



NUTRIEN: BREAKING DOWN DATA SILOS

Founded in 2018 from the merger of two major Canadian agriculture supply businesses, Saskatoon-based Nutrien is the world's largest producer of potash and the second-largest producer of nitrogen fertilizer. The company produces more than 26 million metric tons of fertilizer a year, serving more than 500,000 growers worldwide. Many of the company's individual sites have been using PI System™ software for some time, but until recently, Nutrien had no enterprise-level system for handling data. By centralizing the flow of data through the company, Nutrien now has better coordination, anticipation, and insight into operations across the business.

LEVELING UP: FROM SITE TO ENTERPRISE

With PI System software installed at multiple production sites across the company, Nutrien was collecting a wealth of data — but they weren't making use of its full potential.

"If your company is anything like ours used to be, you run your business and make your business decisions based on historical information," said Bob McIntyre, Senior Process Control Engineer at Nutrien. "Yesterday's daily production report, last quarter's quarterly report, everything was always looking backward. Just like driving a car using nothing but the rearview mirror."

With the help of engineers from Mera, an OSIsoft System Integrator partner that provides IT and data strategy services to mining and manufacturing businesses, McIntyre and other

Nutrien engineers embarked on an ambitious project to bring all of the company's data under one umbrella.

"I wanted to bring real-time information into the process," McIntyre said. "I also wanted to collaborate with our IT and business systems to bring the right information to the right people at the right time."

McIntyre knew the project was succeeding when site managers at the company found that the enterprise-level system was giving them all the data they needed and began shutting off their individual site-specific PI System installations.

"I didn't get them to do this, they did it on their own," he said. "We have really good network connectivity from site to site, so this model worked exceptionally well for us."

CHALLENGE:

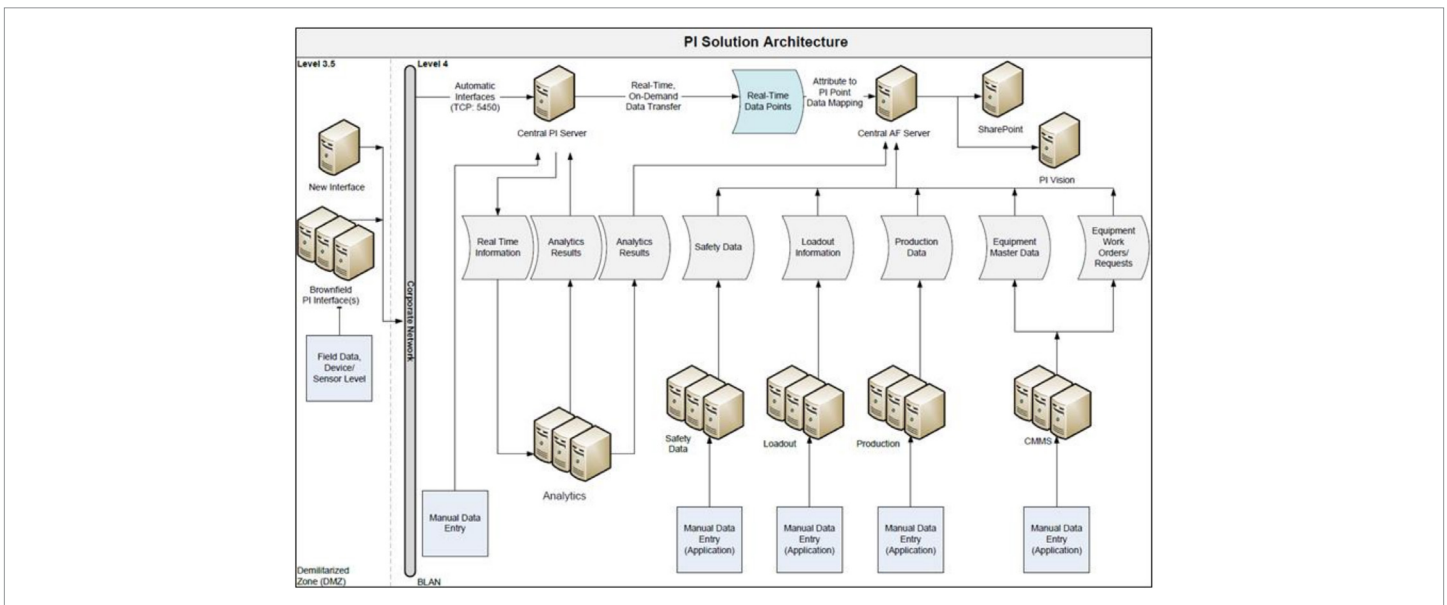
Nutrien had a wealth of operational data in site-specific PI System installations, but users could not easily find or leverage it.

SOLUTION:

Asset Framework (AF) gave Nutrien tools to model assets and data in a standardized way across the enterprise.

BENEFIT:

PI System is now a single, centralized source of trusted operational data for all Nutrien sites.



Nutrien's integrated, enterprise-wide PI System architecture.

BUILDING THE GOLDEN HIERARCHY

Asset Framework (AF), a part of the PI Server, proved critical to Nutrien's enterprise-level data centralization efforts.

With AF, Nutrien built a robust model of how all of a company's equipment, assets and data are related, and engineers were able to ensure that every new data point generated in the PI System is placed into a rich context.

Before implementing AF, engineers working with Nutrien's data "practically had to have a decoder ring" to understand where a given data point was coming from, said Heather Quale, President of Mera Group.

"The big game-changer we found with the PI System was when they came out with Asset Framework," Quale said. "We find that with the whole AF scenario, we now have structured data with context, as opposed to a series of tags."

According to McIntyre, the key to a successful AF rollout is structuring the model properly and consistently across the enterprise. For Nutrien, it took a few tries to get the data structure right.

"It's that hierarchy that you build, and you want to build it very consistently across all your sites," he said. "That's how you get

your standardization. You can build solution hierarchies that reference things, you have a personalized view of things, but you have one gold master hierarchy."

INTEGRATED DATA YIELDS BETTER INSIGHT

Using PI Vision and Event Frames, Nutrien engineers built customized tools that enable users throughout the company to easily visualize historical and predictive data and monitor and analyze specific process events.

Today, powered by the PI System, Nutrien's Potash Portal allows users to look at trends in safety and production data. Another custom tool is the company's Equipment Dashboard, which allows users to zero in on a particular piece of equipment and get a wealth of data on maintenance and production.

"At this point, the technology of large-scale data management is robust and sophisticated enough to achieve just about any corporate goal. The more challenging piece of the puzzle," Quale said, "is having the vision and coordination to identify that goal and make it happen."

For more information about Nutrien and the PI System, watch the full presentation [here](#).

PARTNER:
Mera

PI System Components:

PI Server™

- Asset Framework
- Data Archive
- Event Frames
- Notifications
- Asset Analytics

PI Vision™



...We find that with Asset Framework, we now have structured data with context, as opposed to a series of tags."

— Heather Quale,
President of Mera Group

McIntyre, Bob and Quale, Heather. "Leveraging the IT/OT Relationship to Identify Optimization Opportunities."

<<https://www.osisoft.com/Presentations/The-PI-System-%E2%80%93-Leveraging-the-IT/OT-Relationship-to-Identify-Optimization-Opportunities/>>