

Leading Life Sciences

The Value of Precis: Automation

Issue 1

precis
engineering
+ architecture

Precis automation solutions are guided by owner experience, platform flexibility, depth of in-house services, and a fresh perspective. Learn what makes our automation group different - and how it benefited one longtime client's project.

Introduction

Our clients have day jobs, and we respect that. We know those daily responsibilities don't typically involve planning or managing capital projects. When projects arise with automation as a key component, Precis can step into our clients' shoes – and more importantly, into their perspectives – as an extension of their staff.

Automation has the potential to optimize and streamline operations, by reducing human interaction and error, speeding efficiency, and improving quality. Whether that means doing more with less, bringing drugs to market sooner, or improving product quality, automation can be an asset. When implemented with precision, thoughtfulness, and an eye to the future, automation's benefits can be multiplied.

The Precis automation group delivers more than projects; we provide meaningful solutions from business inception through lifecycle operations. We help owners identify options that offer long-term value while maintaining alignment with current modes of operation. Our capabilities exceed those of a typical engineering firm or automation integrator:

We have experience in our clients' shoes. The majority of our automation staff has worked on the owner's side in production or plant



management. They understand what it means to operate the full lifecycle of an automation system.

We're platform agnostic. Our automation team has experience with different types of systems and can provide an informed analysis of what will work best. As a result, we're not locked into a single solution, product, or approach.

We have engineering expertise in-house. Our integrated automation and engineering teams collaborate on how to support physical system upgrades. We truly understand the limitations and potential available with automation.

We see things differently. The way we identify scope and how we implement automation comes from our deep experience and perspective operating automation systems in the very same roles our clients hold. We see projects differently than other engineering or automation firms. We look through our clients' eyes.

We provide comprehensive solutions. Our team can design solutions from concept through detailed design to facilitate construction. Our team can then program, integrate, start up, and commission automation systems. We work side-by-side with our customers, including managing the change control process if the system will be integrated into an existing qualified manufacturing operation.

Leading Life Sciences

The Value of Precis: Automation

The Precis automation group counsels clients to make the best decisions for their needs. Our engagement goes well beyond documentation and specifying automation systems or components, but also extends to the technical operations level. Precis handles conceptualization and design through advanced hardware and software programming, implementation, and change control. We know the right questions to ask to expedite the process, identifying both the solution and the boundaries to the problems that must be solved. Our automation team provides insights early because we begin with the end in mind.

In an ideal scenario, Precis joins a client's team early to strategize the business value of automation. But occasionally, we get involved at a different phase or when other engineering or automation partners have been engaged. In either case, our automation team brings its perspective and lifecycle analysis.

Case Study: Media Preparation

A longtime pharmaceutical client initiated a media suite renovation to replace hard-to-clean, fixed formulation tanks with new single-use mixers. By formulating and containing culture media in sterilized bags, the single-use technology improves productivity, safety, and portability while minimizing waste. To accommodate the technology shift, water for injection (WFI) distribution needed to change to new point-of-use stations within the renovated suite. This necessitated an automation upgrade from an obsolete system to the Emerson DeltaV™ automation platform, which existed elsewhere in the facility.



An improved automation process that greatly reduces waste, the need for cleaning and validation, and the time required to formulate media better supports operations and the bottom line. Ensuring the automation would maximize performance and get the desired return on investment is where the Precis automation team stepped in.

The client engaged Precis to handle sequence-of-operations design and implementation associated with these new WFI point-of-use stations. Hired in support of both an engineering vendor and the internal client team, Precis provided third-party automation perspective.

From the first meeting, Precis identified gaps in the previously defined scope and opportunities to help the client realize the full benefits of automation. Precis responsibilities expanded to hardware design, field installation and operations support, and alignment with the client's commissioning team.

Senior Automation Engineer Eric Reinheimer explained, "For this particular building and process, DeltaV could do more than just monitor temperature. A fully automated sequence could ensure reliability and consistency in operation, critical for pure water systems."

Leading Life Sciences

The Value of Precis: Automation

Before joining Precis in 2021, Reinheimer spent over two decades with Rohm & Haas and Dow Chemical, establishing automation expertise from the plant operations side. Like others on the Precis automation team, he has both formal training and hands-on experience using automation, including migrating from other platforms to DeltaV. Informed by his owner perspective, Reinheimer identified opportunities to provide adequate on-screen messaging, monitoring of key process variables, establishment of failure condition monitoring, and temperature control across several process ranges.

Precis' existing client relationship meant the automation team was already integrated with the client's clean utilities and familiar with its control systems. The automation team could easily access both the automation system and the change control system to provide a complete solution including all necessary change control. Under Reinheimer's leadership, Precis provided specifications and field wiring documentation for an EU grade C cleanroom-compliant automation panel, including the hardware, wiring, interior components, power requirements, and network connections to communicate with other systems.

"During construction, we were boots on the ground working with electricians doing the wiring, verifying hardware, installing and testing software, and interfacing with the commissioning agents for their testing, qualification, and verification of operability," Reinheimer described.

Precis worked in tandem with the client's technical operations staff to update procedures and provide training, from screen shots for the operations



manual to hands-on education. Precis shared best practices and documentation to help maximize use of the platform.

By leveraging extensive automation experience, objective third-party review, and both hardware and construction support, Precis helped the client get the most value out of its updated WFI distribution system.

Precis Perspective

Our people provide the perspective and proficiency to support our clients' most challenging assignments.

"Precis brings three advantages to every project," said Josh Capparella, PE, LEED AP BD+C, Precis Principal - Pennsylvania Operations. "Our agility to step into challenging assignments quickly and efficiently, our expertise in highly technical operations, and truly filling the role of a trusted advisor for our clients are our core values. Our value-add comes when we leverage our owner experience to see things from our clients' perspectives."

As the biotech and pharmaceutical industries trend toward increased use of automation, and more clients begin to use distributed control systems, Precis has brought major automation

Leading Life Sciences

The Value of Precis: Automation

system platform expertise in-house to complement firm's already broad mix of architecture, engineering, and planning services. The Precis Automation Department has grown to include over ten individuals staffed in both Precis locations, most with years of experience on the plant operations or production side of practice.

We're platform agnostic, so we specify what our clients' needs require. Our team has been involved from business case inception through implementation, giving us a comprehensive understanding of project requirements. Our automation engineers write robust sequences of operation, leading to fewer operational issues and better long-term automation performance.

We also handle complex programming and software integration with different equipment and technology, maximizing the potential value for each client.

"We've found a niche providing automation solutions," said Reinheimer. "We advocate for our clients' needs and what we know will be successful projects. We speak up and step up, because we're confident in our holistic automation knowledge and committed to maintaining our clients' trust. We focus on the details so our clients can focus on their day jobs."

Meet Our Automation Team



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Engineering



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