ISA OAGi
MIMOSA
OPC WBF

Getting STANDARDS under ONE roof

Standards organizations are cooperating under initiatives, such as OpenO&M, that allow for sharing information. Such efforts promise to ease application integration for manufacturers.

BY STEPHANIE NEIL

arge ERP installations are not unusual these days. So, executives at Suncor Energy Inc., a major producer of oil, gas, and renewable energy sources, took it all in stride when they recently adopted an SAP system in-house. Install and all will be well. Or so they thought.

The deployment was a success, but the company soon found out that simply running the enterprise application wasn't enough. "We wound up with a humongous, greatly capable system that wasn't connected to anything real," says Cliff Pedersen, Suncor's manager of product production processes.

According to Pedersen, the company's SAP system was fed by numbers from spreadsheets — which was great for figuring out financials, but not so wonderful when it came to measuring the actual production that generates the business' bottom line.

"Reality exists in the refinery, or oil sands production facility, and in the natural gas facilities. That's where the wealth is generated," Pedersen says. And to measure that, he adds, you need to make connections with the process automation system.

Making those connections is not easy. To date, most application integration has relied on proprietary point interfaces or middleware that multiplies over time, becoming expensive to build and maintain. Instead, Pedersen needed a standard way to interface between Suncor's Emerson Process Management DeltaV process control system and the new SAP ERP application. Otherwise, "you wind up with a bowl of spaghetti," Pedersen says, referring to the multiple strings of programming code resulting from custom interfaces.

What Pedersen and many of his peers want is one language that can be spoken between the plant floor and enterprise applications.

The ISA automation standard-setting organization has been working to solve that problem, as has the Open Applications Group Inc. (OAGi). Meanwhile, on the plant floor, multiple groups, including MIMOSA, the World Batch Forum (WBF), and the OPC Foundation, have been hammering out their own standards for data exchange around maintenance and operations assets; process operations; and data, alarm, and event management, respectively.

While these groups have the best intentions — that is, to create a standard way to exchange data

across the plant floor and into the enterprise — they have also created a competitive situation that defeats their purpose.

"We don't want to have competing standards" in the industrial automation space, says Tom Burke, president and executive director of the OPC Foundation. "It confuses companies, like SAP, [leaving them wondering] what they are supposed to do."

For that reason, the OPC Foundation, together with ISA and MIMOSA, banded together in 2003 to create the OpenO&M Initiative, a collaborative effort aimed at harmonizing information standards for the exchange of operations and maintenance data. This year, the work they've done in building a Web services framework and creating a cross-reference registry of their related standards is finally being put to the test at major companies, such as BP, Nova Chemicals, and Suncor.

The ultimate goal is to get everything to plug and play. "OPC wants to be like a USB: Just plug it in and it works," Burke says.

From the ISA's perspective, it is difficult to promise the Holy Grail of perfect plug-and-play, at least anytime soon, says Don Clark, director of industry marketing for Invensys and vice chairperson of the ISA-95 committee. "Not only would it take us a zillion years to produce such a standard, but it would stifle the very innovation we want to foster," he says.

Comprising four parts — with more to come — ISA-95 defines data exchanges between business and manufacturing systems, as well as the data flows and messaging structures for creating common interfaces. It is a strong step in the right direction to help manufacturers find the common ground they desire and require to keep costs down and reliability up, industry observers agree.

"As it stands now, the S-95 [ISA-95] standard greatly facilitates design, implementation, use, and maintenance ... over standard practices that preceded it," Clark says. "Additionally, because of the common lingua franca involved in all S-95 offerings, integration between them is greatly facilitated. It is not plug-and-play, but the effort that will be needed to integrate such a hypothetical situation is substantially less than with no standard at all."

That's why Suncor's Pedersen is putting pressure on all of his vendors to comply with the standards under the OpenO&M umbrella. "We have important things to do, like run a business and make it profitable. We don't want to mess with the systems anymore," Pedersen says.

MAKE IT RIGHT

While manufacturing executives like Pedersen demand standards compliance, it's important to remember that it's one thing for a vendor to claim compliance, and it's another thing to actually do it right.

For example, the OPC Foundation has about 500 member companies that build products to the existing OPC specification. This year, roughly 30 companies will roll out products based on the latest version, called OPC UA, which provides the Web services infrastructure for collaborating with other standards within the OpenO&M initiative. However, there is no way to test these products to find out whether they correctly adhere to the specification.

"A lot of companies build OPC products, but products can give OPC a bad name if they do a bad job" of complying with the specification, Burke says.

ISA faces a similar plight with its many standards. To address the issue, the organization recently formed a non-profit company called

the Automation Standards Compliance Institute. The organization is establishing consortia for its industrial wireless standard (ISA-100), industrial security standard (ISA-99), and plant-to-enterprise standard (ISA-95). Each group will test products for compliance.

For example, the group working on enterprise integration, the Industrial Interoperability Compliance Institute (IICI), will define certification and compliance at all levels of the written standard. IICI is just now getting started, having solicited suppliers and end users of manufacturing operations management systems to participate as members and define the interoperability compliance guidelines. The group is scheduled to officially launch next month, with outlines of technical direction, compliance profiles, and certification programs and policies to be unveiled throughout the year.

The IICI, which will work with OpenO&M to certify a variety of standards, is a significant step forward in getting the standards to work effectively.

"We've spent the last 15 years evolving standards to the point where they can be applied. Now people are applying them, but there's a lot of misrepresentation of what compliance is," says Charlie Gifford, an independent MES consultant who has been asked by the ISA to help spearhead the IICI effort. "That drove the end-user base to say they need a compliancy organization. So there is a natural evolution here that is occurring."

It will very likely take two years to get the organization into full swing, Gifford says, but the effort will ultimately solve many of the problems that companies like Suncor face in creating a reliable, integrated architecture.

"The big prize is to keep the plant running, and running efficiently," says Pedersen. ■