

From validation to certified capability

Phase 1

Validate use case

We assess your mission profile, onboard systems, and environment to determine how MagNav is likely to perform. We also recommend sensor placement and system configuration.

On-platform measurement

- 1. Mission & area-of-interest screen.** We assess magnetic reference resolution for your exact flight profile, region, and altitude band, then optimize with private sources to close any gaps.
- 2. Platform & sensor review.** We map the sensors and compute already onboard (or planned to be onboard) and how each affects achievable performance. No platform access needed for this step.
- 3. Platform magnetic characterization (MagTrace), on-platform.** On your airframe we profile the platform's magnetic environment and identify viable and optimal sensor locations; grounding the prediction in your platform's real magnetic noise.
- 4. Physics-based performance modeling.** We combine the refined map coverage, platform magnetic characterization signature, sensor stack, and flight profile into a modeled performance estimate, with every assumption stated explicitly.
- 5. Trade-off recommendations (as required).** Where the model shows a gap, we lay out the options and what each buys you (e.g. which IMU class or magnetometer configuration gives the best performance-per-cost for your mission and SWaP target).

Predicted Performance Report:

A physics-based performance prediction for your specific platform and mission - with assumptions clearly stated - before investing in flight testing.

Phase 2

Verify performance

We fly the AQNav Evaluation Kit on your platform to validate predicted performance against real-world flight data.

- 2. Flight test plan.** We agree on test objectives, success criteria, and the mission profile to objectively verify AQNav predicted performance, then configure AQNav's Evaluation Kit accordingly.
- 3. Install & integrate.** We integrate AQNav's plug-and-play Evaluation Kit to verify a successful platform test configuration.
- 4. Ground test & hardware-in-the-loop.** Before anything flies we verify data quality, recording data passively; so flight hours produce verifiable evidence.
- 5. Flight test.** We test the mission profile on your platform and collect objective, time-stamped performance data against a truth reference.
- 6. Analyze, report & scope.** We deliver AQNav's performance report against your agreed success criteria, which informs the minimal-footprint configuration your operation needs.

Validation & Verification Report

Measured performance, validated sensor selection, and final placement - objective data that your team and customers can review.

Phase 3

Certify the capability

We finalize AQNav for your platform and freeze that baseline for review. SandboxAQ provides the design data, verification and qualification evidence and substantiation materials needed to support your existing certification path.

Evidence Package for Certification

A frozen configuration baseline, DAL rationale, interface definitions, verification and qualification evidence - all traceable to your airworthiness case.

Start today

Integrate AQNav into
your navigation stack.

