HibouAir × TA-14

From Environmental Intelligence to Governed Intervention

Manufacturer Technical Examination & Commercial Evaluation Edition
Version 2.0 | 4 November 2026

The governing question

Does this proposed consequence have sufficient Admissible Evidence, Applicable Authority, and Established Standing to become reality NOW?

Reality → Record → Continuity → Admissibility → Binding → Commit → Execution → Outcome

Purpose and status

A manufacturer-specific, independently authored technical reference for a potential written scoping exchange with Axel G. Hammar and HibouAir. It establishes the proposed architecture, an illustrative examination, falsifiable negative tests, a read-only pilot charter, and an eight-image showroom teaching specification.

Non-claims: No HibouAir endorsement, partnership, live API access, deployed integration, field validation, product certification, legal admissibility determination, or permission to control building equipment. The existing TA-14 HibouAir-format R1 demonstration uses simulated data.

Commercial status: HibouAir expressed willingness to discuss a possible paid evaluation; funding party, price, scope and terms remain unagreed.

01 / Executive thesis and separation of roles

HibouAir publicly describes environmental measurement and historical GO IAQS reporting. TA-14 proposes an additional independent examination layer: source-linked Atmospheric Integrity Records (AIR), Environmental Integrity Governance (EIG), and actor standing under Admissible Standing Architecture (ASA). The proposed layer does not replace the manufacturer sensor, analytics, dashboard or building-management controls.

Manufacturer capability / record	TA-14 proposed examination
Measurements, dashboards, historical reports	Preserve exact source reference and original observation; distinguish reporting from an admissible proposition.
Environmental trend or alert	Test evidence sufficiency for the named action, including placement, occupancy, uncertainty and contradictory evidence.
Potential operational recommendation	Independently examine Applicable Authority and Established Standing before any commitment.
Facility intervention and follow-up	Only locally authorized actors execute; preserve command, actuation and environmental outcome as separate evidence.

What is verified, and what is not

Verified in the TA-14 repository: a frozen-candidate HibouAir R1 adapter contract, private simulated gateway logic, and a private owner console. Not verified: a live HibouAir feed, exact field entitlements, calibration provenance exposed by the API, commercial access rights, actual building command mediation, or successful field outcomes.

02 / System boundary: observation is not permission

Layer	Proposed responsibility / invariant
HibouAir source	Provides source observations and whatever metadata the authorized interface actually makes available.
Read-only intake	Retains raw source payload or immutable reference, observed/received time, zone, units and declared quality.
AIR record	Preserves provenance, transformations, uncertainty, continuity and reviewable lineage; hash alone is not source truth.
EIG examination	Tests a named proposition and proposed consequence; cannot turn missing evidence into ALLOW.
ASA examination	Separately identifies actor, capacity, standing basis and authority relationship for the specific action.
Decision receipt	Records ALLOW / HOLD / DENY / ESCALATE, reasons, scope, expiry and independent replay references.
Execution boundary	No actuator access in Phase 1. Any future actuation requires independent local authorization and bypass-resistant mediation.
Outcome verification	Distinguishes approved command, actual actuation, environmental effect and possible confounders.

03 / Technical architecture and trust boundaries

Proposed read-only Phase 1 path

Sequence	Artifact / checkpoint	What must not be inferred
1. Source	Authorized HibouAir export or API sample	A number is not proof of exposure or causation.
2. Intake	Original bytes or source reference; timestamps; identity; zone	Receipt time is not automatically observation time.
3. AIR	Lineage, gaps, corrections, quality flags and hash receipt	A cryptographic hash does not prove sensor accuracy.
4. Admissibility	Proposition-specific relevance, completeness, freshness, uncertainty	Admissible for investigation does not imply admissible for control.
5. Authority + ASA	Applicable rule and independently established actor standing	Possessing an API key is not local operating authority.
6. Commit	Bounded disposition with reason codes and expiry	ALLOW does not establish physical execution.
7. Outcome	Read-only observations and future field evidence if authorized	A post-change trend alone does not establish causation.

Security and integrity requirements

• Least-privilege, consented, scoped access; no production credentials or raw secrets in the public showroom.

• Explicit source-to-zone and zone-to-asset mapping; do not silently substitute site or equipment identity.

• Preserve original and transformed values separately, with transformations and uncertainty recorded.

• Use a deterministic canonical receipt and replayable test fixtures; verify receipt content as well as its digest.

• No manufacturer approval, independent validation, or actual actuator control is implied by a simulated ALLOW.

04 / Evidence requirements matrix

Evidence field	Minimum examination	If missing / uncertain
Device / stream identity	Declared provider, device ID, site and zone	HOLD if material to the proposition.
Time	Observed time, received time, timezone, freshness	HOLD for stale or unorderable evidence.
Measurement	Units, interval, raw values, data quality flags	HOLD if insufficient to interpret.
Calibration / uncertainty	Available calibration declaration, limitations and instrument uncertainty	HOLD for control reliance if material; do not invent certification.
Operating context	Occupancy, HVAC mode, outdoors, placement and confounders	Do not infer cause or exposure from a single reading.
Continuity	Sequence, gaps, duplication, revisions and custody	Preserve defects; HOLD where sufficiency fails.
Authority / standing	Applicable rule, named actor, capacity, standing basis, scope, expiry	DENY revoked/expired/out-of-scope authority; HOLD unresolved evidence of standing.

05 / Existing HibouAir R1: evidence versus demonstration

The TA-14 repository contains HIBOUAIR_R1_ADAPTER_CONTRACT_v1.0.md with status “FROZEN CANDIDATE · PRIVATE · NO LIVE CREDENTIALS”; apps/web/lib/environmental-evidence-gateway.ts with simulated HibouAir-format observations; and an owner-only /admin/environmental-evidence-gateway page. The demo declares a bounded “ventilation increase only” proposition and computes receipt hashes and replay IDs.

What R1 can demonstrate

• Deterministic processing of an illustrative source stream with declared freshness and continuity rules.

• Separation of evidence admissibility from authority status and scope.

• Bounded dispositions and source-linked evidence/receipt hashes in a simulated examination.

What R1 cannot demonstrate

• That a real HibouAir instrument produced the measurements or that the API exposes all required metadata.

• That calibration, source authenticity, time synchronization or custody have been independently validated.

• That any facility grants authority, that bypass paths are controlled, or that an actual ventilation system changed.

Public communication rule: Refer to this as a private simulated HibouAir-format reference implementation, never a completed HibouAir integration.

06 / Worked examination: occupied zone and rising CO_2

Hypothetical facility Z-01 has one consented environmental stream. During an occupied period, reported CO_2 increases. A facilities participant proposes raising outdoor-air ventilation for one named air-handling zone. No real measurements, approvals or equipment commands are represented.

Stage	Observed or required fact	Disposition / consequence
Reality	Reported CO_2 trend, occupancy and operating context must be collected.	Investigate; do not diagnose the cause.
Record	Raw values, units, device identity, times and quality declarations are preserved.	Create source-linked record.
Continuity	Suppose calibration evidence is unavailable and a time gap is present.	HOLD control reliance; record both defects.
Admissibility	Trend may justify further inspection but not establish sufficient basis for an equipment change.	HOLD the proposed ventilation increase.
Binding	Named zone, asset, local rule, approver and actor standing are required.	No borrowed authority from data access.

Stage	Observed or required fact	Disposition / consequence
Commit	No valid ALLOW is issued in the hypothetical case.	HOLD with reason codes and review path.
Execution	Phase 1 has no actuator connection.	No command is issued.
Outcome	No intervention occurred.	No improvement or remediation claim.

07 / Determination semantics and precedence

An examination must not conflate missing evidence with invalid authority. The following policy table is a proposed rule set for the bounded pilot; final implementation must be reconciled against the approved TA-14 specification and independently tested.

Condition	Expected disposition	Why
Evidence insufficient / stale / broken continuity	HOLD	No admissible basis for this consequence.
Evidence sufficient; standing proof unresolved	HOLD or ESCALATE	Authority relationship has not been established.
Authority explicitly revoked, expired or outside action/zone scope	DENY	Invalid authority cannot be repaired by better sensor data.
Evidence and authority verified, scope matched	ALLOW only for named bounded proposition	Not permission for other assets, times or actions.
Material policy conflict or required independent review	ESCALATE	Human or institutional examination is required.

Decision receipt: minimum fields

Proposition ID; source record references; evidence digest; continuity and admissibility statuses; Applicable Authority reference; ASA actor/capacity/standing basis/authority relationship; disposition; reason codes; named consequence and asset/zone; effective/expiry time; limitations; canonical version; replay ID; reviewer or policy version.

08 / Independent review and adversarial tests

Negative test	Expected observable result
Missing calibration declaration	HOLD when calibration sufficiency is material; uncertainty retained.
Stale sample, missing sequence or duplicate data	HOLD when continuity/freshness policy fails; defects visible in receipt.
Wrong zone / equipment mapping	HOLD unresolved mapping; DENY explicit out-of-scope authority.
Revoked or expired authority	DENY even if environmental evidence appears valid.
Prediction of future deterioration only	No automatic permission; HOLD or ESCALATE.
Authorization recorded but no confirmed actuation	Do not claim executed intervention or improved outcome.
Alternate control route bypasses proposed governor	No enforceable control claim; future control phase blocked.
Tampered receipt / nonreproducible replay	Fail independent review; preserve original and discrepancy.

Independent examiner challenge: Reconstruct the original observation, each transformation, the exact proposition, actor standing, disposition, and any observed outcome. Reproduce all negative tests without trusting a dashboard screenshot.

09 / Proposed commercial evaluation charter

Item	Proposed scope
Phase 0: written scoping	Agree the one proposition, source interface, data rights, sponsor, costs, deliverables and independent reviewer.
Phase 1: read-only evaluation	One consenting site; one named HibouAir stream; no actuator connection; source-preserving ingestion and AIR examination.
Deliverables	Field mapping, provenance/continuity report, frozen baseline, deterministic fixtures, reason-coded receipts, limitations register, negative-test report.
Acceptance	Reviewer can replay source-to-determination chain; expected HOLD/DENY cases pass; all limitations and missing metadata disclosed.
Phase 2: optional and separate	Only after distinct technical, legal, safety and local authority approvals: consider bounded control-path assessment.
Commercial agreement	Funding party, fee, payment milestones, confidentiality, IP, permitted data uses, liability, retention and termination require written agreement.

Questions to send HibouAir

• Which data API or export interface is suitable for one consented stream, and what field definitions are authoritative?

• Which source timestamps, device identifiers, calibration/quality declarations and historical report references can be preserved?

• Are there data retention, attribution, rate-limit, derived-record or redistribution restrictions?

• Which use case has the highest practical value for HibouAir: ventilation operations, facility reporting, school IAQ or another?

• Who would sponsor or fund an evaluation, and which deliverables would define success?

10 / Publication and manufacturer claims discipline

The public showroom must remain an independent TA-14 technical exploration. Attribute HibouAir public capabilities to their published sources; mark all simulated readings, source streams, diagrams and determinations as hypothetical. Never claim endorsement, API integration, live control, validated environmental outcomes or regulatory certification.

Public material may explain the potential technical complement and invite written technical examination. Private code, credentials, internal console routes, and proprietary information should not be published as manufacturer-approved artifacts.

11 / Eight-image showroom teaching specification

01 / Environmental Reality

Governing question: What does a HibouAir observation actually establish?
Teaching objective: Sensor placement, occupancy and context; no cause inferred.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

02 / Source Record & Provenance

Governing question: Can the original observation be reconstructed?
Teaching objective: Device, units, times, raw payload and source identity.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

03 / Continuity & AIR

Governing question: What survives transfers and transformations?
Teaching objective: Gaps, quality flags, lineage and hash limitations.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

04 / Admissibility

Governing question: Sufficient for investigation or equipment change?
Teaching objective: Separate a trend from proof of cause or authorization.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

05 / Authority & Standing

Governing question: Who may invoke which authority for this action?
Teaching objective: Applicable Authority distinct from ASA standing.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

06 / Bounded Determination

Governing question: What does HOLD / DENY / ALLOW actually mean?
Teaching objective: Reason codes, expiry, scope and negative cases.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

07 / Intervention Boundary

Governing question: Why does permission not imply execution?
Teaching objective: Read-only Phase 1, fail-closed future mediation.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Bridge: “What you learned” recap followed by “What you are about to learn” transition to the next gate. Browser narration belongs below the image, not embedded in the image.

08 / Outcome & Continuing Record

Governing question: What actually happened, and can it be replayed?
Teaching objective: Separate command, actuation, effect and verification.
Image specification: One legible technical teaching illustration, clearly hypothetical, no unverified manufacturer branding or device depiction. Include numbered stage and short callouts.

Final interaction: Independent review challenge with reproducible failure cases and a written invitation to scope one read-only evaluation.

12 / Sources, boundaries and revision notes

TA-14 internal source paths:
docs/environmental-evidence-gateway/HIBOUAIR_R1_ADAPTER_CONTRACT_v1.0.md;
apps/web/lib/environmental-evidence-gateway.ts;
apps/web/app/admin/environmental-evidence-gateway/page.tsx.

TA-14 public context:
www.ta14exchange.com/environmental-integrity-governance/demonstrations/reporting-to-authority. HibouAir public context: www.hibouair.com/blog/hibouair-introduces-go-iaqs-reports/. Public claims are descriptive, not independent verification of API fields.

v2.0 changes: Expanded manufacturer-specific role separation; technical architecture and evidence matrix; detailed R1 limitations; worked HOLD case; explicit authority-versus-standing semantics; reproducible negative tests; commercial pilot charter; eight-image teaching blueprint.

Final boundary: This document is a proposed technical and commercial examination, not an executed pilot, an enforceable authority decision, or a promise of equipment performance.