Spotfire® for Manufacturing - Operational Excellence

Built for high-stakes production performance, uptime, and operational decision-making

Executive Summary

Manufacturing operations depend on tightly coordinated equipment, processes, materials, and schedules, so even small disruptions propagate quickly into throughput, cycle times, and finished goods schedules. But equipment sensors, control systems, production metrics, maintenance records, and planning systems are analyzed separately, which makes it hard to see how issues develop and where to intervene. Spotfire Industry Pro brings them into one visual industrial analytics environment, building on the systems your teams already rely on. Engineers detect tool and process drifts before thresholds are breached, see availability, performance, and utilization together to find the real driver of an OEE drop, and compare lines and shifts fairly at full scale. Spotfire AI works inside that same analysis, so engineers can ask in their own words and build faster while every step stays visible, editable, and open to challenge. Respond faster, coordinate better, and keep production stable.

Value

Catch drift early
Review sensor data, equipment history, and context as a whole.

Find the OEE driver
Availability, performance, and utilization in one view.

Compare fairly at scale
Lines and shifts, without moving the data first.

Ask, then verify
Describe the analysis in your own words. Keep every step visible, editable, and open to challenge.

What's new in Spotfire this Quarter

SPOTFIRE AI
Ask Spotfire, Skills, and MCP connections
Describe the analysis in plain language, capture methods as Skills, and connect to maintenance planning and ticketing systems.

SKILLS AND AGENTS
Equipment commonality and time-series cleansing
Skills and agents for equipment commonality analysis and time-series data cleansing, built for sensor and equipment history.

OEE
OEE visualization and statistics layer
Show availability, performance, quality, and OEE in one compact chart, and calculate the components right on the line view.

SCALE
Push compute on Snowflake and Databricks
Compare lines and shifts directly against the data platform, without moving large volumes of production data first.

Use Case Specific Functionality

Connectors
AVEVA PI, OPC UA, Spotfire Data Streams, SAP HANA, Oracle, Microsoft SQL Server, Vertica, Snowflake and Databricks push compute

Visualizations
OEE Chart, Reference Elements and Statistics Layers, Quality Control Charts, Graphical Table with Sparklines, Combination Chart (Pareto), Box and Violin Plots, Task and Resource Timeline, Parallel Coordinate Plot

Data Functions
Time Series Smoothing, Resampling and Dynamic Time Warping, Outlier Detection (Isolation Forest, Local Outlier Factor, Autoencoder), Statistical Testing (Mann-Whitney), Machine Learning and Clustering, Statistica Algorithms, Python and R Packages

Actions
Visualize Quality Control Charts, Analyze Time Series Correlations, Smooth Time Series, Normalize Time Series, Handle Missing Values in Time Series, Visualize Missing Data

Accelerators
Equipment Commonality templates for process and equipment engineers

Spotfire AI
Ask Spotfire, Insight Agents, Skills, MCP connections, equipment commonality and time-series cleansing, Agent Registry

Spotfire AI for Operational Excellence: Ask. Augment. Act.

Ask: investigate in your own words

- Describe what you need, from preparing data to building views with drill-down, and Ask Spotfire builds it inside your analysis.
- Ask about your data, have a visualization or page explained, or update many visuals at once.
- Everything Ask Spotfire creates is standard Spotfire content, so you can inspect, edit, and challenge it.

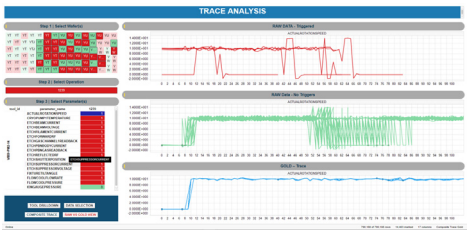
Augment: build faster, and trust the result

- Insight Agents surface trends, patterns, and anomalies in the data you mark, with recommended next steps.
- Skills capture a method once as a plain-language workflow anyone on the team can run, and include time-series data cleansing.
- Add new Insight Agents from the Agent Registry between releases, or build your own around company rules and experience.

Act: close the loop from insight to action

- MCP connections link Ask Spotfire, agents, and skills to systems that expose an MCP server, such as maintenance planning and ticketing.
- Retrieve context or trigger actions without leaving the analysis, with the expert deciding what happens.
- You choose the AI model and which groups can use it, and usage is logged and attributable.

Selected Workflows



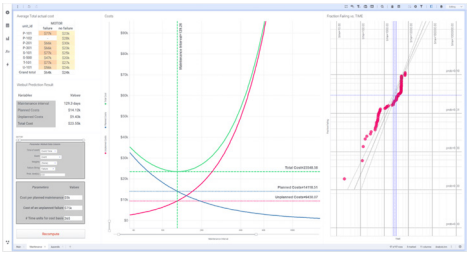
Predictive Maintenance

- Combine sensor data, equipment history, and operational context in a single analytical view
- Let Insight Agents surface anomalies and emerging failure patterns, with recommended next steps
- Detect drift before thresholds are breached with outlier detection functions
- Track trends against dynamic limits on time series with reference elements
- Identify patterns tied to failure modes with machine learning data functions
- Prioritize maintenance on actual equipment behavior, not the calendar



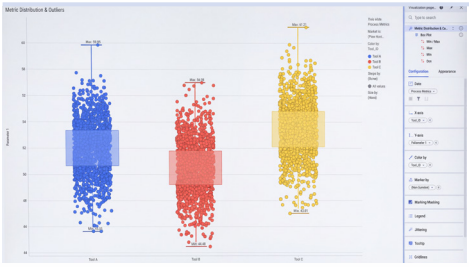
Overall Equipment Effectiveness

- Show availability, performance and utilization together in the OEE chart
- Calculate the OEE components directly on the line view with the statistics layer
- See which factor drove an OEE drop the moment it happens
- Trellis the OEE chart by line, tool, or shift to compare side by side
- Mark, filter, and drill into points to uncov er hidden trends and anomalies
- Identify bottlenecks and how each factor contributes to performance loss



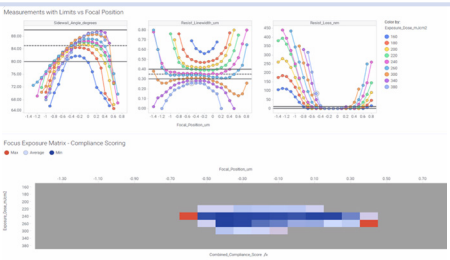
Operational Analytics

- Explore equipment, process, and production data together across lines, shifts, and facilities
- Run cross-shift and cross-line comparisons directly against Snowflake or Databricks with push compute
- Compare distributions fairly with box plots that show every data point, and violin plots
- Test whether differences are real with t-test, ANOVA, Kruskal-Wallis, and Mann-Whitney U functions
- Review dense trellis panels one lot or shift at a time with trellis paging
- Evaluate operational scenarios interactively before changing a plan



Downtime and Minor Stop Analysis

- Bring downtime events, minor stops, and quality issues into one shared context
- Rank the causes of lost availability with Pareto charts
- Overlay maintenance periods and shifts on the trend as reference boxes
- Mark a time range to isolate when a stop pattern began
- Find recurring patterns across tools with cross-correlation
- Scan every tool at a glance with sparklines in a graphical table



Maintenance Planning and Prioritization

- Connect equipment, maintenance, and MES data in one view
- Rank maintenance needs by actual equipment condition and production impact
- Analyze consumables usage alongside tool history
- Plan work on a shared timeline of tasks, dependencies, and resources
- Send follow-up actions to maintenance and ticketing systems through MCP
- Capture maintenance triage as reusable Skills



Fault Detection and Signal Monitoring

- Monitor real-time equipment and process signals as they arrive, from PI, OPC UA, and Spotfire Data Streams
- Identify anomalies as they emerge and act before issues escalate
- Watch control limits and violations on X and R/S quality control charts
- Detect trends and drift with smoothing and dynamic time warping
- Normalize signals across tools for a fair comparison
- Query AVEVA PI tags and Asset Framework hierarchies directly

Enterprise deployment

Discover Insights. Surface Risks Early. Drive Operations Forward.

Spotfire unites process, equipment, metrology, and test data across the entire manufacturing flow, turning specialist-system data silos into one governed platform, with native analytical depth, AI-augmented investigation, and the agility to solve high-tech manufacturing's most complex challenges faster. Deploy high-impact workflows across global manufacturing networks, in the cloud, on-premises, or hybrid, with lineage and governance behind every analysis. Spotfire AI is built in, with your choice of AI model, group-level control over who can use it, and logged, attributable usage.

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