EPIC PICG Wildfire Mitigation Workstream
Dec 2, 2020

Unmanned Aircraft Systems (UAS)
with Advanced Image Processing for
Electric Utility Inspection and Operations
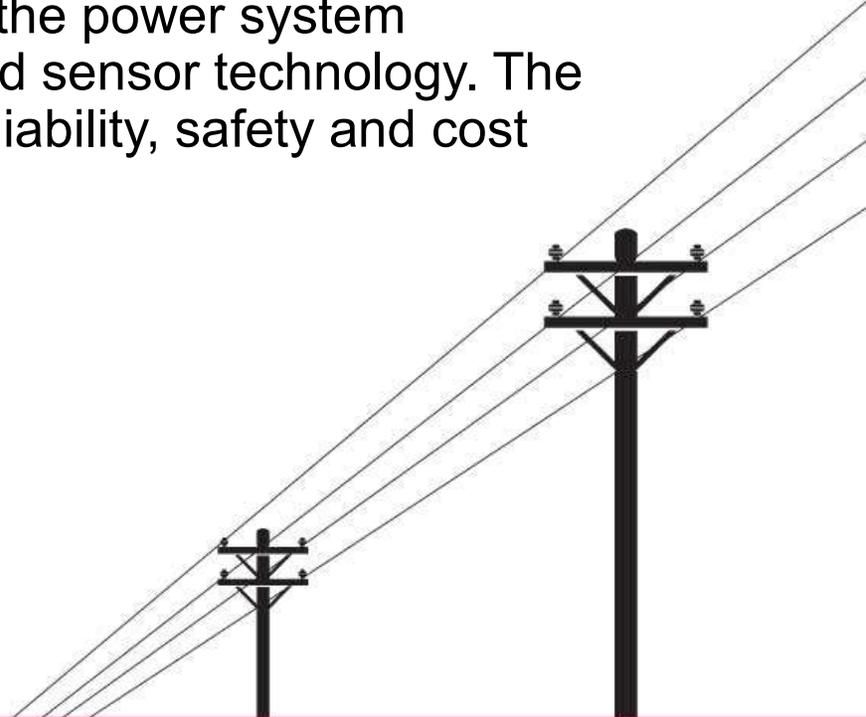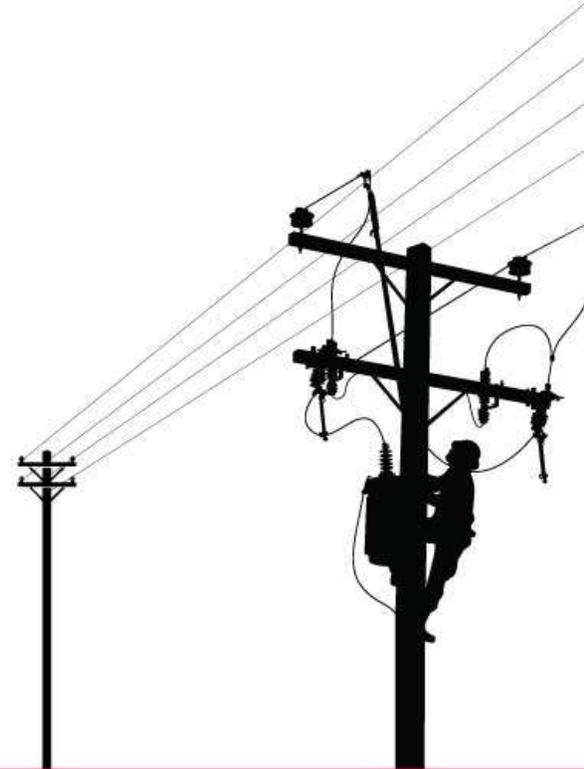
Project Objective

The project will demonstrate new applications of Unmanned Aircraft Systems ("UAS") with enhanced image processing capabilities for electric operations. The project will define, demonstrate and evaluate concepts for instrumentation and monitoring of the power system equipment using enhanced imaging on UAS and sensor technology. The project will evaluate the potential to increase reliability, safety and cost efficiency to improve power system operations.
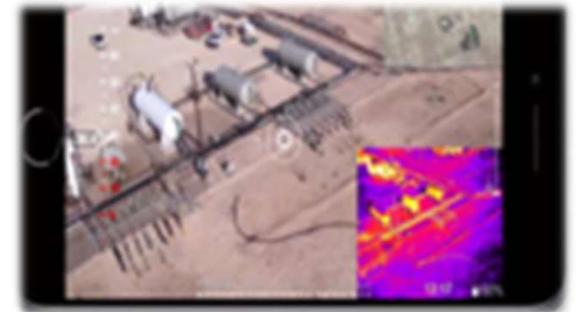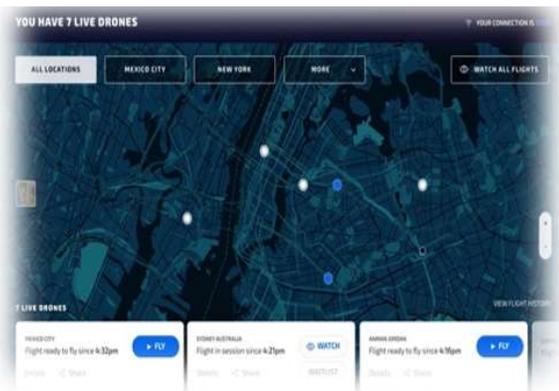
Use Cases

- Aerial Telepresence

- Night Flights/Public Safety Power Shutoff (PSPS)/Wildfire Mitigation Program (WMP)

- Corona Camera

- Tethering

- Sense and Avoid technology

- Line Pulling

- Vertical Take Off and Landing (VTOL)

Aerial Telepresence

Prospective Value:

- Live stream video with no latency
    - Video stream could be viewed by anyone via weblink
    - Assist with situational awareness during fire/weather and other events
- Assessments from your desk
- Ability to manipulate controls from remote locations

Public Safety Power Shutoff (PSPS) / Wildfire Mitigation
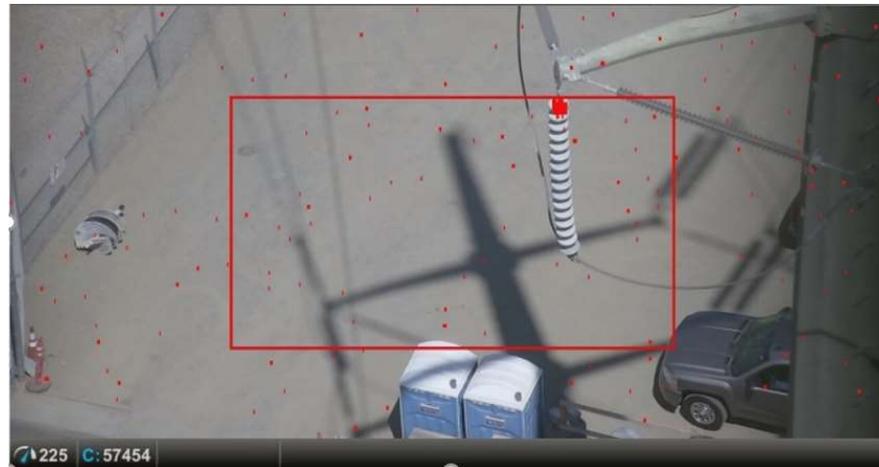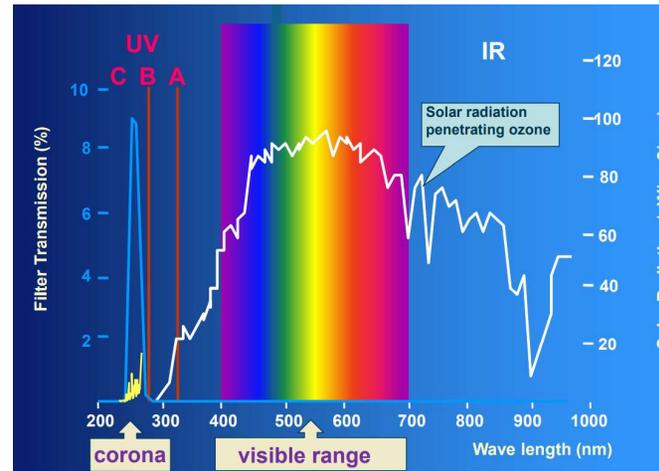
Prospective Value:

- Assist SDGE to patrol, re-energize during PSPS in hard-to-reach areas (foot patrols, small helicopter needed areas).
    - PSPS Pre-Patrols
    - PSPS Post-Patrols
- SDGE has obtained a FAA Waiver to conduct UAS night flights as needed (possible future testing)
- Possibility to support San Diego Fire-Rescue with night flights if needed
- Safety of employees as they would not need to hike into inaccessible areas

Corona

Prospective Value:

Hand-held device currently used is now integrated within the DJI M600 platform. This results in time saving during these assessments as you can fly to multiple locations and collect multiple angles without physically moving.
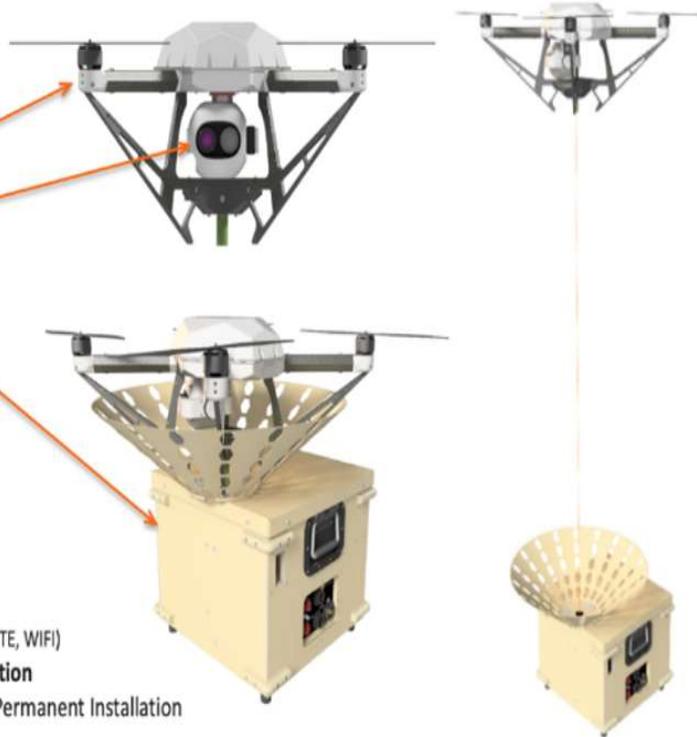
Tethering

Prospective Value:

Provide unlimited power to the drone to fly "all day" in an emergency such as a gas leak situation and many others. Fire Coordination group very interested

System Includes:

1. LiveSky 6205
2. EO/IR Payload
3. Tether Kit
   Including Landing Ring

4. Controller
   ToughPad/PC/Network
   (NOT SHOWN)

Options Include: (not shown)
- Radio Payloads (TSM/TSMX, WaveRelay, MIMO, LTE, WIFI)
- Software Integration Kit for Network Operation
- Mobile and Fixed Enclosures for Vehicle or Permanent Installation

Sense and Avoid

Prospective Value:

- Closer inspection
- Removes risk of flying into or striking any obstacles
- American made.

Line Pulling

Prospective Value:

- Eliminated the need for manned aircraft support.
- Smaller customer impact and minimal FAA approval needed.
- SAFETY!

Vertical Takeoff and Land (VTOL)

Prospective Value:
- Up to 12 hr. flight time
- ADS-B equipped (Automatic Dependent Surveillance-Broadcast)
- Gas powered

Thank you