



**& WILDFIRE  
SAFETY**

# **EPIC PICG Wildfire Mitigation Workstream Dec 2, 2020**

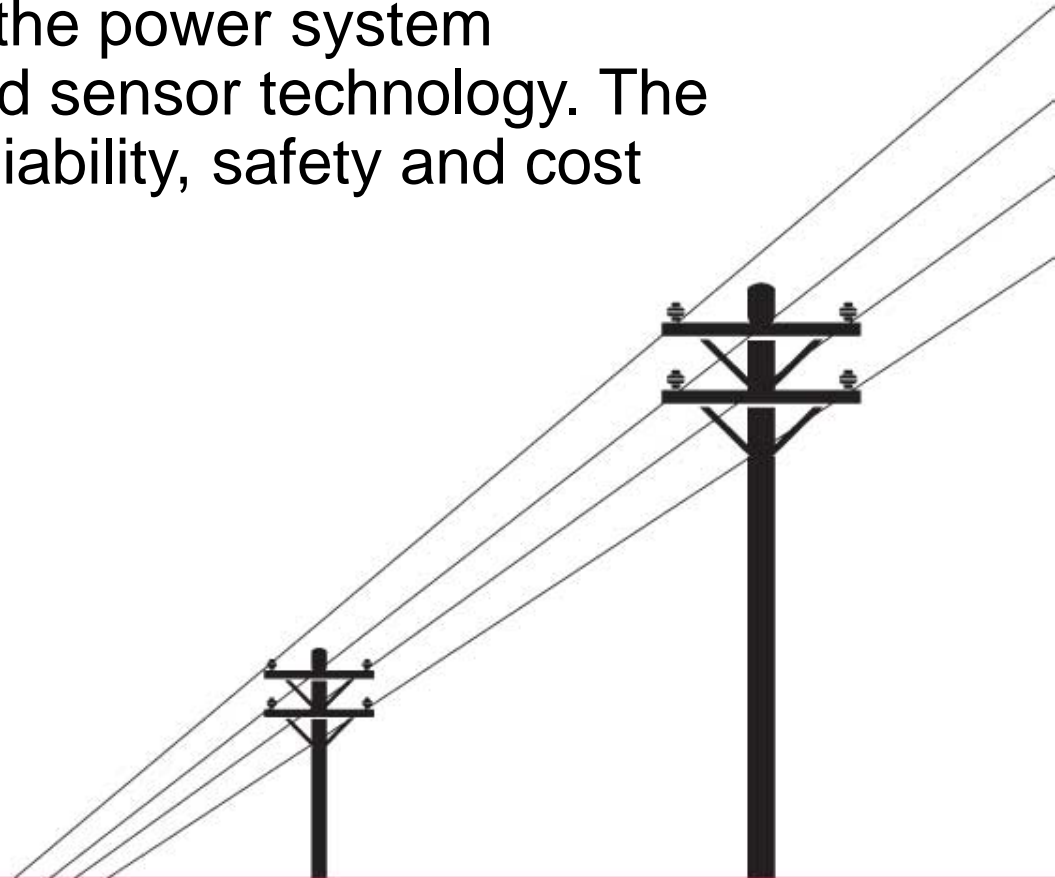
Unmanned Aircraft Systems (UAS)  
with Advanced Image Processing for  
Electric Utility Inspection and Operations

# Project Objective



A Sempra Energy utility®

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)



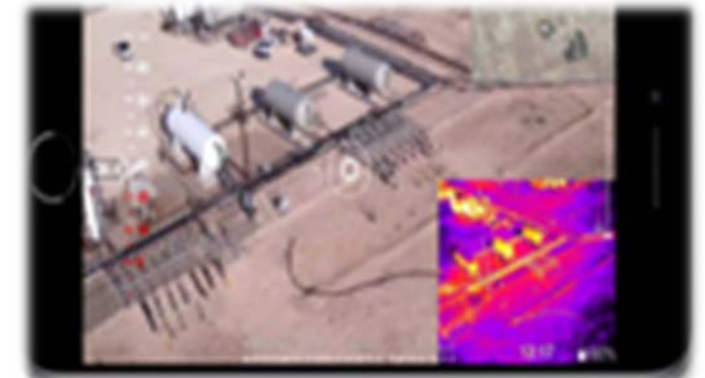
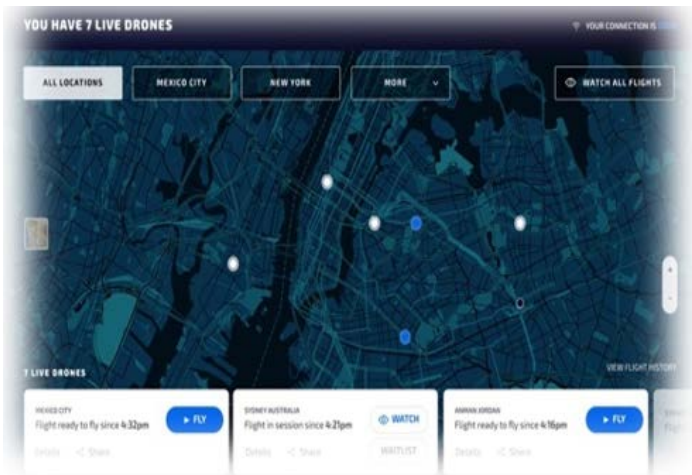
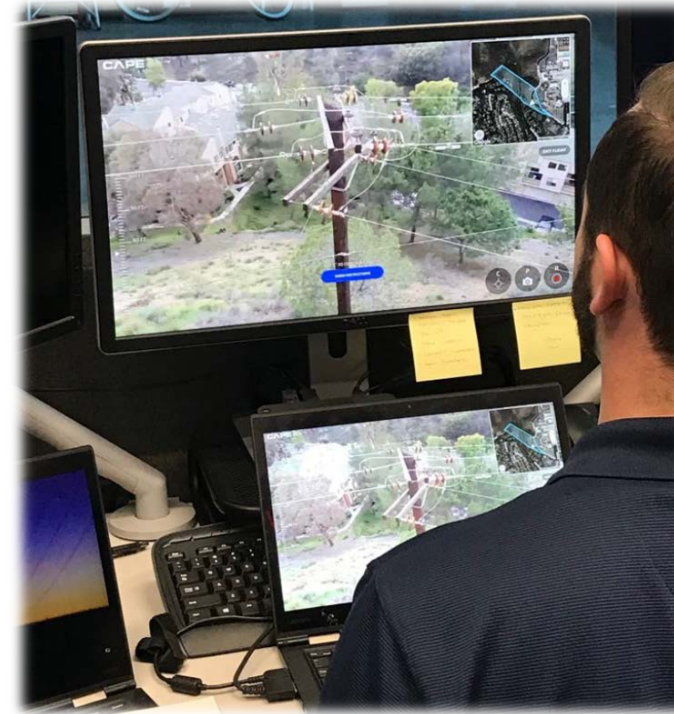
A Sempra Energy utility®



# 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



A Sempra Energy utility®

## 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



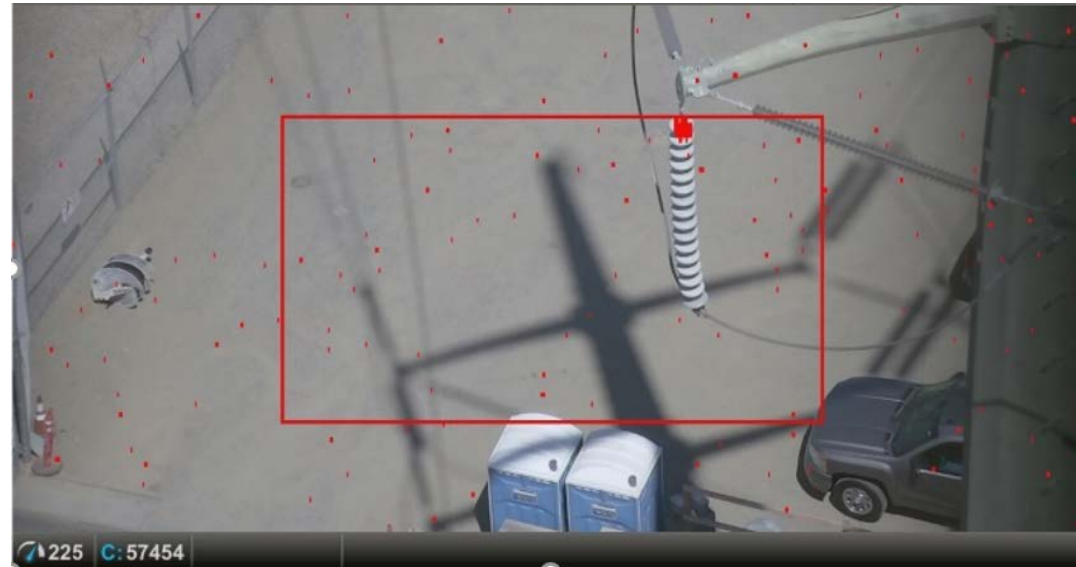
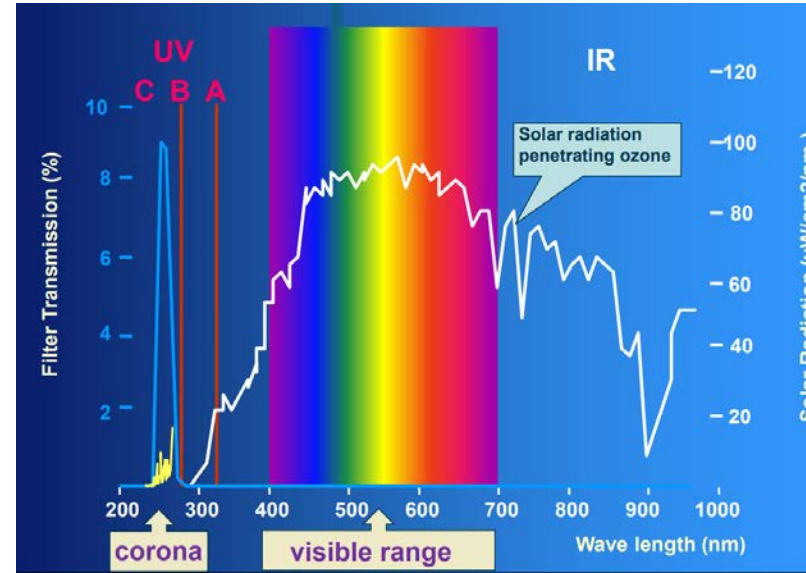
# Corona



A Sempra Energy utility®

## 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



A Sempra Energy utility®

## 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.

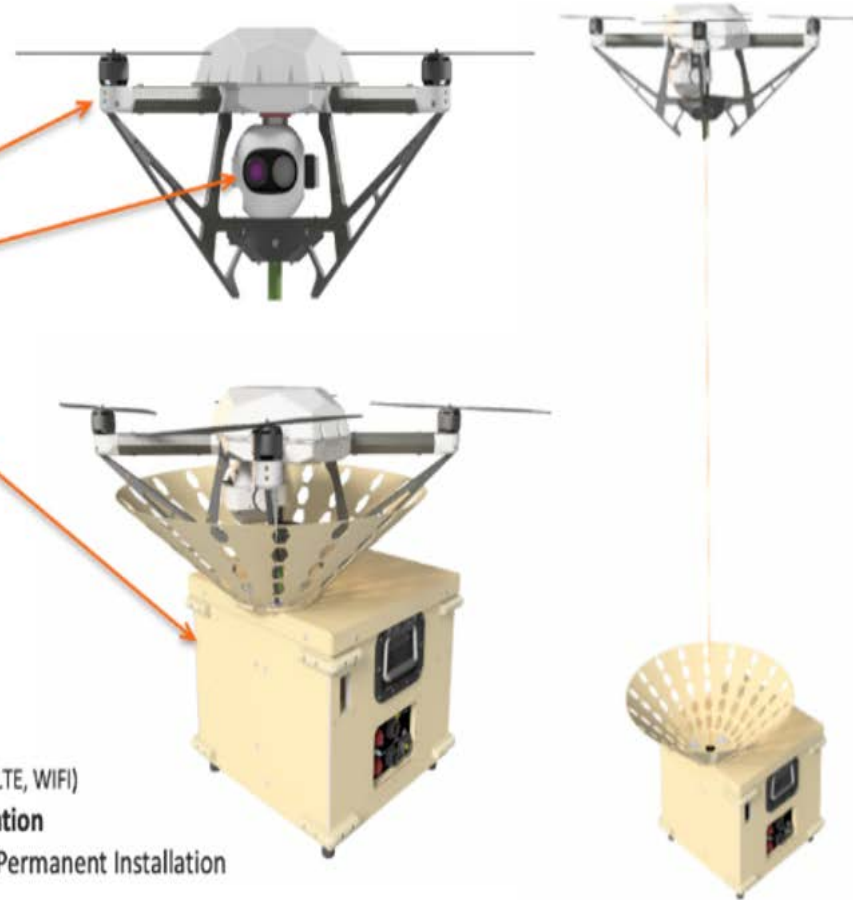
### System Includes:

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

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

### Options Include: (not shown)

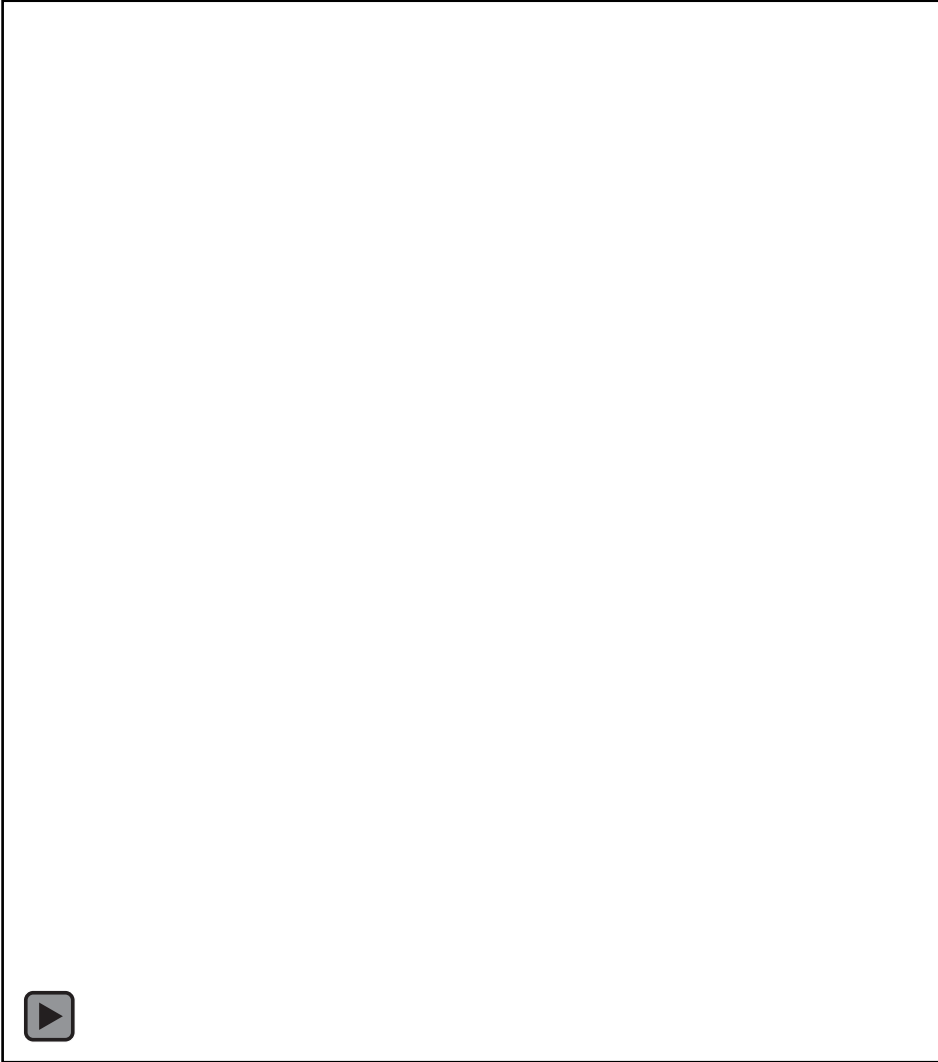
- Radio Payloads (TSM/TSMX, WaveRelay, MIMO, LTE, WIFI)
- Software Integration Kit for Network Operation
- Mobile and Fixed Enclosures for Vehicle or Permanent Installation



# 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!



A Sempra Energy utility®



# Vertical Takeoff and Land (VTOL)



A Sempra Energy utility®

## Prospective Value:

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



Thank you

