

STATISTICA®



Powerful Analytics Boosts High-Tech Threat Detection

FLIR Systems uses sophisticated manufacturing analytics to cut production downtimes, improve overall product quality and reduce per-unit costs by 50 percent.

Case Study



COMPANY PROFILE

Company
FLIR Systems Inc.

Industry
Technology

Country
United States



Employees
2,800

BUSINESS NEED

FLIR Systems needed a way to analyze massive amounts of data within its Explosive Threat Detection business to improve product quality, reduce downtime and accelerate R&D.

SOLUTION

With Statistica's advanced analytics platform, FLIR has automated analysis and can now detect problems that were not previously seen, reducing downtime by 30 percent and cutting per-unit costs by 50 percent.

BENEFITS

- Increased productivity through task automation
- Improved supply chain monitoring
- Reduced per-unit costs by 50 percent
- Saved approximately 30 percent in product revenue losses
- Improved R&D process

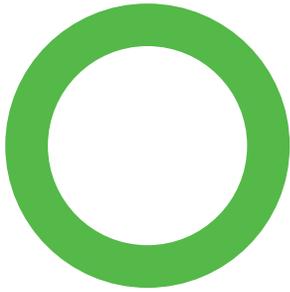
Like it or not, the world is becoming more volatile, and an increasing number of bad actors would like to disrupt the lives of others. If you've recently travelled through an airport security checkpoint, you saw the sophistication of security procedures and high-tech equipment being used to keep people safe. Have you ever wondered what some of those machines do? Well, for FLIR Systems, Inc., it's no mystery. The company designs, tests and manufactures infrared and other technologies to detect things that are imperceptible to the human eye — including chemical, biological, radiological, nuclear and explosive threats.

Detection accuracy and product quality is critical. FLIR must aggregate and analyze high volumes of streaming data from its internal manufacturing and testing processes as well as keep track of everything coming in from the supply chain. "One of the biggest challenges we've experienced isn't so much inside of our own pro-



"Statistica's ability to help us improve the quality of our product by decreasing the variability of everything we produce has been huge."

- Corwin Maxson,
Manufacturing Quality
Engineer, FLIR



cesses but our suppliers' processes," says Corwin Maxson, manufacturing quality engineer at FLIR. "We need to monitor the incoming parts that we receive, because with the nature of what we're doing any slight variation can have huge consequences."

Maxson works in the Explosive Threat Detection business unit at FLIR, making handheld detection systems designed to find trace levels of explosives pretty much anywhere. His team uses quality analysis to catch problems before they actually arise — both during the manufacturing process and even earlier during R&D.

"During the manufacturing process, we could have four or five different systems streaming data for 10 hours a day — mostly lists of numbers," Maxson says. "I've worked with the data in Excel, and initially it just looks like nonsense." It could take hours for Maxson and his teammates to analyze these numbers and translate them into a usable form.

By setting up automated manufacturing analytics workflows with Statistica, FLIR is now able to complete complicated processes in just a few minutes. "Prior to implementing Statistica, we once had an upset that we didn't discover for a long time, and it cost us a lot of money. With Statistica, we are able to catch things very early on in the process."



"The amount of improvements that we've been able to make have been immense. The overall cost of doing business has decreased significantly."

- Corwin Maxson, Manufacturing Quality Engineer, FLIR



INCREASED PRODUCTIVITY THROUGH TASK AUTOMATION

“Statistica’s ability to help us improve the quality of our product by decreasing the variability of everything we produce has been huge,” Maxson says. “It’s allowed us to discover things that we weren’t able to detect previously.”

The Explosive Threat Detection business unit’s Statistica installation references FLIR’s main database, which is connected to the network and receives data from various input sources. Predefined analytics run when data hits the database systems, and Maxson can retrieve the results from his desktop. Automated alerts and reports are sent out to various stakeholders as needed.

Before Statistica, Maxson could spend anywhere from 15 minutes to an hour per file trying to interpret the data. “With Statistica’s automated analysis, I now get the results I need in a matter of minutes, which obviously then gives me that much more time to give attention to other areas of my job.”

IMPROVED SUPPLY CHAIN MONITORING

FLIR works with a number of organizations that supply parts for the company’s highly calibrated threat detection technologies — top quality and consistency is critical. “We have very strict criteria with our suppliers, but if we start seeing deviations to the high or low end of the specifications, other unexpected issues can emerge,” Maxson says.

An upset in the supply chain could involve a part expiring or failing sooner than expected or it could create a false threat alarm causing unnecessary panic. The worst case scenario would be technologies failing to detect real threats, which obviously could lead to extreme repercussions. With Statistica’s sophisticated analytics, FLIR is now able to automatically monitor and detect deviations in suppliers’ components when they are received.

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Manufacturing Quality Engineer,
FLIR

REDUCED OVERALL COST OF DOING BUSINESS

“The amount of improvements that we’ve been able to make have been immense,” Maxson says. “The overall cost of doing business has decreased significantly.”

Statistica’s automated analytics has reduced the Explosive Threat Detection’s cost per unit by 50 percent. The FLIR team can now better understand key drivers of the production process and make adjustments to the core process. “Statistica’s biggest impact has been in preventing downtime on the production side,” Maxson says. A system shutdown means lost production time, and lost production time means lost revenue. “In the past, we’ve had issues with downtime that could take months to fix, and that’s a huge loss in terms of product revenue. Statistica is helping us prevent that.”

Now, if something looks odd in a report, Maxson and his colleagues are better equipped to ask questions before shutting down the company’s manufacturing process. Is the issue severe? Will it autocorrect? The next round of data points provides quick answers to these questions and more. If something is truly out of specification, the system is then shut down so they can dig further into the analytics to determine what happened.

“I’d say Statistica has reduced product revenue losses by about 30 percent,” Maxson says.

IMPROVED R&D PROCESS

The Explosive Threat Detection’s research department uses the Design of Experiments (DOE) feature in Statistica along with predictive analytics. Prior to using Statistica, some R&D experiments could take a week or more to complete. Now, the same experiments can be completed in just a few hours.

“The DOE feature in Statistica has been huge in assisting us with developing new products and furthering our capabilities,” Maxson says. “It’s one of my favorite features.”

Maxson says the R&D team uses predictive analytics to test a particular scenario and then predict the result of continuing further along that course. This technique helps the team identify when it is going down the wrong path on a research point, or when it might be headed toward something useful.



THE ROAD AHEAD

In general, FLIR's engineers and scientists have used Statistica the most, but Maxson and his team have been sending out occasional reports to management and have gotten a great response.

"It's already paid for itself several times over," Maxson says. "In fact, my boss came to me just the other day and asked if we could expand and use Statistica for some of the other processes and divisions at FLIR." Now that's success.

ABOUT STATISTICA

Statistica's advanced analytics, big data and IoT offerings provide you endless possibilities to innovate your enterprise. Whether it's uncovering the genetic basis of a disease, reducing hospital readmissions, mitigating financial risk, or ensuring procedural validation, Statistica enables organizations to transform in new and exciting ways. By embedding analytics everywhere and empowering a wider community of citizen data scientists, you'll accelerate innovation, improve customer experiences, and streamline your enterprise for the future. <http://statistica.io>

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