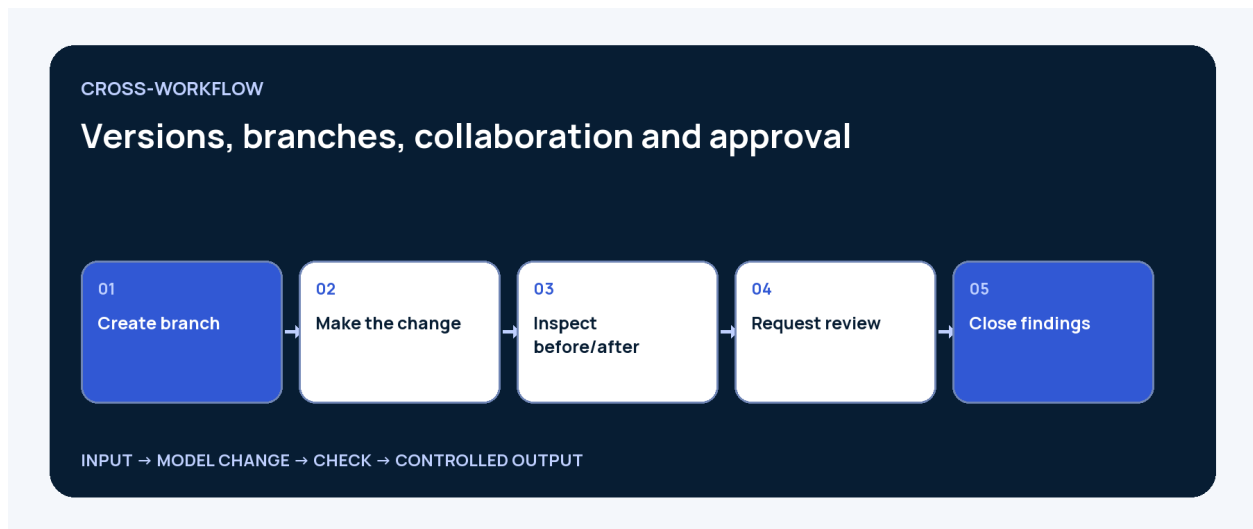


Versions, branches, collaboration and approval

Develop, compare, review and restore alternatives traceably



EDITION 2.6 · 19 AUGUST 2026 · MODULE MANUAL · CROSS-WORKFLOW

Axion · Bioprocess engineering software



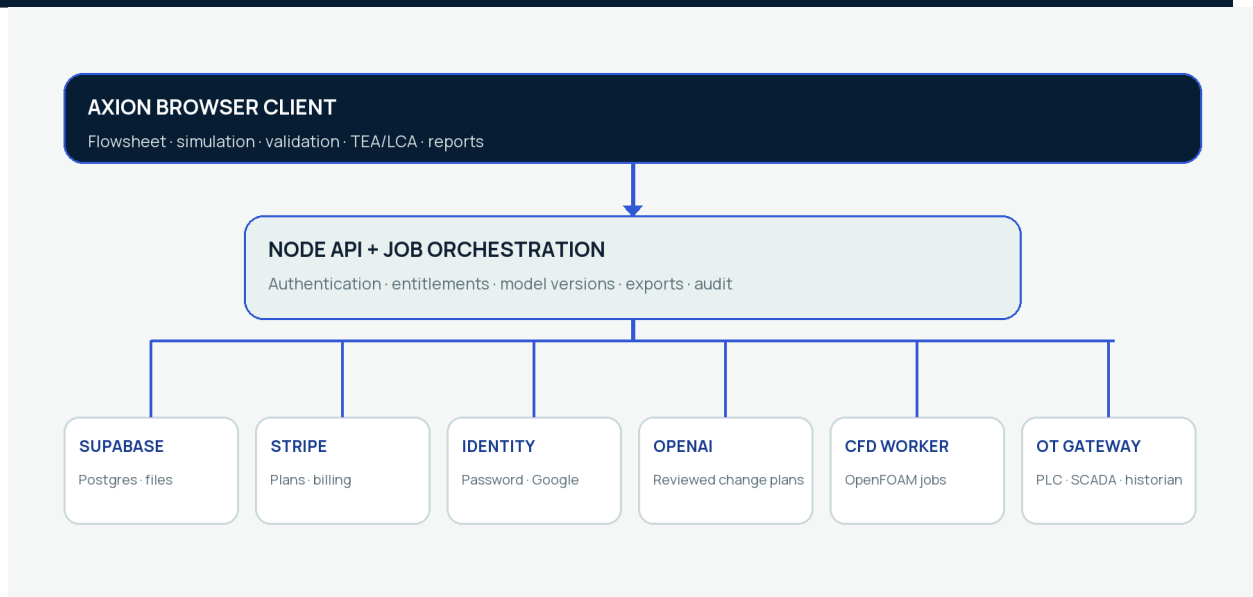
At a glance

Engineering decision	Path in Axion
Which change was approved by whom, why and with which technical impact?	Projects + versions → Branches / Versions / Collaborators / Review

Primary users	Permitted maturity
All editors, Model Owner, Reviewer, Approver, Project Lead	Keep branch status separate from model maturity; a merge is not technical validation

DECISION RULE

Axion uses a Git-like model history. Baselines remain protected, alternatives live in branches, diffs expose structural and KPI impact, and approvals capture author, reviewer and residual uncertainty.



Relevant Axion workspace for this module manual.



Prepare the model

Input	Why it is required	Ready when
Baseline	Defines the controlled starting state.	Version, scope, maturity and approval are fixed.
Change request	States objective, scope and risk.	Owner, affected modules and acceptance criteria are defined.
Branch	Isolates alternatives and parallel work.	Name, base version, owner and purpose are unique.
Review roles	Prevents self-approval for critical changes.	Author, reviewer and approver are separated.
Diff basis	Compares model structure and results, not only text.	Parameters, units, streams, equations, KPIs and evidence are included.

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

Versioning makes changes traceable, not automatically correct. Merge does not replace validation or QMS signatures.



Workflow

1. Create branch

1. Create a named alternative from the approved baseline.

VISIBLE RESULT

Branch shows base commit, owner and purpose.

2. Make the change

2. Edit only the change scope and version intermediate work.

VISIBLE RESULT

Audit trail lists structured operations.

3. Inspect before/after

3. Compare flowsheet, parameters, data, equations, schedule and results.

VISIBLE RESULT

The diff explains change and impact.

4. Request review

4. Invite a reviewer with context, criteria and open findings.

VISIBLE RESULT

Review state and comments are linked to the model.

5. Close findings

5. Document correction, rationale or accepted residual risk.

VISIBLE RESULT

No blocking finding remains unanswered.

6. Merge and approve

6. Merge the reviewed branch and create a controlled version.

VISIBLE RESULT

Approval includes author, reviewer, date, maturity and restore point.



7. Test restore

7. Open the previous version in a test context.

VISIBLE RESULT

Model and artifacts are 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

Versioning makes changes traceable, not automatically correct. Merge does not replace validation or QMS signatures.



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.

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