

SkySentinel: Acoustic Aircraft Detection

Patent-Pending Wildlife & Aviation Compliance Monitor

Problem

Low-altitude flights violate 14 CFR §91.119(c) (500ft rural), 50 CFR Part 22 (1,000ft eagle nests), FAA AC 91-36D (2,000ft noise-sensitive)—disrupting PNW eagles/ocean habitats. Manual patrols cover <5% airspace; \$150K+ radar misses small aircraft. Agencies need <\$5K autonomous detection.

Solution

Patent-pending (filed Dec 1, 2025) 65dB RMS trigger ($20 * \log_{10}(\text{RMS}) + 94$) with 300s cooldown rejects waves/wind. React dashboard + FlightAware API correlates detections ($\pm 30\text{s}$) to violations across 15km airspace. RPi/mic hardware scales to 100+ remote sites.

Traction

- VC outreach confirmed interest post-patent filing
- Live React dashboard (<https://skysentinel.dev>) deployed; acoustic prototype processes laptop mic.
- Risk register mitigates hardware/environmental false positives.

Market

- **\$2.1B** veteran set-asides (SBA SDVOSB 3%) + WA conservation grants
- 500+ Olympic Peninsula eagle nests, Puget Sound coastline; \$250K/yr from USFWS/FAA
- **Gardiner WA (ZIP 98382, "Comfortable" DCI)** rural Jefferson County → 3 jobs by 2027 from home-based ops

Team/Leadership

- **90% disabled veteran (DD-214)**, Amazon L4 Systems Engineer (3+ yrs serverless/cloud)
- Early 2026 Computer Science grad; built full-stack prototype solo
- **Gardiner, Jefferson County resident** (rural Olympic Peninsula, veteran-heavy) leveraging local conservation networks
- Mission: Protect PNW wildlife serving underserved rural conservation agencies

Ask: \$15K for RPi/microphone arrays + field testing → April 2026 revenue
100% veteran-owned sole proprietorship; scalable to federal contracts