

AUTONOMOUS AERIAL THERMOGRAPHY

Aerial Thermography is a growing standard for detecting faults in solar farms. Damaged cells absorb energy from its neighbors, becoming very hot. These cells are brightly visible in a thermal scan, as shown on the left. An annual inspection can discover degradation that would otherwise result in losses exceeding \$1,000/MW/yr.

Drones have made thermography economically viable by replacing the practice of manually walking down rows. However, certified pilots are required for the task, who must make costly trips to remote sites.

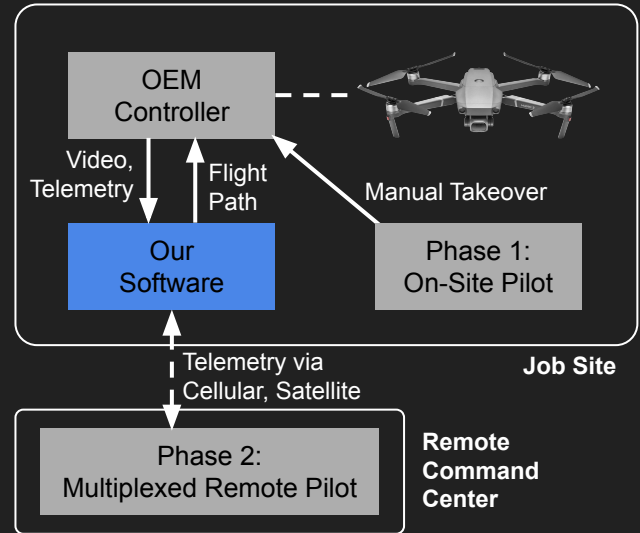
As the flight itself is relatively simple, it should be possible to automate capture so that no on-site pilot is required. Such an achievement would make inspection a negligible cost that may be performed frequently and with more data types (e.g. vegetation, shading) to maximize production.

We are developing software that works with existing hardware to automate aerial thermography for solar utilities. Our product will enable pilotless inspections.

2023 Q1 Goal: Pilot Assist

- Software responds to: glare, wind, clouds.
- Enable inexperienced pilots to perform solar inspections with professional quality.
- Pilot is still present on-site for backup safety.
- Demonstrator for fully-remote flight capabilities.

Solar aerial thermography image, our own — satalpha.com



2023 Q3 Goal: Fully-Remote Flight

- Software never requires on-site intervention.
- On-site safety pilot replaced by remote pilot, eliminating the need for travel.
- Remote pilot can oversee back-to-back flights, maximizing time-efficiency of skilled labor.