



MODULE MANUAL

Flowsheet, equipment, streams and equations

Build, connect and technically inspect a complete process graph

DOCUMENT BASIS

Product workflows, visible results, review criteria, evidence boundaries and controlled handover.

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6 OCTOBER 2026



Document control

One controlled basis for public product guidance.

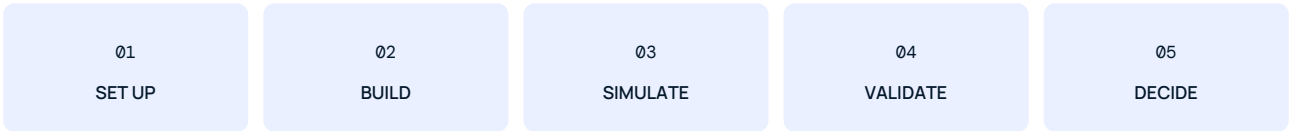
FIELD	VALUE
Document ID	M02-EN-4.2
Release	4.2
Reviewed	6 October 2026
Audience	Process Engineering, Process Development, MSAT, Facility Design
Purpose	Is the process architecture complete, directed, balance-ready and suitable for the intended study?
Owner	Acatian Product and Engineering

APPLICABILITY LIMIT

This manual explains the product workflow and the evidence needed to interpret its outputs. It does not replace qualified engineering judgement, customer quality systems, safety review, equipment-vendor data or validation for a regulated intended use.

Scope and use

Use the navigation path, input register, visible-result description, review criteria and handover record together. A screen or exported number without its model version, basis, unit, evidence status and limitations is not a controlled engineering result.



LANGUAGE

This document is written consistently in English. Product navigation names remain as displayed in the interface.

Flowsheet, equipment, streams and equations

Build, connect and technically inspect a complete process graph

01
SET UP

02
BUILD

03
SIMULATE

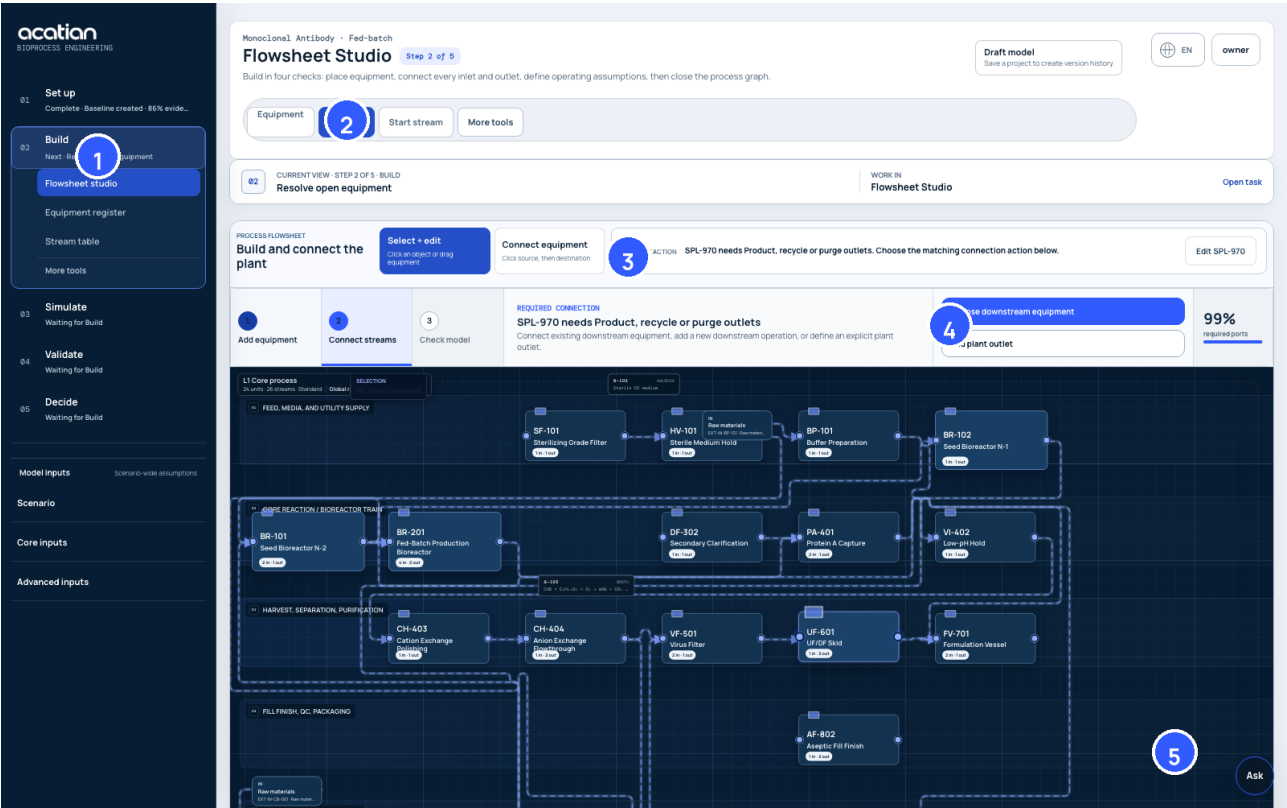
04
VALIDATE

05
DECIDE

ENGINEERING DECISION	PATH IN ACATIAN
Is the process architecture complete, directed, balance-ready and suitable for the intended study?	Build > Flowsheet studio / Diagram studio / Equipment register / Stream table / Model equations
PRIMARY USERS	PERMITTED MATURITY
Process Engineering, Process Development, MSAT, Facility Design	Draft to Screening; Calibrated only with project-specific equipment and stream data

START WITH THE DECISION

The flowsheet is the shared calculation and communication graph. Every unit needs meaningful inlets or outlets; external supply and discharge are modelled as explicit boundary streams.



Illustrative interface using a synthetic training model. Values shown are not customer data, a benchmark or a validated engineering claim.

Prepare the model

INPUT	WHY IT MATTERS	READY WHEN
Unit-operation list	Defines main, support, utility, cleaning and waste steps.	Every operation has a tag, function and stage.
Component list	Enables component balances and reactions.	Names, formulas, phase and base unit are unique.
Stream basis	Defines flow, composition, state and direction.	Source/target, units, temperature, pressure and time basis exist.
Equipment basis	Connects size, duty, material, mode and standards.	Nominal/working volume and sizing rule are documented.

Preflight check

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

Workflow

01

Read the hierarchy

Inspect L0-L6 and separate main process, support, utilities, CIP and waste.

VISIBLE RESULT: Every area has one clear technical role.

02

Place equipment

Filter the library, add a unit, tag and classify it.

VISIBLE RESULT: The unit appears on canvas and in the register.

03

Create boundary streams

Add an external inlet or outlet directly to the unit.

VISIBLE RESULT: Material can cross the model boundary.

04

Connect internal streams

Set source, target, ports, direction and stream type.

VISIBLE RESULT: Arrow direction and connection count agree.

05

Inspect equations

Open reactions, separations, accumulation, energy and economics.

VISIBLE RESULT: Every calculated quantity has equation and unit.

06

Audit the graph

Check isolated units, open ports, cycles and unexplained bypasses.

VISIBLE RESULT: No unexplained main-process island remains.

Review the result

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.

APPLICABILITY LIMIT

A connected diagram is not yet a closed model. Components, reactions, states and numerical tolerances require review.

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.

Controlled handover

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

CHECK	The active project, branch, version and intended use are visible.
CHECK	Inputs carry units, provenance, review state and uncertainty where relevant.
CHECK	Blocking model, physical, numerical and evidence gaps are closed or assigned.
CHECK	The result maturity matches the available evidence.
CHECK	The output package opens correctly and includes its limitations.

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