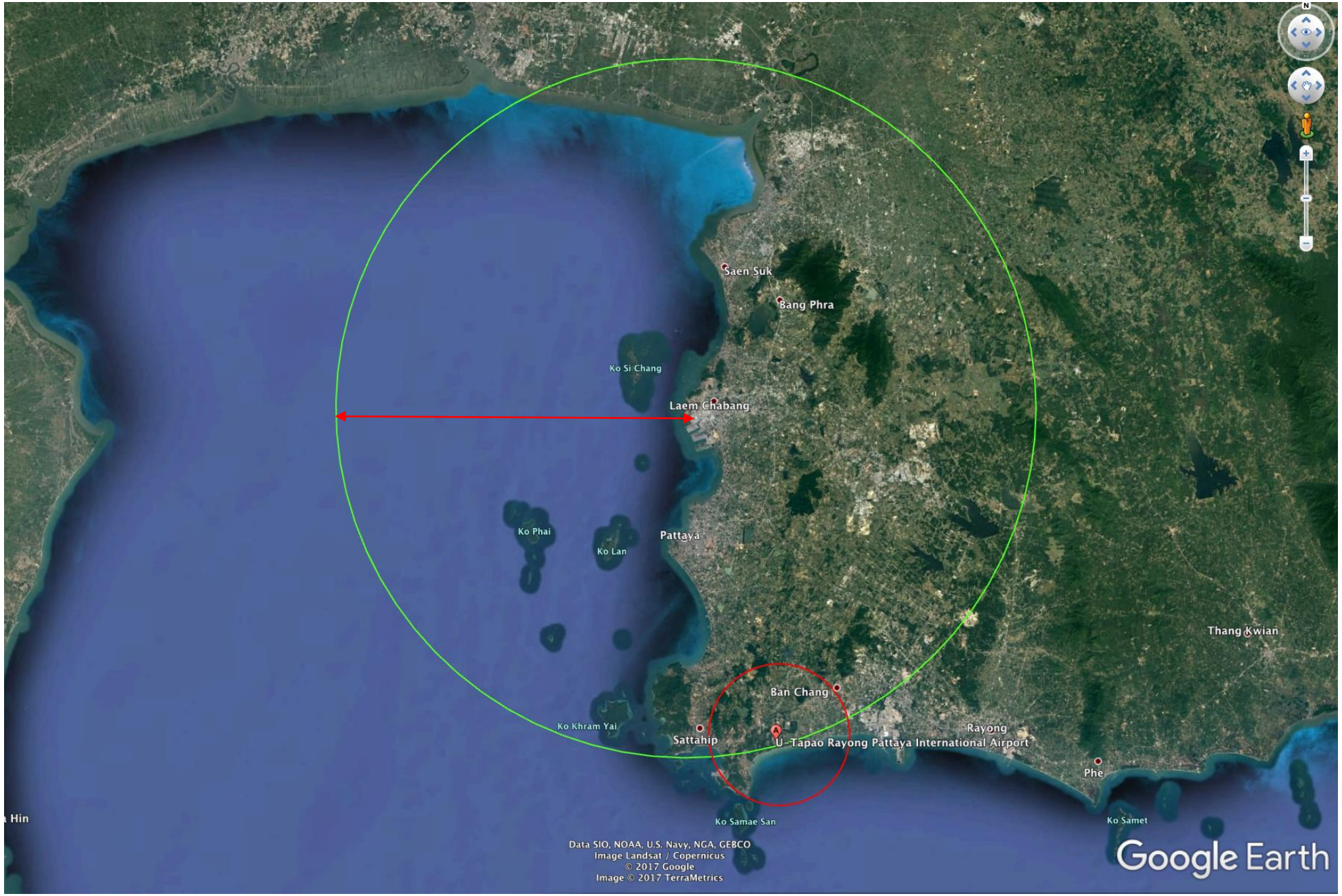
Performance	Data
Maximum Endurance (MTOW)	> 4.2 hours
Endurance 100% hover (MTOW)	> 3.1 hours
Velocity for Maximum Endurance	37 knots IAS (57 km/h)
Velocity for Maximum Range	42 knots IAS (77 km/h)
VNE (Maximum velocity)	70 knots IAS (130 km/h)
Maximum Take-off Weight	21 kg <<= Very important!
Maximum Payload Weight	5 kg
Service ceiling (MTOW)	> 8,000 ft MSL (2,400 m)
Fuel Capacity	5 liters

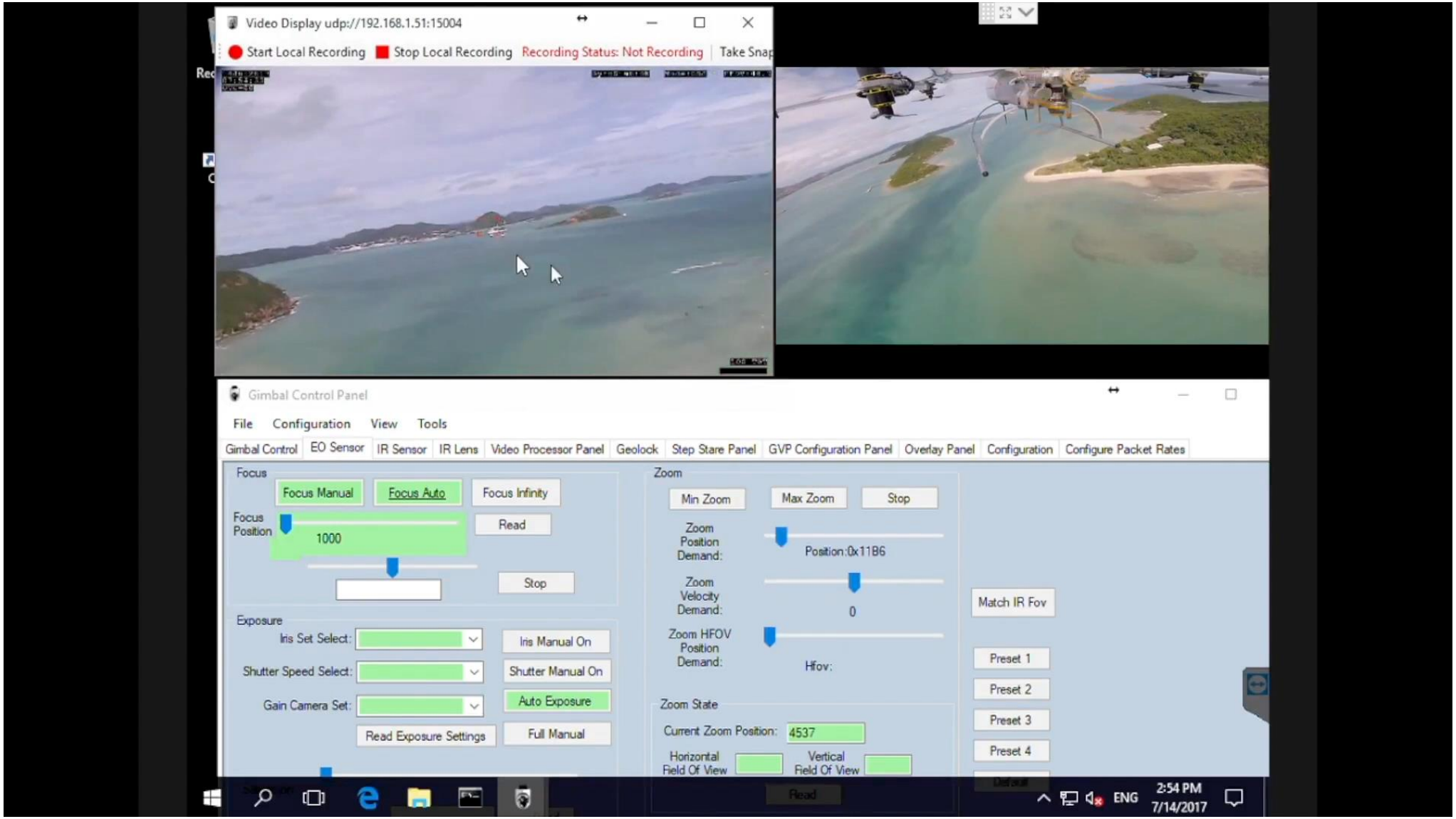
How UAV can assist OSR?

- Provide prompt action
  - Set-up time less than an hour
- Higher cost effectiveness compared to conventional aircraft
  - Smaller cost for acquisition
  - Smaller cost for maintenance
  - Smaller cost for pilotage maintenance
- Less risks associated to both air crews and residential areas
  - Much smaller compared to conventional aircraft
- Able to carry multiple sensors for both day and night mission

Sensors on board

- Electro-optical stabilized
- Thermal Sensor
- Medium-wave IR payloads
- Survey-grade LIDAR systems
- Gas-detection and monitoring equipment


Saen Suk
Bang Phra
Ko Si Chang
Laem Chabang
Ko Phai
Ko Lan
Pattaya
Thang Kwian
Ban Chang
Ko Khram Yai
Sattahip
U-Tapao Rayong Pattaya International Airport
Rayong
Phe
Ko Samae San
Ko Samet
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
© 2017 Google
Image © 2017 TerraMetrics
Google Earth


Video Display udp://192.168.1.51:15004
Start Local Recording
Stop Local Recording
Recording Status: Not Recording
Take Snap
Gimbal Control Panel
File
Configuration
View
Tools
Gimbal Control
EO Sensor
IR Sensor
IR Lens
Video Processor Panel
Geolock
Step Stare Panel
GVP Configuration Panel
Overlay Panel
Configuration
Configure Packet Rates
Focus
Focus Manual
Focus Auto
Focus Infinity
Focus Position
1000
Read
Stop
Exposure
Iris Set Select:
Iris Manual On
Shutter Speed Select:
Shutter Manual On
Gain Camera Set:
Auto Exposure
Read Exposure Settings
Full Manual
Zoom
Min Zoom
Max Zoom
Stop
Zoom Position Demand:
Position:0x11B6
Zoom Velocity Demand:
0
Zoom HFOV Position Demand:
Hfov:
Match IR Fov
Preset 1
Preset 2
Preset 3
Preset 4
Zoom State
Current Zoom Position:
4537
Horizontal Field Of View
Vertical Field Of View
ENG
2:54 PM
7/14/2017

End of Presentation

Questions?