

# Telemetry, Privacy & Safety - Atmospheric Filtration Drone Swarm

This guide outlines the telemetry protocols used by the Atmospheric Filtration Drone Swarm, with a focus on protecting public privacy, anonymizing data, and ensuring real-time safety for all field deployments.

## Real-Time Telemetry Streams

- Drone ID (pseudonymous key only)
- GPS location (10-sec intervals, 5m accuracy)
- Altitude, heading, velocity
- Battery level, filter status, sensor payload
- Air pollutant readings (PM, VOC, CO2)

## Logged vs. Live Data

- Logged: stored encrypted on DAO archive (rolling 7-day)
- Live: shown to ops crew in dashboard, cleared every 24h
- Emergency logs stored longer w/ incident tag
- Diagnostic logs are tagged by session, not user

## Privacy Protection Measures

- No facial, vehicle, or home image capture
- Camera disabled by default unless in hazard scan mode
- Sensor data anonymized by bounding coordinates (block-level)
- No permanent user IDs stored onboard

## Safety Protocols (Telemetry-Based)

- Altitude floor enforced over pedestrian zones
- Instant RTB if telemetry shows spiraling or failsafe trigger
- Geofencing overrides applied via telemetry pulses
- Emergency broadcast auto-activates drone lights + slow descend