Case Study: Open-Source Platform Supports OEM Integration

Laundry OEM Gurtler Industries beats the competition with Opto 22's free Software Development Kits (SDKs)

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Laundry is a time-consuming household chore that most people don't love. Now, imagine doing laundry for an entire hotel facility, hospital, or uniform company. Have you ever thought about how all those towels and linens get laundered day in and day out? Well, Gurtler Industries™ is obsessed with that question. From hospitality to healthcare, they offer a comprehensive suite of products that includes detergents, fabric softeners, stain removers, and sanitizers, as well as equipment for storing and dispensing the chemicals.

With products designed to tackle a wide range of laundry challenges, their expertise extends to customized service programs and technical support. Their goal? Ensuring that their clients get optimal results in linen cleanliness, longevity, and overall laundry operation efficiency.

Partnering with Gurtler Industries, businesses across various sectors can expect tailored solutions that enhance their laundry processes, maintain high hygiene standards, and contribute to a more sustainable operation. Gurtler offers more than laundry chemicals—their solution integrates chemicals with dispensing equipment, along with the service and maintenance of that machinery, to ensure their customers a smooth laundry operation.

Gurtler Industries' chemical product lines

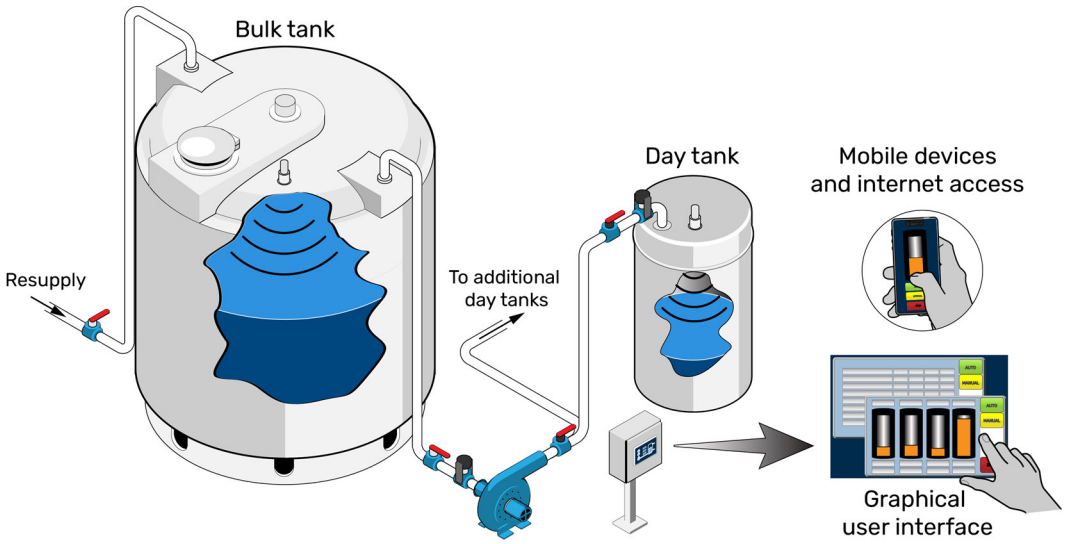
The control panel and dispensing pump from Gurtler Industries

FROM SUDS TO SOFTWARE: GURTLER INDUSTRIES' OPERATIONAL CHALLENGES

In the summer of 2009, Gurtler faced a myriad of challenges and competitive threats necessitating an upgrade to their standard chemical storage and dispensing technology. The competitive landscape was shifting. Competitors were adopting new technologies that improved the user experience and increased machine health and uptime.

Detergent Duels: Competition in Laundry Land

Gurtler's competitors began leveraging data collection and analysis alongside remote monitoring and alarming to avoid equipment downtime. They also began offering high-quality graphics that enhanced visualizations. Gurtler recognized that expanding the capabilities of their dispensing systems was a crucial next step to maintain their competitive position.



An illustration of the tank system developed by Gurtler Industries

Sudsy Symbiosis: Chemicals and Equipment

Delivering laundry chemicals is one thing, but providing the dispensing equipment presents an entirely different set of obstacles, particularly in machine maintenance. Keeping their customers' laundry equipment operating smoothly is critical to Gurtler's success, and a deeper understanding of their process data was the missing piece that could increase machine health and uptime.

Communication Conundrum

Senior Software Engineer Jeremy Scarbrough had begun working on a custom .NET application that would provide Gurtler and their customers with equipment operating data and an upgraded high-resolution graphics package. However, communication issues hampered integration between existing PLC systems and .NET, an open-source programming platform maintained by Microsoft®.

"I was really impressed with how quickly I was able to pick it up [Opto 22's SNAP PAC system]."

- Jeremy Scarbrough, Senior Software Engineer at Gurtler Industries

SETTING THE STAGE FOR ADVANCED SOLUTIONS

These shortcomings ignited Gurtler's pursuit of a more sophisticated solution, one capable of advanced data collection, analysis, and offering a user-friendly interface alongside the flexibility to adapt to any client's needs.

The Turning Point

"We had an upcoming biennial industry trade show, and we wanted to bring our new dispenser, but our existing control systems just wouldn't cut it," recalls Scarbrough. Frank Seritella of Kiser Controls™—a local automation solutions provider just outside Chicago and an existing supplier to Gurtler—understood the industrial controls market and the obstacles Gurtler was facing.

"Frank from Kiser lent us an Opto 22 SNAP PAC™ Learning Center, and within a week, I was up and running. I was really impressed with how quickly I was able to pick it up. We were able to display our new package at the Clean Show that year."

Opto 22's SNAP PAC and, eventually, *groov*® systems promised not just a hardware upgrade, but a leap forward in capability. After the communication troubles Scarbrough experienced with their legacy PLC, Opto 22's .NET OptoMMP Software Development Kit (SDK) was the feature that really sparked his interest.

A closer look at the Gurtler Vis-Tex Central System

Implementation Journey

Scarbrough spearheaded the implementation of Opto 22's hardware across Gurtler's dispensing equipment portfolio, including tank controllers and dry-to-liquid delivery systems. Armed with hardware that supported his open-source programming strategy, Scarbrough comments, "One of the nice things about Opto 22 is that we never have any issues or expenses related to software licensing."

.NET Integration

The straightforward integration between Gurtler's custom .NET application and the OptoMMP .NET SDK facilitated real-time data collection and analysis, enhancing operational efficiency and providing customers with invaluable insights into their laundry operations.

Maximizing I/O with High Density Modules

Opto 22's high-density SNAP modules allowed Gurtler to expand their I/O offering while maintaining a compact footprint for their control cabinet. With options for analog and digital signals, Gurtler was able to collect data from various sensors and control pumps and use actuators to deliver chemicals.

Remote Monitoring/Alerts and IIoT Advancements

The adoption of Opto 22's systems ushered in a new era of remote monitoring and IIoT capabilities for Gurtler. Opto 22's flow-chart programming software PAC Control™ provided native emailing functionality—alerting Gurtler's engineers to alarm conditions in real time. Cloud servers provide long term data collection and storage, while remote desktop software Splashtop® gives access to real-time monitoring, maintenance, and troubleshooting from anywhere.

New Capabilities in Self-Calibration

Opto 22's control systems helped Gurtler unlock another unforeseen advantage: automatic temperature compensation. Fluctuations in laundry room temperatures impact detergent viscosity, which in turn affects dispensing accuracy. With Scarbrough's newfound proficiency on

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PAC Control, he implemented a strategy to intelligently adjust based on real-time temperatures, ensuring precise chemical dosing in any environmental condition—and minimizing waste.

RINSE AND REFLECT: CONCLUDING INSIGHTS

Gurtler reinvented their dispensing solutions. Transitioning to an open-source friendly platform enabled them to develop custom software solutions unique to their customers and the commercial laundry industry.

With new and advanced features, they've wrung out operational inefficiencies and squeezed in significant benefits:

- **Enhanced reliability and efficiency:** Adapting to detergent changes, new dispensers minimize waste while ensuring smooth operations. Streamlined processes and data-driven insights prevent downtime. Remote alerts ensure rapid response to downtime situations while better data empowers laundry operators to make more informed decisions.
- **Market acclaim:** The Vis-Tex™ system—an automated tunnel dispensing system for high-volume textile cleaning—has been a hit among Gurtler's customers, solidifying their position as a market leader. Positive user feedback underscores the value of the enhancements.
- **Future proofing, the move to *groov*:** In recent years, Gurtler has embraced Opto 22's newer *groov* family of products. Along with the .NET support that Gurtler already uses, *groov* systems provide new capabilities in mobile visualization, cybersecurity, and communications. Scarbrough explains, "We now use *groov* EPIC systems to run our tank monitoring and filling systems, which transfer chemicals daily from bulk tanks to day tanks. As new projects roll out, we will continue to use *groov* systems."

An operator using the Vis-Tex system

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- Jeremy Scarbrough, Senior Software Engineer at Gurtler Industries

Looking ahead, Gurtler sees a clear path paved with Opto 22. Newly designed *groov* EPIC and RIO systems–with their additional data democratization and cybersecurity features–provide a blueprint for the future. The ease of use, flexibility, and robust support offered by Opto 22 make them an indispensable partner in Gurtler's future growth.

ABOUT GURTLER INDUSTRIES

As a third-generation family business, Gurtler Industries remains a leading provider of laundry chemical products, services, and support. Based in the United States Midwest, they serve the laundry industry—healthcare, hospitality, textile rentals, and more—across the United States, Canada, and Mexico. With their expertise, Gurtler Industries strives not only to meet but also to set high standards in their industry. Committed to quality and service, Gurtler Industries maintains a strong tradition of excellence today and for years to come.

For more information, visit https://www.gurtler.com.

ABOUT OPTO 22

Opto 22 was started in 1974 by a co-inventor of the solid-state relay (SSR), who discovered a way to make SSRs more reliable.

Opto 22 has consistently built products on open standards rather than on proprietary technologies. The company developed the red-white-yellow-black color-coding system for input/output (I/O) modules and the open Optomux® protocol, and pioneered Ethernet-based I/O.

Famous worldwide for its reliable industrial I/O, the company in 2018 introduced *groov* EPIC® (edge programmable industrial controller). EPIC has an open-source Linux® OS and provides connectivity to PLCs, software, and online services, plus data handling and visualization, in addition to real-time control.

groov RIO Ethernet-based edge I/O modules, introduced in 2020, include I/O and IIoT software in a compact industrial package that goes anywhere.

All Opto 22 products are manufactured and supported in the U.S.A. Most solid-state SSRs and I/O modules are guaranteed for life.

The company is especially trusted for its continuing policy of providing free product support, free online training, and free pre-sales engineering assistance.

For more information, visit opto22.com or contact **Opto 22 Pre-Sales Engineering**:

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