

Presented By: Rustam Salavatov & Asher Popper

CREW AIR

A micro-local compliance & drone-tasking API
that lets utilities safely dispatch line crews into smoke zones,
cutting outage times and preventing Cal/OSHA fines

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THE PROBLEM

Wildfires strike, utilities must dispatch line crews immediately yet Cal/OSHA § 5141.1 mandates logged air-quality checks before any crew enters a smoke zone.

There is no fast, reliable way to verify conditions at the exact worksite.



THE DATA GAP

Current smoke monitoring infrastructure was never built for micro-local, real-time dispatch decisions. Global models and distant regulatory monitors leave utility dispatchers flying blind — forced to wait hours before crews can safely enter smoke zones, triggering costly grid downtime and compliance risk.

40 km Grid Cells

NASA VIIRS and global smoke dispersion models operate on 40 km grid resolution. A single cell can span an entire county — masking the hyper-local PM2.5 spikes that determine whether a crew can legally enter a specific worksite under Cal/OSHA § 5141.1.

Monitors Up to 48 km Away

The nearest regulatory AQI monitor can sit up to 48 km from the actual worksite. Dispatchers must wait hours for readings to update, causing costly SAIDI-penalized grid downtime and delaying deployment of line crews when every minute counts.



THE SOLUTION

When NASA VIIRS detects a fire within 50 km, Crew Air's API automatically tasks a drone to sample PM2.5 at the exact worksite — delivering real-time, irrefutable compliance records so crews can safely enter smoke zones without delay.

SE Airborne Scout Hardware

The SE Airborne Scout integrates a Schneider Electric SpaceLogic PM2.5 sensor with a downwash-protected snorkel and ESP32/Raspberry Pi micro-controller, enabling fully autonomous deployment via the Crew Air API for precise on-site air quality sampling.

Automated Compliance Logging

Every drone reading is timestamped and logged in real time, creating an irrefutable Cal/OSHA § 5141.1 compliance record. Dispatchers gain actionable go/no-go decisions in minutes — eliminating blind crew dispatches and costly grid downtime.

BEYOND THE CREW

Crew Air's micro-local PM2.5 data doesn't stop at crew compliance. Every smoke reading is exported via JSON to DERMS and Building Management Systems, unlocking automated grid and building responses before smoke arrives at critical infrastructure.

Granular smoke hours feed home agents and distributed energy resources with real-time environmental signals — enabling pre-cooling before peak pricing windows (4–9 PM) and reducing costly demand charges across the grid.

Grid Optimization

Micro-local smoke data feeds directly into DERMS, enabling utilities to pre-cool grid infrastructure before peak pricing hours (4–9 PM). Reduces demand charges and SAIDI penalties by acting on real-time environmental signals.

Building Management

BMS systems receive JSON smoke-hour feeds to preemptively close dampers and boost HEPA filtration before smoke reaches buildings. Protects occupants and HVAC assets with zero manual intervention required.

Distributed Energy

Home agents and DER platforms gain granular heat and smoke-hour data to optimize local energy dispatch. Enables smarter load shifting, battery pre-charge cycles, and demand response during wildfire events.



BUSINESS MODEL

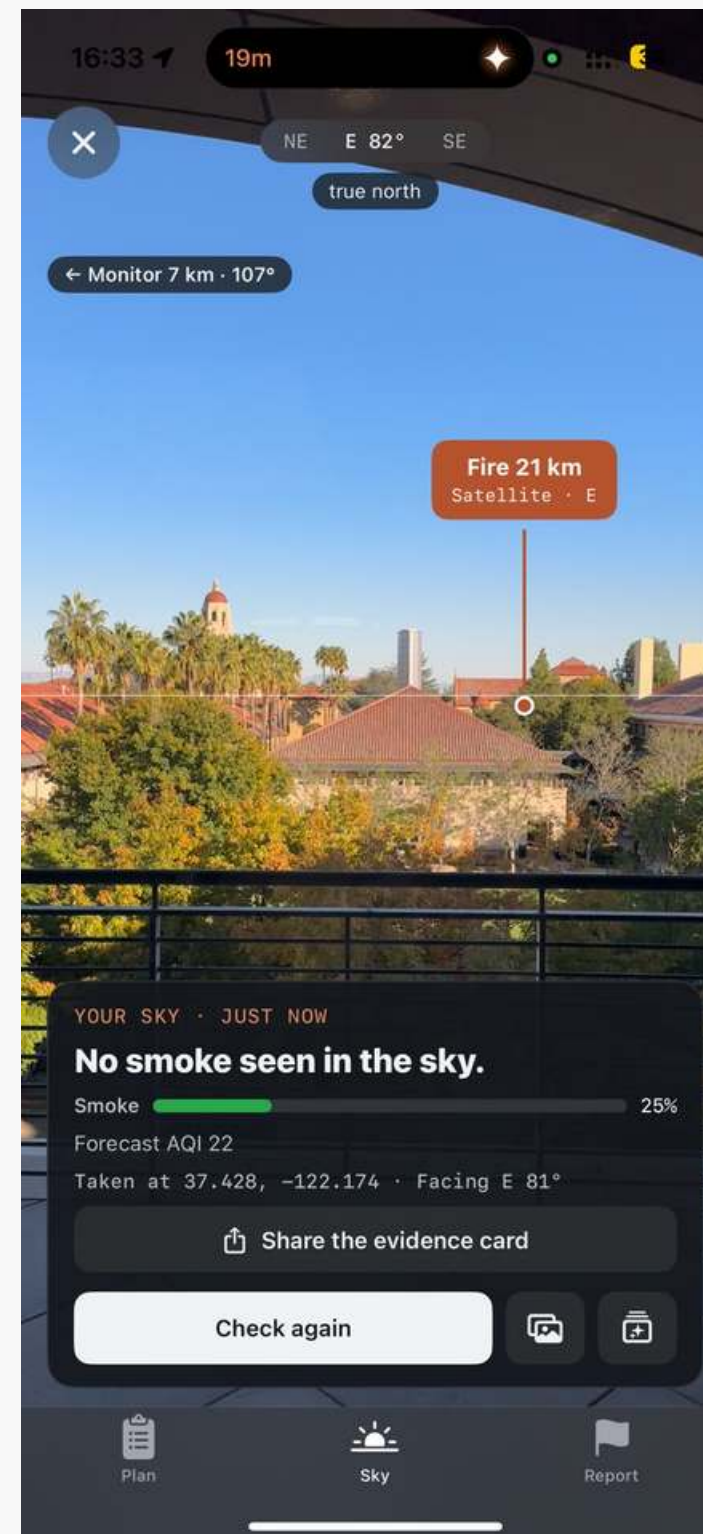
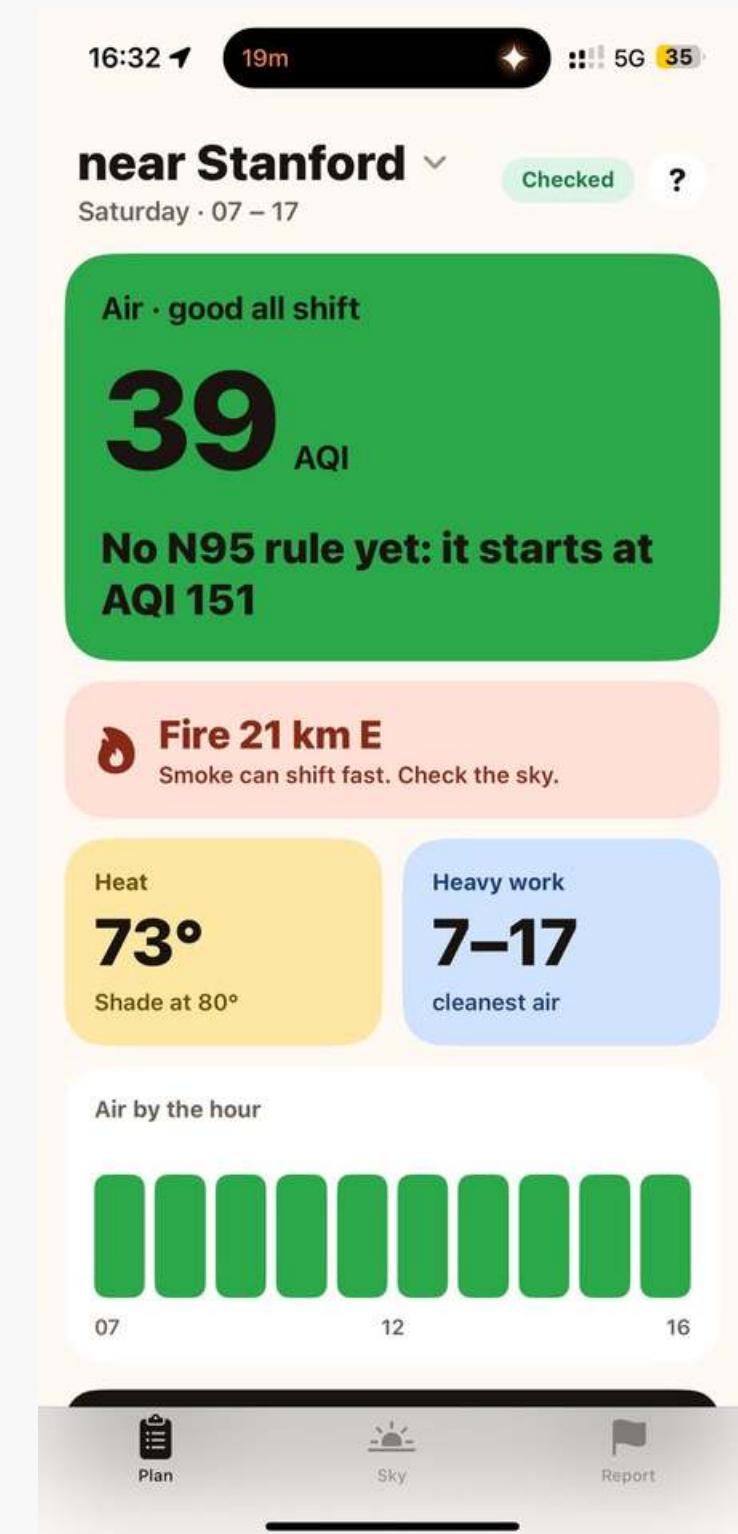
Utilities & contractors pay per deployment site for compliance logs and API data feeds. Line crews receive compliance records free. Recurring enterprise SaaS revenue scales with every site dispatched.

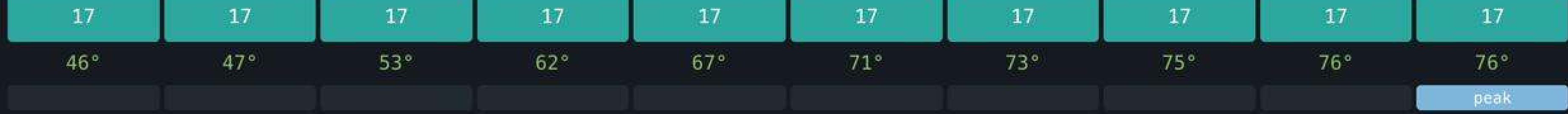


Contact

Service

Home



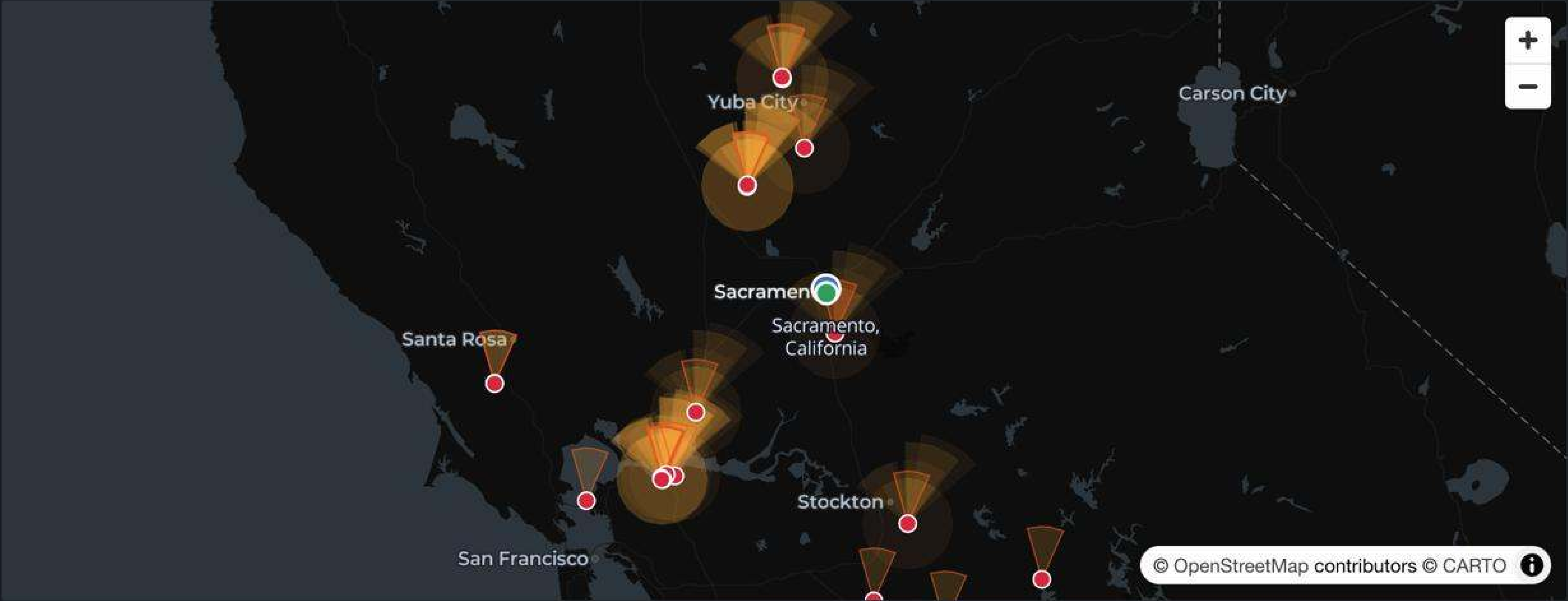


Top: PM2.5 AQI (NowCast). Middle: air temperature, °F. Bar: electricity price, PG&E E-TOU-C peak 16:00–21:00 every day.

Crew Air

Live API: airsignal.app/api

WHERE THE SMOKE GOES



Wind from the S at 6 km/h: the fire 14.902251688490937 km S is upwind, its plume reaches this place within about 2 hours. Trust the sky over the forecast.