



AVEVA



PRODUCT DATASHEET

ROMeo Material Balance

Automated Daily Material Balance

ROMeo Material Balance is an intelligent, easy-to-use, scalable solution for mass and volume reconciliation. It turns real-time process data, which is subject to random error, bias, and gross error, into consistent and reliable information.

Business Value

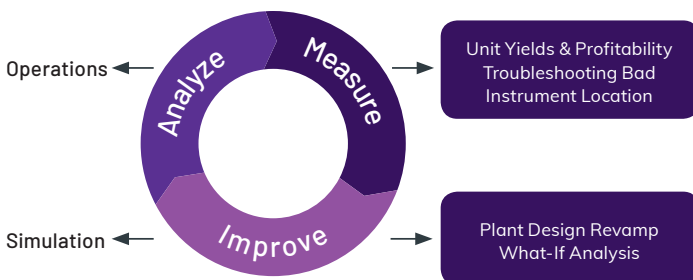
ROMEo Material Balance provides automated mass reconciliation configured within a flow sheet environment.

- Increase profitability through earlier detection of gross errors in meters; obtain more consistent data for planning, yield accounting
- Increase reliability, productivity by pinpointing problematic meters for maintenance and service
- Reduce engineering workload through automation of data retrieval, data reconciliation, and reporting functions
- Improve safety by pinpointing material loss locations

Scalable Solution for Mass and Volume Reconciliation

ROMEo Material Balance is an intelligent, easy-to-use, scalable solution for mass and volume reconciliation. It turns real-time process data, which is subject to random error, bias, and gross error, into consistent and reliable information.

Accurate material balance is the first step towards proactive operations decision support. You cannot monitor or improve performance of your assets if you do not have an accurate understanding of material flows in and out of your plant. ROMEo Material Balance interfaces directly with your IT plant infrastructure to automate the reconciliation runs without routine input. It incorporates advanced reconciliation methodologies within a flow sheeting environment to provide an automated daily material balance around each major unit, identify bad flow instrumentation, and aids in pinpointing material loss locations.



Reconcile raw flowmeter measurements with ROMEo Material Balance, taking into account the relative accuracy of each instrument. ROMEo Material Balance is a scalable solution and can provide a daily material and volume balance around an individual process unit or the entire plant. It provides a low maintenance, automated solution for mass and volume balance that can be scaled later to perform rigorous heat and material balance, predictive simulation, and optimisation.

Data Reconciliation Improves Plant Operations & Management

Trust your data

Quite simply, if users cannot trust data, it has no value. Reconciled and consistent data is essential to operating a plant effectively, and invaluable to management when analysing the performance of a plant or process unit.

Consistency in Operations Planning and Reporting

Operations planning relies on an accurate reporting of throughput. Random and gross errors in process measurements often leave management wondering what the true economics of a plant are. ROMEo Material Balance provides a set of reliable and consistent data which can be used with confidence. Knowing actual throughput is key to helping users meet their operations plan and prevent both material losses, as well as safety hazards.

Seamless Access to Plant Data

The External Data Interface (EDI) tool enables users of ROMEo Material Balance to directly drag-and-drop process and economic information from numerous sources, including automation equipment such as DCS systems, Laboratory Information Management systems, and data historians. The EDI tool has embedded, direct interfaces to InFusion™ Historian, Honeywell PHD and OSIsoft PI historians, and also supports standard data transfer protocols such as OPC, ODBC, and OLE-DB.

Applications

Use ROMeO Material Balance for any of the following applications:

- Producing daily material balances around major units in a process to identify bad meters
- Operations and turn-around decision support based on accurate, consistent data
- Accurate monitoring and managing of throughput as part of a loss prevention program
- Obtaining consistent data for LP updates and yield accounting
- Accident and shutdown avoidance by identifying gross errors in instrumentation before they trigger any alarms
- Efficiently setting maintenance schedules for flow instrumentation

Automated Flowmeter Monitoring And Reporting

All aspects of gathering process data; reconciliation; gross error detection; and the distribution of reports are automated without requiring user intervention. ROMeO Material Balance provides a patented Real Time System (RTS) to provide an integrated graphical scheduling environment that allows users to automate instrument monitoring and reporting. RTS enables the easy definition of complex event sequences for automated monitoring on daily, weekly, or pre-set intervals. RTS can even email reports or warn users via email if the reconciliation process fails.

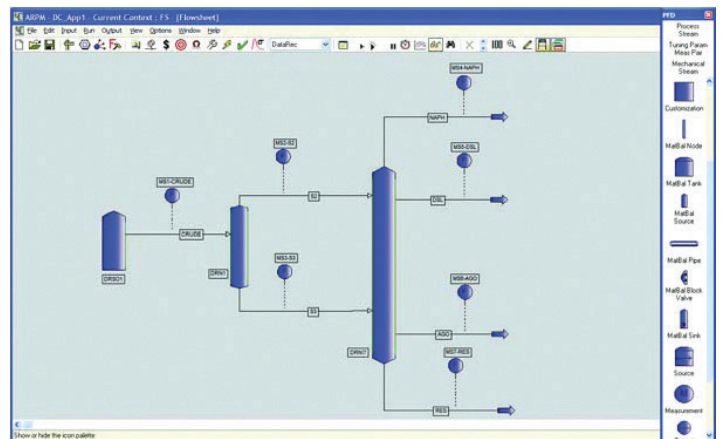
Flowmeter Data Accuracy and Validity

ROMeO Material Balance has several features aimed at improving data accuracy and validity. It initially screens all measurement values against customisable user-defined parameters. Data screening eliminates suspect measurement data before it enters the reconciliation process. ROMeO Material Balance also compensates flowmeter measurements based on temperature and pressure. Accurate flow compensation is important because the actual flow rate depends on density, which can change over a range of temperatures and pressures.

The accuracy of flowmeters depends on their inherent accuracy, as well as on the accuracy of the density used in compensation. Measurement screening and flow compensation are integral to providing the model with the best set of data for reconciliation.

Flowmeter Maintenance

Regular use of ROMeO Material Balance allows closed-loop monitoring of instrumentation, calling attention to any special needs for calibration and repair. ROMeO Material Balance's built-in Gross Error Detection (GED) and data screening functions can detect subtle drifts in sensor data before they become an operational problem. This leads to more efficient identification and instrumentation maintenance scheduling. Proactive calibration of sensors, before an alarm is triggered, helps plants avoid accidents and unscheduled shutdowns.



Technical Highlights

ROMeO Material Balance gives you seamless access to your process data with:

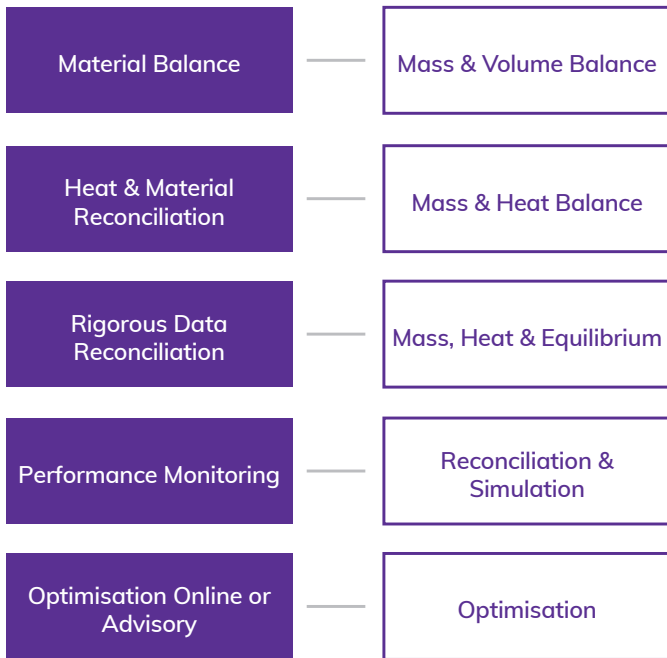
- Rigorous flow compensation for temperature and pressure
- Unique drag-and-drop environment for scheduling and automation of tasks
- Built in data validation, reconciliation, and gross error detection capabilities
- Microsoft® reports
- Integrated, graphical flowsheet platform, scalable to more rigorous monitoring and optimisation applications

Scalable Solution: From Material Balance to Online Optimisation

ROMEo Material Balance is the first step in ROMEo Process Optimisation’s scalable solution. It enables users to increase the fidelity of the model to match their application needs. Users can start with a simple material balance model of the plant, with a simplified representation of streams and units using ROMEo Material Balance. The same ROMEo Process Optimisation can then be extended and enhanced to achieve more rigorous heat and material balance, online performance monitoring, operations decision support modeling through closed loop optimisation. You do not have to be familiar with another platform as your needs to model the plant more rigorously grow.

ROMEo Process Optimisation

ROMEo Material Balance is part of ROMEo Process Optimisation, a set of modules that delivers the latest generation of rigorous model-based solutions to help users obtain peak performance from their operating units.



Design-Operate-Optimise a Safe and Profitable Plant

For over 40 years, AVEVA’s advanced applications have improved asset performance and utilization with integrated simulation, optimisation, training, and process control software and services. Spanning the entire lifecycle of modern processing facilities, customers range from novice users to executive experts within a variety of industries, including oil and gas exploration and production, petroleum refining, petrochemical and specialty chemical manufacturing, power generation, EPC, and more. Benefit from software products, solutions, and services that minimize capital demands, optimise facility performance, and maximize investment returns.

