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Field IQ Systems Executive Brief

Post-Mission Telemetry AAR Support for Defensible Review

(Deterministic • Explainable • Plan-Gated Adherence/Readiness • Human Authority Retained)

The Problem

In telemetry-rich training environments, after-action review often relies on manual reconstruction and subjective interpretation. Field IQ strengthens review defensibility by structuring available telemetry into repeatable, evidence-linked findings.

What It Is

Field IQ turns post-mission telemetry into an AAR-ready picture: it makes the track legible, surfaces drift/dwell patterns, and—when a plan exists—shows where execution diverged from intent, with evidence you can point to later. Field IQ is post-mission, read-only, and advisory. Humans remain the decision authority.

Applicable anywhere you have post-mission track/position telemetry (e.g., platform track logs, simulator runs, unmanned systems trials) and, if desired, provided planned route geometry.

Post-Mission Telemetry → Advisory Outputs (Plan-Gated)

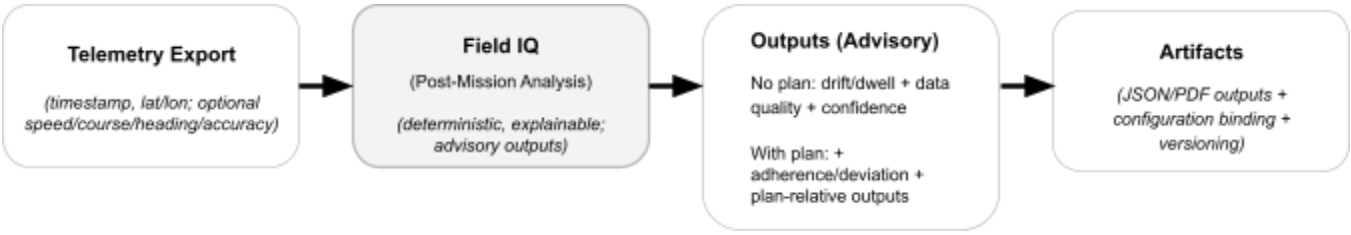

Figure 1 — Post-mission, read-only telemetry interpretation producing advisory outputs; adherence and plan-relative outputs require provided route geometry.

Structured Outputs (Concrete Artifacts Produced)

- Timestamped movement-state reconstruction (e.g., deviation, dwell, route variance) with direct telemetry references

- Telemetry confidence assessment indicating reliability of the underlying dataset (not a performance grade)
- Plan-relative adherence analysis when explicit route geometry or mission plan is provided
- Structured deviation findings to support defensible post-mission review (no pass/fail; advisory only)
- Exportable, read-only artifacts (e.g., JSON/PDF) designed for independent post-mission review
- Repeatability consistency across iterations (comparison of execution patterns over multiple runs)

What It Is NOT (non-negotiable boundaries)

- **Not autonomous:** does not act, decide, or direct
- **Not real-time:** no live operational guidance; no control-loop integration
- **Not command and control:** no tasking, directives, or operational advisories
- **Not automated grading/adjudication:** no pass/fail, no punitive outcomes
- **Not self-learning/adaptive scoring:** does not self-modify behavior in production
- **Not an instructor/evaluator replacement:** outputs are advisory; humans remain accountable
- **Not a safety system:** not used for collision avoidance, deconfliction/separation assurance, mission authorization, certification, or go/no-go decisions

The Simple Mode Gate (Plan vs No-Plan) — How It Actually Works

Field IQ can ingest and process telemetry without a plan, but adherence evaluation (and plan-relative outputs) do not execute without provided route geometry.

If a plan/route geometry IS provided (adherence enabled)

Field IQ can:

- Show planned vs actual and evaluate adherence
- Identify and characterize deviations relative to the plan
- Produce plan-relative outputs (including adherence-based fidelity/readiness where applicable)

If NO plan is available (adherence disabled)

Field IQ can still:

- Ingest telemetry and enforce monotonic timestamps
- Compute data-quality metrics (missing samples %, temporal jitter, continuity)
- Produce confidence based on telemetry quality
- Detect/characterize motion states such as drift/dwell
- Display actual tracks and derived motion metrics

Critical boundary: Without planned route geometry, Field IQ **does not** evaluate route adherence and **does not** produce plan-relative fidelity or readiness outputs.

“Can I Trust It?” — Determinism, Explainability, Defensibility

Deterministic outputs (repeatable)
Same data in → same results out. Every time. Identical inputs produce identical evaluation results and consistent exported artifacts and rendering. Determinism supports consistency across evaluators and across time in readiness interpretation.

Explainable findings (evidence-linked)
Findings are tied to telemetry evidence windows/segments, so a reviewer can answer: what happened, where, and why it was flagged.

Traceability & configuration binding (defensible later)
Plain English: You can show what configuration governed the output and what telemetry evidence supports it.

Technical: Outputs include versioned run identifiers and integrity markers to support reproducible, defensible review, without exposing internal parameters

Deployment & Data Boundary

Local processing inside the customer environment

- Processed locally within the customer environment (customer machine, enclave, or customer-controlled compute)
- **No external data exfiltration is required** to perform evaluation

Retention default

- Default pilot behavior is ephemeral processing

- Retention is defined by customer agreement / deployment policy; long-term retention is not required

Pilot Wedge

A safe evaluation starts with:

1. One telemetry export sample (timestamp + lat/lon),
2. One mission context definition (what “good” means), and
3. **If adherence/fidelity/readiness are desired:** the planned route geometry used for planned-vs-actual evaluation.

Pilot shape:

- One mission profile (e.g., terminal/approach training profile, patrol route/box, search pattern, test & evaluation route)
- One dataset source (exports already collected)
- One output package: tracks + drift/dwell + confidence; plus adherence/readiness when plan exists
- One evaluator review loop (SME validation)
- One determinism check (rerun same input → consistent results)
- No integration into operational systems required

Example success criteria (pick 3):

- Reduced manual stitching time / faster time-to-insight
- Increased evaluator consistency and defensibility of findings
- Evidence-linked findings suitable for debrief
- Demonstrated determinism on repeat runs
- Demonstrated reduction in subjective interpretation variance
- Confidence reflects telemetry quality under imperfect data (graceful degradation)

Field IQ’s purpose is not data visualization; it is structured signal discipline to support defensible readiness interpretation in telemetry-rich environments.

Bottom Line: Field IQ operates deterministically on available telemetry, degrades gracefully under imperfect data, and explicitly reflects data quality via a confidence indicator while preserving human authority.