

Provenance Package Templates

Purpose

A provenance package is the set of fillable scaffolds a builder ships alongside any GROW system that produces consequential output. Each scaffold below is usable as-is. Copy, fill, commit to the system's repo or governance space, and reference from the system's evaluation gate submission.

Six scaffolds:

1. Data Lineage Map
2. Provenance Register
3. Transformation Log
4. Reproducibility Checklist
5. Source-Confidence Matrix
6. Decision-Trace Template

1. Data Lineage Map (scaffold)

```

SYSTEM: <system_id@semver>
LINEAGE MAP VERSION: <semver>
OWNER: <role>
LAST REVIEWED: <YYYY-MM-DD>

SOURCES (from s3-source-inventory-template)
- <source_id_1>: <name> | confidence_band: <high|medium|low|unknown>
- <source_id_2>: <name> | confidence_band: <...>
- <source_id_3>: <name> | confidence_band: <...>

NODES
- Source: <source_id> -> Extraction: <op> -> Transformation: <op> ...
- (use s3-lineage-map-spec node types only: Source, Extraction, Transformation,
  Embedding, Retrieval, Inference, ToolCall, Decision, Output)

EDGES (every edge MUST carry: operation, data_shape, confidence_propagation,
is_deterministic)
- <node_a> -> <node_b> | operation: <...> | data_shape: <...> | conf:
<preserve|downgrade|upgrade-on-merge> | det: <true|false>

NON-DETERMINISTIC SURFACE
- List every edge where is_deterministic=false. These feed s3-reproducibility-controls.

DECISION NODE(S)
- <Decision id>: decision_origin recorded per C2 enum (agent|human-
override|fallback|escalation)

OUTPUT
- <output_id>: content_hash <sha256:...> | downstream consumers <...>

```

2. Provenance Register (scaffold)

The register is the running index of every provenance record the system has emitted. One row per record_id. This is the table operators query during audits.

record_id	timestamp	system_version	model	source_ids	decision_origin	confidence_band	retention_class	corrections	evidence_pointer
<uuid>	<iso>	<semver>	<id>	[<...>]	<enum>	<enum>			
	<class>	[<id>...]	<uri>						

Operating rules:

- Append-only. Corrections are new rows that reference supersedes_record_id in corrections.
- Indexed by record_id, timestamp, and source_id (multi).
- Restricted/regulated rows are surfaced behind access logs per s3-governance-retention-policy.

3. Transformation Log (scaffold)

One transformation log per run. Mirrors transformation_history in the schema but is the human-readable working copy.

RUN

```
record_id: <uuid>
started_at: <iso>
ended_at: <iso>
```

STEPS

- 1) step_id: t1
 - type: Extraction
 - operation: pull fl-dep-lpa0381 disbursements as_of=<iso>
 - inputs: source_id=fl-dep-lpa0381 snapshot_hash=<sha256>
 - outputs: rows=412 hash=<sha256>
 - is_deterministic: true
 - confidence_propagation: preserve
- 2) step_id: t2
 - type: Transformation
 - operation: join parcels x impact zones on parcel_id
 - inputs: <prev outputs>
 - outputs: rows=18204 hash=<sha256>
 - is_deterministic: true
 - confidence_propagation: preserve
- 3) step_id: i1
 - type: Inference
 - operation: draft memo
 - model: <id@rev>
 - prompt_hash: <sha256>
 - temperature: 0.2
 - inputs_hash: <sha256>
 - outputs_hash: <sha256>
 - is_deterministic: false
 - confidence_propagation: downgrade

NOTES

- Any HITL event during this run is recorded as a decision_trace entry; do not log only in prose.

4. Reproducibility Checklist (scaffold)

Use before declaring a system "ready for the evaluation gate" and before any re-run.

PINS

```
[ ] Source snapshots content-hashed and stored
[ ] Lineage map version pinned in record.version.lineage_map_version
[ ] Code version pinned (git SHA or semver) in record.version.system
[ ] Model id + immutable revision in record.version.model
[ ] Prompt template sha256 in record.version.prompt_hash
[ ] Retriever config hashed and recorded
[ ] Tool registry versions pinned
```

DETERMINISM

```
[ ] Deterministic segments produce byte-identical outputs vs. stored hashes
[ ] Non-deterministic segments meet decision-path thresholds (s3-reproducibility-controls)
[ ] Non-deterministic surface inventoried in the lineage map
```

EVIDENCE

```
[ ] Every evidence_pointer resolves
[ ] Every consequential claim has a backward trace per s3-decision-traceability
[ ] No silent unsupported claims
```

GOVERNANCE

```
[ ] retention_class assigned (not defaulted for civic-7yr / regulated-indef)
[ ] permissions inherited from strictest source
[ ] pii_flags / jurisdiction set if applicable
```

SIGN-OFF

```
[ ] Owner: <role> <signature> <iso timestamp>
[ ] Evaluator: <role> <signature> <iso timestamp>
```

5. Source-Confidence Matrix (scaffold)

A compact view of where confidence comes from and where it goes. Feeds s2-scoring-system per C4.

source_id	authoritative	freshness vs.	update_frequency	confidence_band (current)	band_rationale	drives_confidence_for (claim_types)	downgrade_triggers
fl-dep-lpa0381	true	within window	high	Statutory grant ledger reconciled weekly by treasurer.	grant_disbursement, encumbrance	weekly miss	
wcpa-parcels	true	within window	high	County system-of-record under FS Ch. 193 with daily refresh.	parcel_ownership, parcel_geometry	API outage	
ownerrez-bookings	true	within window	high	Booking system-of-record; high for booking events themselves.	booking_event, payout_event	reconcile delta > \$50	
aifg-transcripts	false	within window	medium	Machine transcript with measurable NER drift.	quote_attribution, episode_topic	NER error rate	
ecoguardian-stream	true	within window	medium	Authoritative sensor feed pending calibration verification.	turbidity_p95, sensor_uptime		
airbnb-csv-dump	false	stale	low	Manual monthly export, overlaps ownerrez; never standalone.	revenue_cross_check	always low	

band_rationale is a required per-row field on s3-source-inventory-template (contract C4). Carry it through this matrix verbatim — do not paraphrase between the inventory and the matrix.

6. Decision-Trace Template (scaffold)

One per consequential output. Maps each claim to evidence and to its decision_origin.

OUTPUT

```
artifact: <path or uri>
record_id: <uuid>
shipped_at: <iso>
audience: <internal | constituent | regulator | guest | publication>
```

CLAIMS

```
1) text: "<claim text>"
   kind: retrieved data | model inference | user input | tool output
   source_id(s): [<...>]
   evidence_pointer: <uri or hash#range>
   confidence_band: <enum>
   inline_qualifier: <none | [unsupported] | [low confidence] | [stale source]>
   decision_origin event(s): [<event_id_1>, <event_id_2>]

2) text: ...
```

UNSUPPORTED CLAIMS HANDLING

```
[ ] Each unsupported claim was removed, rewritten, or qualified
[ ] Any escalation routed per s1-hitl-review-policy
```

HITL EVENTS (C2 shape)

```
- event_id: <id>
  timestamp: <iso>
  agent_id: <id>
  decision_origin: <agent|human-override|fallback|escalation>
  evidence_pointer: <uri>
  rationale: <text>
```

SIGN-OFF

```
- Author (system or human): <id>
- Reviewer (if HITL): <role/name> <iso>
```

How the Six Fit Together

The Lineage Map is the blueprint. The Provenance Register is the ledger. The Transformation Log is the per-run worksheet. The Reproducibility Checklist is the gate. The Source-Confidence Matrix is the dashboard that pushes source_confidence to Course 2. The Decision-Trace Template is what travels with the output to its reader.

Ship all six. Anything less is an outline, not provenance.