TA-14 AUTHORITY / INDEPENDENT TECHNICAL CONCEPT

Continuous Commissioning & Governed Execution

A testable architecture for connecting ongoing building-performance evidence with bounded, defensible operational consequences.

TECHNICAL CONCEPT v2.0 | 01 NOVEMBER 2026

The question

When a building proposes a consequential action, what establishes that the action is justified and authorized under present conditions - not merely that the system is technically able to perform it?

The proposed addition

Existing commissioning and monitoring-based practices assess whether building systems meet requirements. TA-14 proposes a distinct, independently enforceable check at the consequence boundary: Admissible Evidence + Applicable Authority + Established Standing - evaluated NOW.

Document status

Independent TA-14 concept for technical challenge. Not a deployed product, independently validated industry standard, safety certification, or representation of any partnership. All example values and outcomes are synthetic.

Core principle: No admissible evidence. No admissible execution.

1 / The industry gap to test

Initial, ongoing, monitoring-based, and continuous commissioning already exist. Controls systems also implement permissions, interlocks, and safety sequences. The proposed gap is narrower: whether a particular consequential command should still be allowed at its moment of commitment when evidence, ownership permissions, or operating conditions have changed.

This is a hypothesis, not an assertion that existing systems cannot provide equivalent controls. A pilot must identify what is already solved and whether an additional independent gate delivers measurable value.

2 / Responsibility and boundary matrix

Discipline	Established role	Boundary / interface
Owner / operations	Define operating intent, risk tolerance, approval delegation and changes.	Own applicable policy and escalation authority.
Cx provider	Review requirements and verify installation, sequences, functional performance and acceptance.	Test gate behavior against agreed acceptance criteria.
MSI	Coordinate cross-system interfaces, data semantics, integration and readiness.	Deliver traceable inputs; not a substitute for authorization.
BAS / controls	Operate sequences, safeties, interlocks, alarms and recovery.	Retain mandatory protective control; propose bounded commands.
TA-14 proposed gate	Evaluate admissibility, applicable authority and standing for a specific proposed consequence.	Issue ALLOW / HOLD / DENY / ESCALATE; no unilateral control ownership.

3 / Consequence classes

Scope the experimental gate only to defined, non-emergency actions, such as an energy-optimization setpoint change or equipment-mode request. Life-safety and code-required protective actions must remain governed by their existing certified controls and applicable authority. A live pilot requires explicit hazard analysis and approved bypass / fallback behavior.

4 / Operating architecture

Reality -> Record -> Continuity -> Admissibility -> Binding -> Commit -> Execution -> Outcome

Stage	Owner / input	What is preserved
Requirements	Owner, design and Cx: OPR / BOD / acceptance criteria	Versioned operating envelope and acceptance reference
Integration	MSI, BAS and controls	Identity, units, timestamps, source and mapping provenance
Evidence	Sensors, trends, inspection and Cx records	Freshness, continuity, contradictions, quality and uncertainty
Proposal	Controls or authorized operator	Command, target asset, bounds, expected consequence
TA-14 gate	Independent policy and authority evaluation	Decision, rationale, evidence refs and standing
Commit	Execution adapter / control system	Revalidation against changed reality; command token and expiry
Outcome	BAS trends and independent review where required	Measured effect, exception, audit trail and next baseline

5 / Continuous verification loop

Commissioned requirement -> current evidence -> proposed action -> commit-time authority check -> bounded execution (if ALLOW) -> outcome measurement -> new reality record -> next assessment.

A verified outcome updates the evidence record. It does not automatically expand authority. A previous ALLOW expires or is invalidated if a relevant input changes before commit.

6 / Decision contract

Decision	Meaning
ALLOW	Required evidence, authority and standing are sufficient for this bounded action at commit.
HOLD	Temporarily prevent commitment because required evidence is stale, missing or conflicting.
DENY	Proposed action violates a defined prohibition or current non-remediable requirement.
ESCALATE	Authorized reviewer or designated process must resolve an explicit uncertainty or exception.

7 / Evidence and authority requirements

The prototype must show not only the final decision but the evidence and rule that produced it. Policy thresholds below are illustrative test settings, not prescribed engineering limits.

Required element	Example field / test
Identity and traceability	Asset ID, point ID, system mapping version, source device, signer or custodian
Time and continuity	Observed-at timestamp, received-at timestamp, maximum-age policy, missing-data interval
Quality and uncertainty	Unit, scaling, range check, contradictory sensor flag, calibration status if available
Requirements	OPR / BOD requirement ID, commissioning acceptance ID, approved operating envelope
Authority	Owner policy version, issuer, delegated scope, effective period, revocation state
Standing	Authorized subject / system, site and action class, conditions and exclusions
Commit binding	Action digest, decision ID, expiration, evidence snapshot, revalidation result
Outcome	Execution status, measured response, verification window, deviation and reviewer

Illustrative deterministic policy

For a simulated AHU supply-air temperature setpoint change: require two critical points each no older than 120 seconds; no unresolved sensor contradiction; a proposed setpoint within a synthetic owner-approved 12-16 C envelope; valid delegated authority; and no active revocation. Recheck all inputs at commit. These values exist solely to make the showroom reproducible.

Explicit non-claims

The gate does not prove sensor truth, replace field verification, certify safety, diagnose all equipment faults, or guarantee better energy outcomes. Provenance and admissibility are assessed against declared rules and available evidence; physical truth and system safety require their own methods.

8 / Four reproducible showroom scenarios

Scene	Synthetic condition	Expected result
A / Normal	Both required points 30 s old; setpoint 14 C; valid authority; no revocation.	ALLOW, then simulated execution and measured outcome.
B / Stale evidence	Critical point 310 s old despite BAS communications remaining online.	HOLD; show failed freshness rule and no execution.
C / Authority conflict	Requested setpoint 10 C outside approved 12-16 C envelope.	DENY under stated policy; or ESCALATE only if explicit exception workflow exists.
D / Post-action drift	Previously allowed 14 C command executes; measured response deviates beyond synthetic verification tolerance.	Outcome exception; new proposal held for review until new evidence and authority are evaluated.

9 / Interactive visitor controls

Visitors select a scene; inspect source timestamps, quality flags, authority and policy versions; choose a proposed command; run the deterministic gate; inspect the exact failing or passing rules; optionally simulate execution; and compare expected versus observed outcomes. Each scenario supports reset and replay.

Showroom acceptance checks

Each scene must reproduce the same decision from the same inputs; every rule must be inspectable; a changed critical input before commit must invalidate the prior authorization; non-ALLOW results must never execute; an authorized outcome must be recorded separately from the decision; and the experience must clearly label all data as simulated.

10 / Pilot plan and evidence of value

Phase	Exit criterion
01 / Technical review	Cx, MSI, owner and controls reviewers document overlap, objections, safety boundaries and candidate command classes.
02 / Synthetic sandbox	Deterministic policy, reproducible scenarios, event log, negative tests and safety exclusions pass.
03 / Shadow evaluation	Owner-approved read-only replay of representative records; compare gate decisions with existing BAS / Cx processes.
04 / Bounded pilot	Only after written owner approval, cybersecurity and safety review, responsibility matrix, rollback, and incident plan.

Measures to report, not assume

False ALLOW / false HOLD counts against reviewed ground truth; time to identify missing evidence; decision latency; percent of commands with complete provenance; audit replay success; operator workload; and incremental value versus existing BAS and commissioning safeguards. Define thresholds jointly before field testing.

11 / Technical questions for Cx and MSI reviewers

Which commands truly require independent consequence review? Where should the gate sit relative to BAS permissions and interlocks? What existing mechanisms already provide equivalent enforcement? Which timestamps and provenance are dependable in practice? Who can revoke authority? How are outages and mandatory protective actions handled? What outcome evidence is sufficient for commissioning acceptance?

12 / Collaboration invitation

TA-14 invites commissioning, MSI, controls, operations and owner representatives to challenge this independent concept and co-design a bounded technical demonstration. No individual or organization is presented as a partner without express agreement.

Proposed next step: a 30-minute architecture critique focused on one AHU command, one authority policy and one falsifiable test case.

13 / Showroom production specification

Visual sequence

01 Hero: commercial building with AHU / controls context, no identifiable people. 02 Architecture: requirements, MSI, continuous evidence, TA-14 gate, commit and outcome feedback. 03 Scenario states: normal, stale evidence, authority conflict, post-action drift. 04 Evidence inspector: source, timestamp, provenance, authority, decision and audit trail.

Interaction and implementation

Build an accessible educational page with scenario selector, command proposal, evidence inspection, deterministic rule engine, decision trace, commit recheck, outcome panel and audit replay. No live actuator connection in the initial version. The decision engine should operate on explicit versioned test fixtures, not inferred language-model outputs.

Required disclaimers

All demonstration data synthetic. No endorsement, certification, independent validation or production deployment implied. Safety and emergency control paths remain outside the experimental gate.

Ownership and review

TA-14 Authority retains stewardship of this proposed architecture. Cx, MSI and owner reviewers retain independent judgment over technical validity and suitability for any deployment. Written consent is required before naming a collaborator or displaying their branding.

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