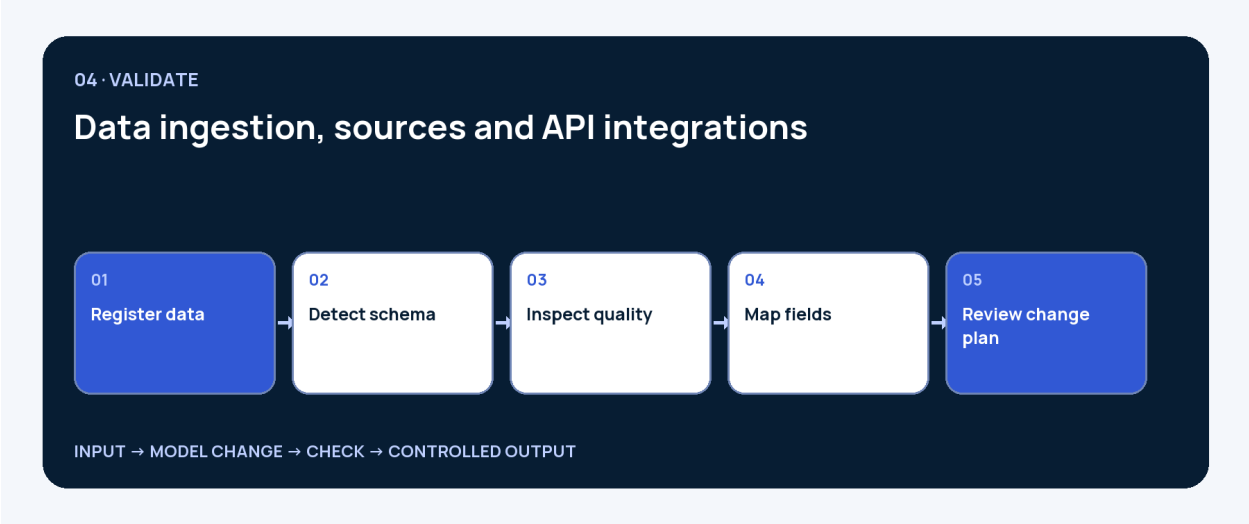
Axion

Data ingestion, sources and API integrations

Capture, map, review and apply company data under control



EDITION 2.6 · 19 AUGUST 2026 · MODULE MANUAL · 04 · VALIDATE

Axion · Bioprocess engineering software

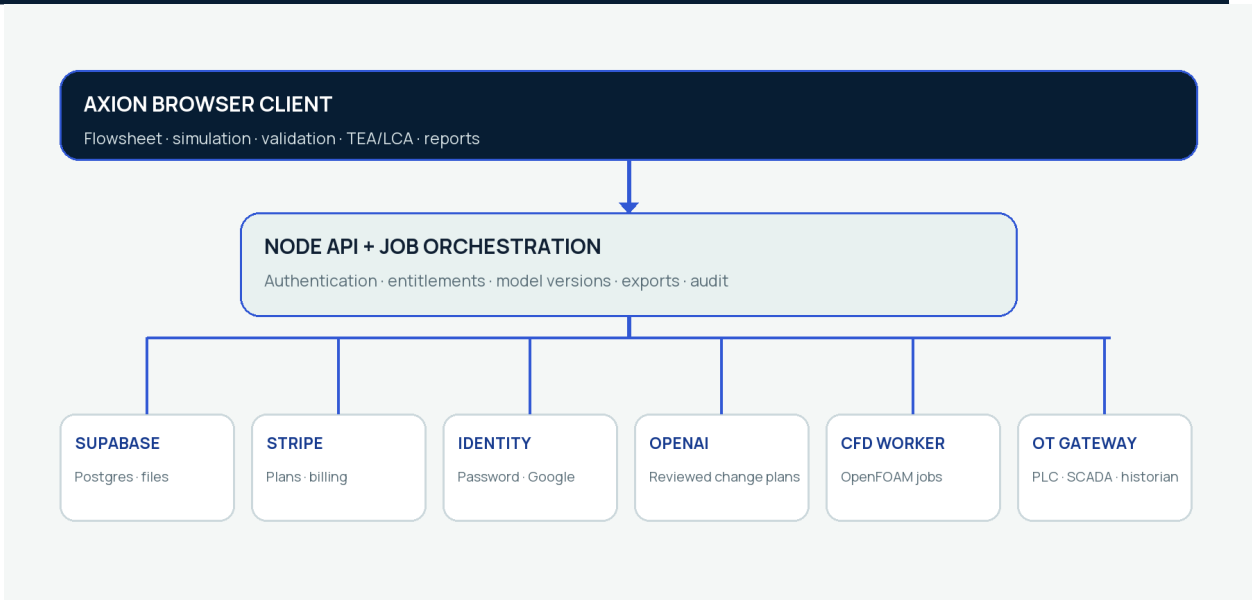
At a glance

Engineering decision	Path in Axion
Which external data may replace which model assumption, and how does every change remain traceable?	Validate → Data & sources / API connectors

Primary users	Permitted maturity
Data Engineering, Process Development, MSAT, IT/OT, Reviewer	Data ingestion alone never raises maturity; technical review and model validation remain required

DECISION RULE

Axion converts CSV, TSV, JSON and registered connectors into a governed data inventory. Accepted changes retain source, unit, timestamp, reviewer, mapping and rollback version.



Relevant Axion workspace for this module manual.

Prepare the model

Input	Why it is required	Ready when
Files and endpoints	Provide historian, MES, LIMS, batch, supplier, TEA/LCA or schedule data.	Owner, period, format and usage right are confirmed.
Schema and tag map	Maps external fields to model variables.	Tag, unit, type, frequency and target are defined.
Quality rules	Detect missing data, outliers, unit and time errors.	Acceptance limits and error handling are set.
Provenance	Supports audit and reproduction.	Source, import time, hash, reviewer and transformations are stored.
Permissions	Restricts data access and writes.	Least privilege, organisation and project boundary are reviewed.

Preflight check

- Confirm the correct project, branch and controlled version
- Verify units, provenance and permissions
- Save a restore point before a decision-relevant change
- Keep blocking gaps visible

APPLICABILITY LIMIT

A successful connection or clean dataset does not prove model accuracy. Technical review and validation remain required.

Workflow

1. Register data

1. Upload files in bulk or add a connector and classify the data type.

VISIBLE RESULT

Registry shows owner, type, period and state.

2. Detect schema

2. Detect columns, types, time axis, units and IDs.

VISIBLE RESULT

A mapping proposal is visible but not applied.

3. Inspect quality

3. Review completeness, plausibility, duplicates, outliers and coverage.

VISIBLE RESULT

A quality score and actionable error list are produced.

4. Map fields

4. Map only reviewed fields to parameters, states, streams, schedule or LCA.

VISIBLE RESULT

Every mapping shows source, transformation and target.

5. Review change plan

5. Read before/after, affected modules and recalculation order.

VISIBLE RESULT

No hidden or unitless change remains.

6. Apply and recalculate

6. Apply accepted values transactionally and refresh affected views.

VISIBLE RESULT

Version, audit entry and new results are visible.

7. Test rollback

7. Restore the previous version in a separate test.

VISIBLE RESULT

The original state is reproducible.

Review the result

Review criterion	Pass condition	If it fails
Scope and structure	The documented criterion is satisfied and supported by traceable evidence.	Correct the model or keep the output Not decision-ready.
Units and balances	The documented criterion is satisfied and supported by traceable evidence.	Correct the model or keep the output Not decision-ready.
Evidence and uncertainty	The documented criterion is satisfied and supported by traceable evidence.	Correct the model or keep the output Not decision-ready.
Reproducibility	The documented criterion is satisfied and supported by traceable evidence.	Correct the model or keep the output Not decision-ready.
Review state	The documented criterion is satisfied and supported by traceable evidence.	Correct the model or keep the output Not decision-ready.

DECISION RULE

A successful connection or clean dataset does not prove model accuracy. Technical review and validation remain required.

Troubleshooting

Observation	Likely cause	Correction
The result looks plausible but cannot be explained	Inputs, units, model version or evidence are missing.	Open the relevant register, restore traceability and rerun.
A change affects unexpected outputs	Dependencies or imported mappings were not reviewed.	Inspect the change plan and before/after diff; undo if required.
The module appears complete but readiness is low	Required industrial evidence is still missing.	Assign the visible gaps and keep maturity at Screening or Not decision-ready.

Handover and next steps

Artifact	Recipient	Must contain
Module result package	Engineering reviewer	Inputs, calculations, results, units, intervals, maturity
Readiness register	Model owner	Gap, required work, owner, due date, intended use
Controlled version	Project team	Branch, version, change note, reviewer and restore point

Completion check

- The active project, branch, version and intended use are visible.
- All inputs have units, provenance, review state and uncertainty where relevant.
- Blocking model, physical, numerical and evidence gaps are closed or assigned.
- The result maturity matches the available evidence.
- A controlled output package opens correctly and includes limitations.

Open Axion Book technical onboarding