

AIE-002 | Structured Output Contract & Validation Harness v1

Structured Outputs and Schema Validation

Bounded outcome: Design a versioned structured-output contract that keeps model terminal state, JSON parseability, schema conformance, and application/domain invariants separate; emit typed failures and promote only outputs that pass every declared gate.

Evidence path

Boundary	Inspectable claim	Explicit non-claim
terminal state	Treat terminal as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Valid JSON is not equivalent to schema-valid output, and schema-valid output is not equivalent to factually correct or business-valid content.
raw payload identity	Treat raw payload identity as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Provider strict-schema features reduce structural failures but do not prove truthfulness, authorization, safety, or arbitrary domain invariants.
parse result	Treat parse result as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	This lesson does not own prompt-template change control or untrusted-context policy; those are AIE-003.
schema version	Treat schema version as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	This lesson does not compare candidate models or establish task/locale/risk qualification; that is AIE-004.
schema conformance	Treat schema conformance as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Valid JSON is not equivalent to schema-valid output, and schema-valid output is not equivalent to factually correct or business-valid content.
EVIDENCE BOUNDARY	Separate source facts, local observations, bounded inferences, and human decisions.	Unavailable production behavior remains NOT_OBSERVED or NEEDS_VERIFICATION.

Acceptance gate: Accept only when every critical dimension has inspectable evidence, the negative probe behaves as predicted, and changed-context transfer preserves a residual limitation.

AIE-002 | Blank Evidence Record

Complete every field from retained observations; mark unavailable evidence OPEN.

Canonical field	Observed evidence / value	Evidence type	State
Layer		OBSERVED / INFERRED	OPEN
Evidence		OBSERVED / INFERRED	OPEN
PASS means		OBSERVED / INFERRED	OPEN
Typical typed failure		OBSERVED / INFERRED	OPEN

Source projection: derived_text/tables/structured_output_validation_matrix.md

AIE-002 | Evidence Index

Link every decision to a source, command, output, or explicitly bounded inference.

ID	Evidence type	Source / command	Observation	Supports / falsifies	State
E-01	BASELINE	derived_text/tables/ structured_output_validation_matri x.md			OPEN
E-02	RUNTIME	python3 lab/AIE002-LAB1/run_checks.py			OPEN
E-03	NEGATIVE PROBE	Valid JSON is not equivalent to schema-valid output, and schema- valid output is not.			OPEN
E-04	RECOVERY	Terminal State evidence is inspectable and its non-claim remains explicit.			OPEN
E-05	TRANSFER	EX4			OPEN

Truth rule: Runtime and security claims require retained output from the supplied bounded fixture. Source facts and static readiness are not promoted into production observations.

AIE-002 | Decision Walkthrough

Run the evidence gates in order and preserve unresolved boundaries.

Case	Change	Prediction	Evidence to retain	Decision
SIMPLE	EX1	Treat terminal as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Retain bounded positive or negative evidence.	OPEN
REALISTIC	EX2	Treat raw payload identity as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Retain bounded positive or negative evidence.	OPEN
EDGE OR FAILURE	EX3	Treat parse result as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Retain bounded positive or negative evidence.	OPEN
TRANSFER NEAR	EX4	Treat schema version as a separate evidence boundary and close it only with inspectable observations from the bounded fixture.	Retain bounded positive or negative evidence.	OPEN

Allowed states: ACCEPT, REPAIR, DEFER

Guardrail: A local deterministic fixture does not prove production identity, authorization, confidentiality, integrity, availability, recovery, enforcement, or system-wide security.

AIE-002 | Failure and Repair

Falsify shortcuts before accepting the bounded decision.

Failure	Signal	Repair	Recovery check
Valid JSON is not equivalent to schema-valid output, and schema-valid output is not.	No retained evidence closes the terminal state boundary.	Retain the fixture output that distinguishes observed terminal facts from inference, unknowns, and the.	Terminal State evidence is inspectable and its non-claim remains explicit.
Provider "strict" schema features reduce one class of structural failure but do not prove.	No retained evidence closes the raw payload identity boundary.	Retain the fixture output that distinguishes observed raw payload identity facts from inference.	Raw Payload Identity evidence is inspectable and its non-claim remains explicit.
This lesson does not own prompt-template change control or untrusted-context policy; those.	No retained evidence closes the parse result boundary.	Retain the fixture output that distinguishes observed parse result facts from inference, unknowns, and.	Parse Result evidence is inspectable and its non-claim remains explicit.
This lesson does not compare candidate models or establish task/locale/risk qualification.	No retained evidence closes the schema version boundary.	Retain the fixture output that distinguishes observed schema version facts from inference, unknowns.	Schema Version evidence is inspectable and its non-claim remains explicit.

Transfer case: EX4

Transfer observation: _____

Recomputed decision: _____

AIE-002 | Review and Sign-off

Acceptance requires inspectable evidence plus an explicit residual limitation.

Review control	Required response	Reviewer evidence	Disposition
Canonical fields addressed	YES		OPEN
Negative probe retained	YES		OPEN
Recovery evidence retained	YES		OPEN
Changed-context transfer complete	YES		OPEN
Source facts separated from inference	YES		OPEN
Residual limitation explicit	YES		OPEN
Final bounded decision	ACCEPT / REPAIR / DEFER		OPEN

First explicit non-claim: Valid JSON is not equivalent to schema-valid output, and schema-valid output is not equivalent to factually correct or business-valid content.

Reviewer: _____ Date: _____ Record owner: _____