



Spotfire & AWS: Immersive analytics, tailor-made for Oil and Gas



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Translate insights into action, every day.

What if your business users had access to advanced, custom-tailored analytics, embedded in the applications they use every day? Your organization's core business processes would be powered by real-time intelligence, leading to better decisions on every level.






In the oil and gas industry, advanced analytics is a must-have tool, helping companies identify new locations for drilling, optimize well pad placement, and streamline logistics and operations. Spotfire® software delivers AI-infused visual analytics and pre-built, customizable apps designed specifically for the O&G industry. Combine both streaming and historical data to gain real-time insights and better predict your needs, methods, and outcomes. Discover the O&G insights that matter most with a seamless analytics experience that brings together information from a variety of data sources.

Today's energy companies simply cannot improve their margins, grow their profits, or outperform their industry peers without leveraging data. Spotfire makes data actionable by bringing powerful analytics directly to the end user.



Discover the proven power of Spotfire for Oil & Gas

The oil and gas industry is changing rapidly. Regulatory pressure, changing customer expectations, and an intensive focus on efficiency compel energy companies to change the way they do business. Whether your focus is exploration and extraction, transportation and storage, or refining and delivery, Spotfire® analytics can help you work smarter in all that you do.

A large offshore oil rig is silhouetted against a dramatic sunset sky with vibrant orange and purple clouds. The rig's complex structure, including cranes and platforms, is visible against the bright horizon. The sea below is dark with some reflections of the sky's colors.

Energy companies use technology to make their employees safer, their fields more productive, and their capital assets operating at peak efficiency. The speed and magnitude of industry transitions, and the innovations that fuel them, impact every aspect of business today.

As the oil and gas industry adapts to a new set of complex and dynamic challenges, powerful Spotfire embedded analytics enable teams to innovate and outperform their competition.

What is Spotfire?

The Spotfire® platform, with end-to-end enterprise-class analytics, enables everyday business users to make discoveries through immersive visual exploration and advanced analytics applications. With predictive analytics, geolocation analytics, and streaming analytics in one decision and control environment, Spotfire delivers capabilities at scale for the analysis of data at rest and in motion.

Spotfire software accelerates actionable decisions, empowering teams to rapidly embed powerful analytics into their everyday business processes. The Spotfire platform brings visual analytics, streaming analytics, and data science capabilities together in a seamless experience, delivering immersive, smart, and real-time analytics. Now, using best-of-breed analytics capabilities, every organization can discover the richest insights for smarter data-driven decision-making from any kind of data.



Spotfire: Ideal for Oil & Gas

Spotfire analytics for Oil & Gas provides a range of ready-to-use analytics solutions designed by experts who know the industry inside and out. These use cases support companies from all segments of the O&G sector:

UPSTREAM:

Exploration and production of crude oil and natural gas

MIDSTREAM:

Transportation and storage of crude oil and natural gas

DOWNSTREAM:

Conversion of crude oil and natural gas into finished products

Spotfire for O&G is built with your industry's needs in mind, supporting a wide range of industry use cases including:

WELL PLACEMENT
OPTIMIZATION

WELL COMPLETION

ANOMALY DETECTION

RISK MANAGEMENT

DYNAMIC TIME WARPING AND
DRILLING OPTIMIZATION

SEISMIC DATA ANALYSIS USING SOM
(SELF-ORGANIZING MAPS)



Here are some of the ways that Spotfire helps companies like yours be more successful:

Process control optimization

Identify and respond to spikes and dips in energy consumption. Using a combination of IoT devices, historical data, and data science, energy companies can identify abnormal conditions in real time and raise alarms before events turn into critical issues.

Proactive intervention and response

Detect process issues immediately and predict undesirable states before they happen with real-time energy data. Create alerts within Spotfire dashboards so team members can respond proactively.

Real-time safety management

Capture sensor data in real time, visualizing it on dashboards and modeling future probabilities to enhance operational intelligence. Minimize your company's risk exposure and avoid potential accidents by capturing key data from equipment and field personnel.

Market engagement

Gain market insights by accessing 360-degree views of your customer's consumption patterns, behavior, and trends. Improve your customer interactions through personalized marketing, fueled by data science, to target audiences for the best possible engagement.

Supply chain resilience

Aggregate and analyze data across the entire value chain to optimize processes, performance, and profit. Use predictive analytics to forecast demand and optimize routes.



Resource utilization

Improve yield, reduce costs, and minimize downtime with anomaly detection across the enterprise. Whether it's an oil well, natural gas pump, or other equipment, you can use sensor data to track use and predict future maintenance.

Data at the edge

Spotfire analytics are pre-configured and pre-integrated with a range of industry-standard tools for oil & gas:

Spotfire contains pre-built connectors for OSIsoft PI historian. It can also connect to OPC-UA data sources using Spotfire IoT accelerator solutions, streaming data back to Spotfire virtually for real-time insights.

Real-time streaming analytics

Bring all your data together to analyze streaming and historical data. Connect to streaming data platforms like Kafka, Spotfire Data Streams, and others, for up-to-the-moment data analysis.

Geoanalytics and location intelligence

Spotfire advanced geoanalytics supports multi-layer presentation, feature and marker maps, shape files, and can be also extended using R and Python. All these features enable users to create complex geospatial interactive maps to display various oil and gas datasets.

Spotfire analytics stands apart from the crowd.

Unlike most general-purpose analytics platforms, Spotfire analytics excels at making data-driven insights available to operations experts on the front lines, giving them immediate access to the information they need, exactly when they need it.

Spotfire delivers real-world business value because it's designed to fulfill a mission: close the gap between data and action, empowering people to make sound decisions by putting real-time information at their fingertips.



Here are some factors that make Spotfire analytics special:

Extensibility: Python and R native support facilitate the process of accessing other OG systems/data sources and building custom functionalities within. The native version of Python and R in Spotfire is faster than the vanilla R and Python. IronPython provides another way of controlling Spotfire dashboard elements through a very detailed set of APIs.

Visualization Mods: With Spotfire, you can create very case-specific visualizations. For example, a Well Log Mod makes it possible for users to display depth-referenced data (wireline data, formation tops) in Spotfire. The well log is an open-source visualization mod that can be customized to meet any specific needs.

Secure access: Multiple options for connection security (OAuth, OpenID).

Customization: Spotfire gives you the ability to run data functions and ML workflows to transform and visualize your data according to your needs.

A robust [community](#) of oil and gas users: Our O&G industry-focused community provides an important source of information and a place of exchanging ideas, solutions, and suggestions.

Spotfire O&G Partners: Experts who know oil & gas are helping companies like yours get the most out of the Spotfire environment with specialty applications for energy producers.





Spotfire + AWS: Better together

Spotfire O&G users benefit from using the platform with AWS. Here are some reasons why:

Spotfire visualizations can leverage the OSDU Data Platform on AWS

The OSDU Platform data source in Spotfire enables end users to connect to OSDU instances in all main Cloud Service Providers (CSPs). With the native Python support, access to different data structures inside OSDU can be easily designed and executed. That, coupled with the custom mods that Spotfire has for oil and gas (i.e. Well Log Mod), will make the process of data ingestion and presentation possible on the same platform.

OSIPI Cloud implementation + Spotfire OSIPI custom data source

Spotfire can connect to OSIsoft PI Data Archive using a custom data function. This also applies when the PI Archive implementation is on the AWS cloud, giving you the flexibility to use tools from both AWS and Spotfire.

AWS for data on the edge

AWS offers (IoT) services and solutions to connect, as well as IoT-connected devices. Spotfire can analyze and present IoT data using different AWS services connectors. Using the Spotfire platform, you can easily couple these with other services to add data-driven alerts to your applications.

When US-based petroleum exploration and production company **Hunt Oil** found that working with stale data was holding it back, the company chose Spotfire and AWS to help gain real-time access to important insights. Today, Hunt's Smart IoT Drilling System uses Spotfire analytics and Spotfire data streams to provide its business users with a single, real-time view of what's happening on the ground.



The Spotfire platform's robust capabilities, complemented by the AWS platform, open the door to innovation and continuous improvement. Oil and gas companies throughout the world use Spotfire analytics to drive higher profitability and efficiency while keeping workers safe.

Put the power of Spotfire and AWS to work for your company.

Learn more by visiting www.spotfire.com.
View our [Completion Demo](#) or our [Predictive Maintenance Demo](#) to see Spotfire in action and imagine the possibilities for your business.





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Spotfire® goes beyond basic rearview dashboards to offer a single visual analytics platform for data exploration and real-time decisions. Backed by point-and-click, no-code data science, Spotfire allows even the non-developer to analyze both data-at-rest and data-in-motion, together, for faster time-to-insight and better business outcomes.

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