PLATFORM OVERVIEW

One governed model, from reservoir to tanker

Fields, offshore and FPSO, pipelines, terminals and refining intake run on one model, through measurement, allocation and commercial settlement. The volume recorded at the wellhead and the volume a partner is billed for are the same number, with the working shown.

RESERVOIR — FIELD — OFFSHORE — PIPELINE — TERMINAL — REFINERY — TANKER

Five operating consoles and a corporate rollup. Licence one, or run the whole chain.

UPSTREAM

Field operations

Wells, well tests, batteries, field tanks, BS&W lab.

OFFSHORE

Offshore & FPSO

Production, cargo tanks, offloading, metocean gates.

MIDSTREAM

Pipeline management

Throughput, batch tracking, storage, quality.

MIDSTREAM

Marine terminals

Nominations, berth scheduling, lifting, demurrage.

DOWNSTREAM

Processing & refining

Unit yields, blending, product tanks, quality lab.

ACROSS THE CHAIN

Corporate rollup

Enterprise dashboard, consolidated balance, ERP events.

Shared by every module

One model

One asset hierarchy, one unit-of-measure regime and one balance, shared by every module.

Data arrives on its own

Reads from the systems already measuring your operation and publishes results to the systems that need them.

Conventional and unconventional

Shale pads, multi-lease laterals and hyperbolic decline are handled inside the allocation engine.

Evidence you can defend

Every figure traces down through the ledgers and the allocation run to the reading that produced it.

AI that drafts only

Grounded in your own operating history. Nothing is committed without an operator confirming it.

Your hosting choice

Hosted, single-customer on your network, or a dedicated cloned instance. Functionality is the same.

Cross-cutting studios

Artificial lift

Surveillance, triage and optimization for ESP, gas lift, rod pump and PCP wells.

Simulation and calibration

First-principles nodal, gathering and facility models, re-tuned on field evidence.

Workflow orchestration

Governed pipelines with retries, approval gates and a full audit trail.

Start with one facility and your own records. hydrocarbonflow.com

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RESERVOIR TO TANKER

PRODUCT SHEET

UPSTREAM

Field operations

Wellhead production captured where it happens, and carried into the balance without re-keying.

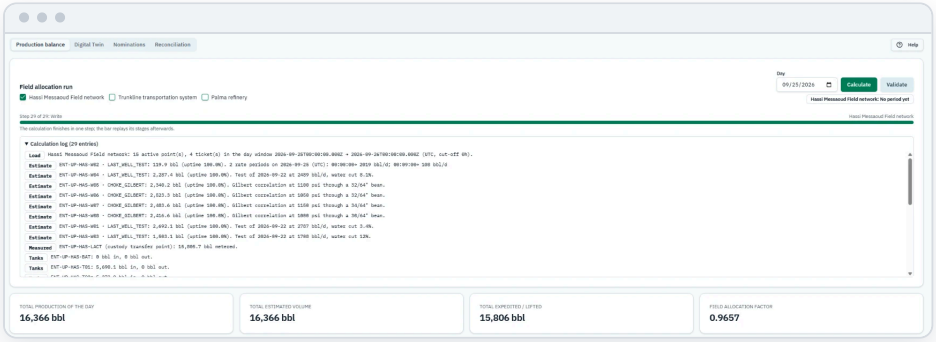
Conventional and unconventional fields on one governed model: wells, tests, artificial lift, batteries and the daily field balance that feeds allocation.

IN THE CHAIN **RESERVOIR** **FIELD** OFFSHORE PIPELINE TERMINAL REFINERY TANKER

What it does

- Wells and well readings: oil, water and gas rates, pressures, choke and status
- API 11L dynamometer card mechanical analysis: wave equation solution, fillage % and rod stress
- Gas lift performance curves (GLPC) and Turner-Coleman critical velocity liquid loading detection
- Field batteries, three-phase separation and field tanks
- Unconventional pads: multi-well horizontals, test headers and frac load-water segregation
- Reservoir zonal allocation and gas-lift / voidage replacement accounting
- Autonomous artificial lift surveillance: ESP, rod pump, gas lift, PCP and plunger lift
- High-frequency ESP oscilloscope: 3-phase motor current harmonics and thermal runaway protection
- Well tests with multi-phase and wet-gas measurement
- Quality lab: BS&W, water cut, density and sampling records
- Multi-tract laterals split by perforated length, frac stages, clusters or agreed acreage
- Daily field balance feeding allocation and back-allocation

PLATFORM SCREEN · SAMPLE DATA



Daily field allocation run: every estimate, meter and tank in one calculation log, with the field allocation factor beside the totals.

Highlights

Autonomous lift triage radar

Real-time exception triage across ESP, rod lift, PCP, gas lift and plunger wells, prioritized by production at risk.

API 11L dyno card diagnostics

Surface to downhole card transforms calculating pump fillage, fluid pound, gas interference and unanchored tubing.

Turner liquid loading engine

SPE 11449 droplet drag calculations giving critical velocity thresholds to prevent hydrostatic tubing loading.

High-frequency ESP protection

1-second current waveform, vibration harmonics and intake pressure monitoring to prevent gas locking and burnouts.

Optimization with operator control

Drafted changes to VSD frequency, pump-off intervals and gas-injection chokes, confirmed with digital sign-off.

WHO USES IT

Field managers
One daily picture of every well, battery and tank.

Production engineers
Well tests, lift diagnostics and decline context in one place.

Field operators
Rounds and readings captured once, on or offline.

STANDARDS AND METHODS

- API MPMS Ch. 20 (allocation)
- API Spec 11L / RP 11L (sucker rod design)
- API RP 11S (ESP installations)
- SPE 11449 / SPE 39773 (liquid loading)
- ISO 15136 (PCP systems)
- API MPMS Ch. 21 (EFM)
- AGA-3 / AGA-7 / AGA-8

RUNS ON THE SAME MODEL AS

- Offshore operations & FPSO
- Pipeline management
- Marine terminals
- Processing & refining
- Corporate rollup

Licence one module, or run the whole chain.

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RESERVOIR TO TANKER

PRODUCT SHEET

OFFSHORE

Offshore operations & FPSO

Floating production treated as a facility in the same model, through to custody hand-over.

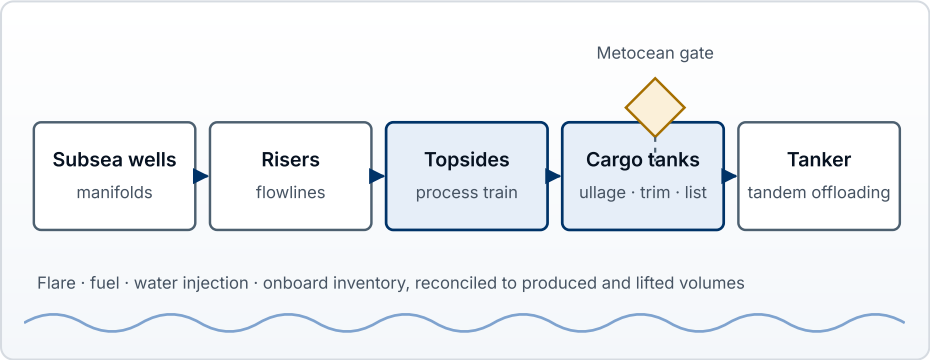
Subsea wells, topsides processing, cargo tanks and tandem offloading reconciled against produced and lifted volumes.

IN THE CHAIN: RESERVOIR · FIELD · **OFFSHORE** · PIPELINE · TERMINAL · REFINERY · TANKER

What it does

- Subsea wells, risers, separation, compression, water injection and flare
- Cargo tanks with ullage, trim and list, and inert gas status
- Tandem offloading and offtake execution with custody transfer
- Metocean conditions as go / no-go gates on operations
- Onboard inventory reconciled against produced and lifted volumes

ILLUSTRATIVE SCHEMATIC



Illustrative flow from subsea wells to the shuttle tanker, with the metocean gate ahead of offloading.

Highlights

Topsides balance
Separation, compression, fuel, flare and injection carried as one facility balance.

Cargo tank accounting
Ullage with trim and list correction, free water and inert-gas status per tank.

Offloading governance
Metocean gates and custody evidence recorded before a tandem lift is released.

WHO USES IT

Offshore installation managers
Production, flare and inventory on one screen.

Marine & cargo superintendents
Offloading windows and tank state ahead of the shuttle tanker.

Production accountants
Lifted volumes reconciled to produced volumes.

STANDARDS AND METHODS

- API MPMS Ch. 17 (marine measurement)
- API MPMS Ch. 12 (calculations)
- ISGOTT
- OCIMF guidance

RUNS ON THE SAME MODEL AS

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SCREENS SHOW SAMPLE DATA

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PRODUCT SHEET

MIDSTREAM

Pipeline management

Movements between facilities recorded as traceable batches rather than a gap in the chain.

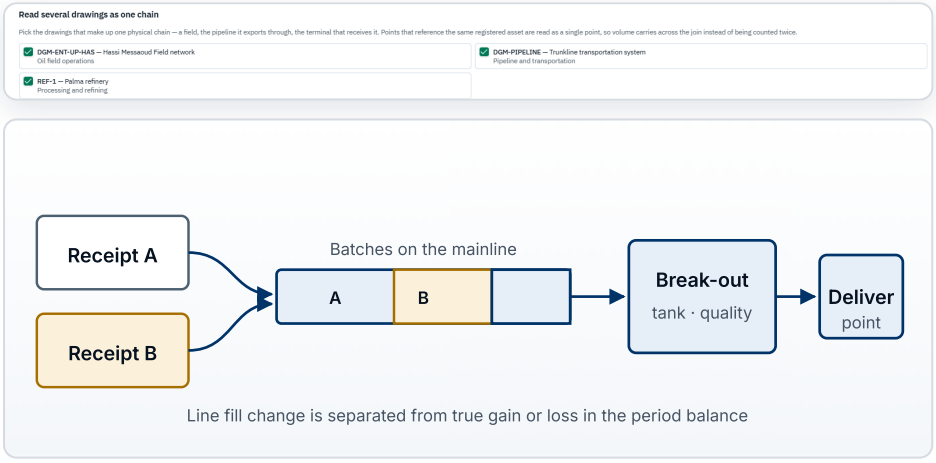
Mainline throughput, batches, line fill and losses balanced between every custody point.

IN THE CHAIN: RESERVOIR · FIELD · OFFSHORE · **PIPELINE** · TERMINAL · REFINERY · TANKER

What it does

- Mainline throughput, pressures and line status
- Batch tracking from injection to delivery point
- Break-out and storage tank inventories along the route
- Pipeline quality lab and specification checks per batch
- Line fill, gains and losses surfaced in the period balance

PLATFORM SCREEN · SAMPLE DATA, WITH ILLUSTRATIVE SCHEMATIC



Above: several drawings read as one chain, so a point on the same registered asset is counted once.
Below: batches tracked from receipt to delivery point.

Highlights

Batch lineage
Every delivered batch traced back to its injection receipts and quality.

Line pack & loss
Line fill changes separated from true gains and losses in the period balance.

Nomination against capacity
Shipper nominations checked against real line and tank capacity.

WHO USES IT

Pipeline schedulers
Batches, nominations and capacity on one timeline.

Control-room supervisors
Line status and exceptions without re-keying.

Commercial analysts
Shipper balances from the same run as operations.

STANDARDS AND METHODS

- API MPMS Ch. 11 (volume correction)
- API MPMS Ch. 6 (metering)
- AGA-8 for gas lines

RUNS ON THE SAME MODEL AS

- Field operations
- Offshore operations & FPSO
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PRODUCT SHEET

MIDSTREAM

Marine terminals

The commercial edge of the chain: nomination to bill of lading, scheduled against real berth capacity.

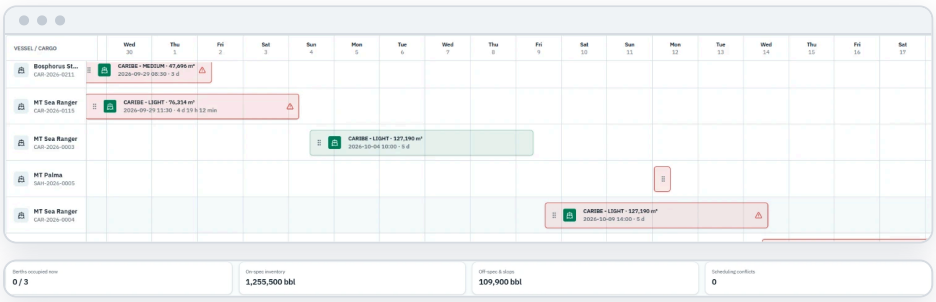
Contracts, cargo scheduling, berths and tank farms through lift execution and official marine documents.

IN THE CHAIN: RESERVOIR · FIELD · OFFSHORE · PIPELINE · **TERMINAL** · REFINERY · **TANKER**

What it does

- Contracts, nomination cycles and lifting programmes
- Cargo schedule with a draggable vessel timeline and conflict detection
- Berths, jetties, loading arms, pipelines and tank farms
- Lift execution, marine certificates of quality and ISGOTT checks
- Laytime, demurrage and downtime events with evidence attached

PLATFORM SCREEN · SAMPLE DATA



The 30-day loading plan shows scheduling conflicts in red, and terminal inventory is reported as on-spec and as off-spec and slops.

Highlights

Cargo scheduling
A 30-day vessel timeline checked against berth, tank and pipeline capacity.

Official documents
Bill of lading, ullage report, certificate of quality and laytime statement from one record.

Demurrage evidence
Downtime and delay events time-stamped with the evidence attached.

WHO USES IT

Terminal managers
Berth occupancy, tank inventory and lifts in one view.

Marine schedulers
Conflicts visible before the vessel arrives.

Commercial teams
Bills of lading and invoices agreeing with operations.

STANDARDS AND METHODS

- API MPMS Ch. 17
- ISGOTT safety checklist
- ASTM D1250 / API Ch. 11.1
- Incoterms-aware documentation

RUNS ON THE SAME MODEL AS

- Field operations
- Offshore operations & FPSO
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PRODUCT SHEET

DOWNSTREAM

Processing & refining

Refinery intake, conversion and finished product held to the same accounting discipline.

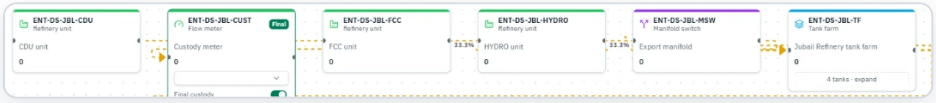
Feedstock receipt, unit yields, blending and product dispatch closing into the enterprise position.

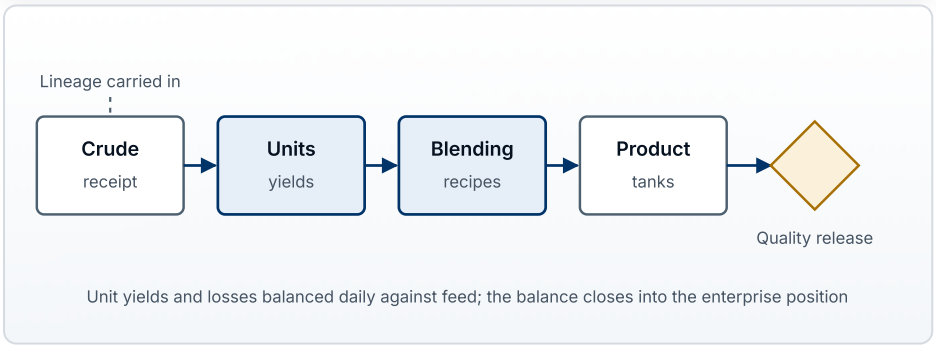
IN THE CHAIN: RESERVOIR · FIELD · OFFSHORE · PIPELINE · TERMINAL · **REFINERY** · TANKER

What it does

- Unit states, run rates and yields by process unit
- Finished-component blending and recipe execution
- Product tanks and movements into dispatch
- Downstream quality lab and product specification conformance
- Refinery balance closing into the enterprise position

PLATFORM SCREEN · SAMPLE DATA, WITH ILLUSTRATIVE SCHEMATIC





Above: a refinery network drawn as units, a custody meter, a manifold switch and a tank farm. Below: intake to dispatch, with the balance closing into the enterprise.

Highlights

Intake tied to origin
Crude receipts carry their pipeline or cargo lineage into the plant.

Yield accounting
Unit yields and losses balanced daily against feed.

Quality release
Product specifications checked before dispatch.

WHO USES IT

Process engineers
Unit yields and run rates against plan.

Refinery planners
Blends and tank movements on one schedule.

Plant accountants
A balance that closes into the corporate position.

STANDARDS AND METHODS

- ASTM product specifications
- API MPMS Ch. 11
- Mass and volume balance conventions

RUNS ON THE SAME MODEL AS

- Field operations
- Offshore operations & FPSO
- Pipeline management
- Marine terminals
- Corporate rollup

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RESERVOIR TO TANKER

PRODUCT SHEET

ACROSS THE CHAIN

Corporate rollup

Licence one module or run the integrated chain. The enterprise position appears once more than one is active.

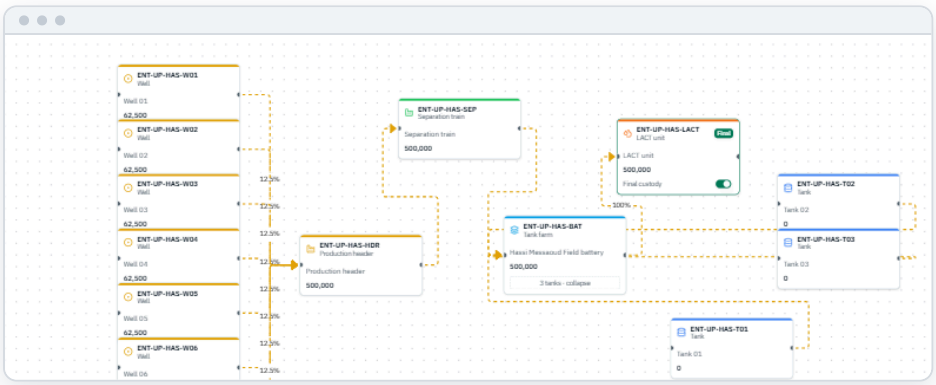
A bird's-eye view of production, reliability, throughput and export performance across every facility.

IN THE CHAIN RESERVOIR · FIELD · OFFSHORE · PIPELINE · TERMINAL · REFINERY · TANKER

What it does

- Corporate dashboard across facilities and modules
- Enterprise balance and risk position
- Value-chain map from reservoir to tanker
- Consistent units, entities and periods across every segment
- Structured outbound events for SAP and Oracle

PLATFORM SCREEN · SAMPLE DATA



Wells, headers, separation, tanks and a custody point drawn as one network. Roll-up rules are set on each point and connection.

Highlights

Multi-facility stitching

Shared registered assets carry volume across facility borders without double counting.

Per-node roll-up rules

Add up, average, highest or lowest day, or a custom formula: configured, not coded.

ERP agreement

Cargo and bill-of-lading records sent to the commercial system of record.

WHO USES IT

COO & executives
Production, uptime and export performance on one page.

CIO & CTO
One model instead of stitched point tools.

Finance
Operational and commercial numbers from the same run.

STANDARDS AND METHODS

- Date-effective network versions
- Segregation of duties
- Audit trail on every published figure

RUNS ON THE SAME MODEL AS

- Field operations
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PRODUCT SHEET

MODULE · ARTIFICIAL LIFT

Artificial lift surveillance and optimization

ESP, gas lift, sucker rod and PCP wells monitored in one vendor-neutral studio, with every setpoint change linked to produced, allocated and deferred volumes.

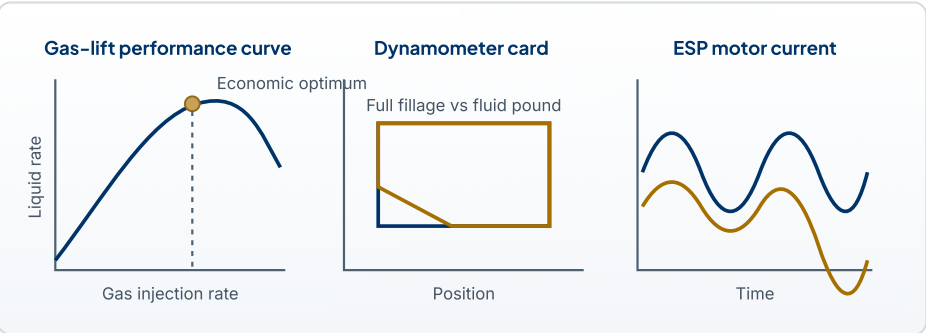
Autonomous surveillance, fleet triage, downhole dynamometer card mechanics, high-frequency ESP oscilloscope harmonics and Turner-Coleman liquid loading algorithms, grounded in SPE and API literature.

IN THE CHAIN **RESERVOIR** **FIELD** **OFFSHORE** PIPELINE TERMINAL REFINERY TANKER

What it does

- Fleet triage radar and exceptions across ESP, rod pump, gas lift, PCP and plunger wells
- High-frequency ESP oscilloscope: motor current harmonics, thermal runaway and gas-lock detection
- Turner-Coleman liquid loading engine for gas wells
- Operator-confirmed setpoint drafts: VSD frequency, pump-off intervals, gas-injection chokes
- API 11L dyno card mechanical analyzer: fillage, fluid pound, gas interference, unanchored tubing
- Gas-lift performance curves with the economic optimum injection rate
- Data-integrity checks on well and lift telemetry
- Surveillance tied to allocation and deferment accounting

ILLUSTRATIVE SCHEMATIC



Illustrative plots: a gas-lift performance curve with its economic optimum, a dynamometer card at full fillage and with fluid pound, and a motor current waveform.

Highlights

Prioritized by production at risk

Exceptions are ranked by run-life risk and deferred rate, so the team starts with the wells that cost the most.

Grounded in the literature

Turner et al. (1969), Coleman et al. (1991), Gibbs (1963), API RP 11L and API RP 11S underpin the calculations.

Optimization with operator control

The platform drafts a change and an engineer confirms it. Nothing is applied without digital sign-off.

> Telemetry reaches the studio through the platform's ingestion layer. The connection to your historian is set up per site.

WHO USES IT

Production engineers
Lift diagnostics and optimisation in one place.

Field operators
Exceptions that say which well to visit first.

Production accountants
Setpoint changes linked to deferred volumes.

STANDARDS AND METHODS

- API Spec 11L / RP 11L
- API RP 11S (ESP)
- SPE 11449 / SPE 39773
- ISO 15136 (PCP)
- IEEE Std 519 (harmonics)

RUNS ON THE SAME MODEL AS

- Field operations
- Offshore & FPSO
- Pipeline management
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PRODUCT SHEET

MODULE · PHYSICAL TWIN

Multiphase simulation and auto-calibration

Continuous nodal analysis from sandface inflow through wellbores, artificial lift and surface gathering to the facility and the custody meter.

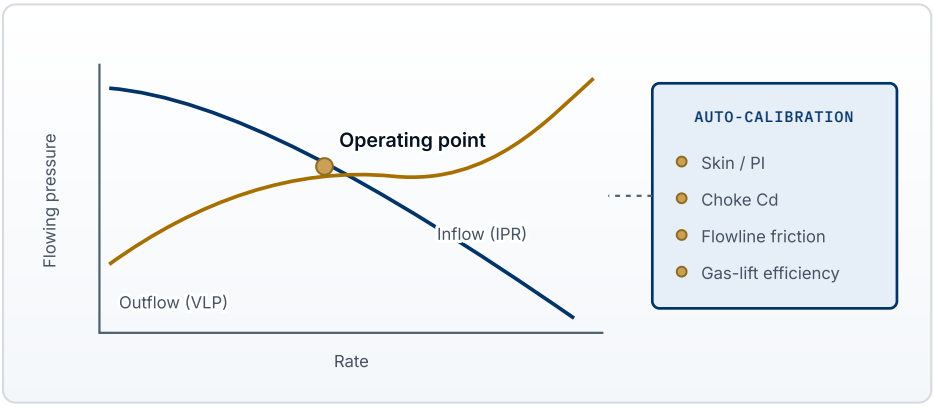
First-principles models run inside the daily accounting loop, so capacity, losses and allocation come from the same physics.

IN THE CHAIN **RESERVOIR** **FIELD** **OFFSHORE** PIPELINE TERMINAL **REFINERY** TANKER

What it does

- Inflow: Darcy, Vogel, composite Vogel and Fetkovich models
- Six artificial lift models: gas lift, ESP, rod pump, PCP, jet pump and plunger lift
- Facility: Peng-Robinson flash, three-phase separation, TEG dehydration, Joule-Thomson chilling, stabilisation with RVP control and compressor trains
- Component network balance and shortfall accounting on the same results
- Outflow: Beggs-Brill hydraulics integrated along the directional survey, with a nodal operating-point solver
- Surface gathering: flowline pressure drop, liquid holdup, choke hydraulics and manifold mixing
- Slug-catcher model: surge buffer margin, high-high trip and the upstream curtailment needed
- Unit-agnostic: every result carries the unit declared on the equipment and the platform standard unit

ILLUSTRATIVE SCHEMATIC



Illustrative nodal plot: inflow and outflow curves intersect at the operating point, and the calibration engine re-fits the parameters that move the curves.

Highlights

Auto-calibration engine

Fits skin or productivity index, choke discharge coefficient, flowline friction and gas-lift efficiency to field evidence, with bounds and a prior so one bad reading cannot destabilise the model.

Governed refusals

The engine refuses physically impossible inputs, such as flowing pressure at or above reservoir pressure or a non-positive test rate.

Benchmark, then replace

Connectors to licensed well and pipeline simulators allow side-by-side benchmarking before anything is switched off.

Calibration is run on your own tags and well tests during a proof of value.

WHO USES IT

Production engineers
Well potentials and lift optimum without spreadsheet exports.

Facility engineers
Separation, stabilisation and compression in the daily loop.

Reservoir and asset teams
Models that stay close to field behaviour.

STANDARDS AND METHODS

- SPE-4007 (Beggs and Brill)
- Peng-Robinson (PR-78) equation of state
- GPA 2145 (properties)
- Standing / Vasquez-Beggs PVT correlations

RUNS ON THE SAME MODEL AS

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Licence one module, or run the whole chain.

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RESERVOIR TO TANKER

PRODUCT SHEET

MODULE · WORKFLOW ORCHESTRATION

Workflow orchestration and resilient pipelines

Daily allocation roll-forwards, custody reconciliations and hydrocarbon balances run as governed pipelines, with dependencies, retries, human approval gates and a full audit trail.

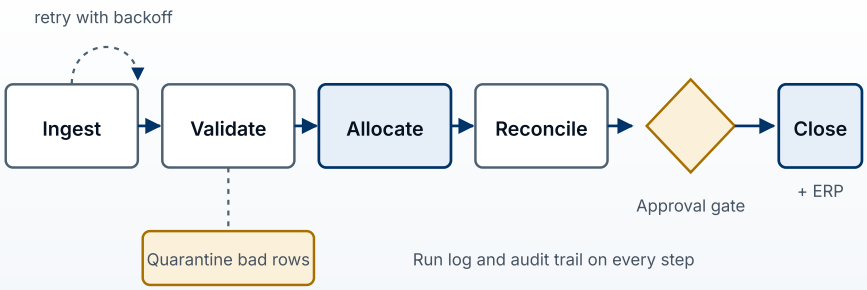
The platform reads from the systems already measuring your operation and publishes results to the systems that need them.

IN THE CHAIN RESERVOIR · FIELD · OFFSHORE · PIPELINE · TERMINAL · REFINERY · TANKER

What it does

- Workflow manager that chains data loads, SQL, calls to other systems, approvals and timers
- Resilient loader: failed rows are isolated, quarantined and exported with the reason and affected field
- Ingestion gateway for historians, LIMS, ERP and AIS, by push or scheduled pull
- Onboarding tools that profile legacy source files and map them to the platform data model
- Built-in accounting actions: allocation runs, back-allocation, custody tickets and period close
- Per-step run logs, retries and an audit trail
- WITSML import of well and downhole-component data
- Day locks and company boundaries keep closed days and separate companies apart

ILLUSTRATIVE SCHEMATIC



Illustrative daily pipeline: ingest, validate, allocate, reconcile, approve and close, with retries and a quarantine branch for bad rows.

Highlights

Zero-halt loading

One bad row no longer stops a load. Failures are isolated, quarantined and returned for correction.

Approval gates

Human sign-off sits inside the pipeline where a decision is needed, and the step is logged.

AI that drafts, never executes

Assistance is grounded in the workspace's own history. Nothing is scheduled, allocated or committed without an operator confirming it.

WHO USES IT

Production accountants
A daily close that runs the same way every day.

Data and integration teams
Loads that recover instead of halting.

Operations managers
Approvals and exceptions in one log.

STANDARDS AND METHODS

- Date-effective network versions
- Segregation of duties
- Audit trail on every published figure

RUNS ON THE SAME MODEL AS

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