INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

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Your key to the latest industrial automation and process control information

Emerson European User Exchange has many positives, and some hiccups!

Emerson Holds a Reprise of Emerson Exchange Americas...

The Emerson Global User's Exchange rolled into Stuttgart in Europe early this month, and was intended to present to the assembled European user audience much the same messages as were shown to the US audience early last October. Absolutely nothing wrong with that, except for the Editors assembled for the first day, who had probably reported the lead stories before: Pervasive Sensing, as reported in the October ***INSIDER***, pages 1-3, and the iOps center concept, as reported by Walt Boyes after the opening of the demo center in Austin in January (see the ***INSIDER*** of February, pages 2/3). The advantage for the European audience was that both topics benefited from the work done since these launches, so included reports of subsequent application successes – and these were also European based. So full marks for the European organizing committee, comprising both users and Emerson staff. These stories will be reported later, in the newsletter or on the blog website www.iainsider.com.

Emerson's Stuttgart Adventure

Stuttgart venue

The venue was chosen as the Exhibition center at Stuttgart airport, an impressive location that was well able to handle the 1200 visitor attendees, 22% more than the first such Emerson Process Management European event two years ago. Maybe the date choice made some people a little nervous, being April 1-3, therefore scheduling the opening presentations for the morning of All Fool's day There were no noticeable hoax stories or practical jokes during the morning – and the press conference was after the critical time, so it should have gone smoothly. However – as this is written, maybe Emerson will be planning an extension to the event, since Germany's Lufthansa pilots announced a strike for the period 1-4 April, so some delegates will not be leaving on April 3rd.!

F1 team spirit?

The conference was opened by Francisco Diaz-Andreu, director of engineering procurement at Repsol in Spain, who introduced Roel van Doren, president of Emerson Process Management in Europe, for an overall business update. Van Doren sketched the total Emerson Process sales, pointing to the $1Bn growth each year for the last three years, and commenting that his EMEA region had followed the same trend. The message to customers, and the plant operators, was that Emerson has the objective to maximize the long term value of plant investments, by becoming a trusted advisor, and offering the technology, the products and lifecycle services that enable the customer to drive the plant. In this way he related Emerson to the F1 motor racing support team, gathering

Inside this issue:

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Health Watch

On page 21, the INSIDER debuts the INSIDER Automation Industry Health Watch(tm). The Health Watch is a monthly measure of the health of the automation industry, derived from an analysis of over 79 global automation companies.

The Health Watch(tm) is produced by Spitzer and Boyes LLC's quantitative research department, led by Mary Samuelson. This feature will be updated every month, and is available to INSIDER subscribers only.

...and a whole lot more!!

Cover Story: Emerson Exchange Stuttgart

data from sensors, to enable the driver to win the race.

Wireless is an enabler
The sensors that now exist everywhere in the modern car (presumably a newer model than mine) and F1

Formula 1 pervaded Zornio's technical presentations

motor racing, pervaded the technical presentation given by Peter Zornio, chief strategic officer at Emerson, both to the main conference in the morning and to the press conference in the afternoon, as examples of sensors providing data for business critical decisions. The examples quoted by Bob Karschnia, vp wireless, then amply illustrated how that technology has catapulted Emerson into a whole new industrial market applying their product to problem solving techniques outside their traditional liquid handling area – but a long way from F1! Whether this is gas detection, fuel tank leak detection, monitoring thrust bearing or seal failures, or steam trap leakage detection. The latter never seems to fail to justify the investment in under a year, when horrendous leaking steam traps are located!

Strategic approach
Zornio maybe lost the audience when he made a throwaway comment that "Energy efficiency is of interest in Europe"! The follow-on was that industry here, in Europe, had therefore to monitor their costs. It was certainly my impression that a lot of re-shoring of US manufacture was down to the more astute of the US industry producers noting that US energy costs had become viable, monitoring energy in just the same mode! He didn't have an easy time with the questioning at the press conference either, because he would not tell us strategically in what area Emerson would be looking to purchase sensor companies next – I suppose that was a long shot. From the presentations, the odds are on hand valve monitoring technology: but they should maybe look at their own Topworx systems as used on emergency plant showers etc, who already offer such wireless systems. Come to think of it, Honeywell and Endress + Hauser have also such technology on offer, so maybe it could be a market ready to be driven only by user education or legislation requirements? Roel van Doren said that 90% of plant incidents arose from non-monitored manual or hand-operated valves….just another of those statistics maybe?

The strategy explained by Peter Zornio, describing the iOps center, and sensors that help enable better business decisions can trace its origins back around 20 years to 1994.

An F1 future
Peter Zornio's comments at the press conference had to end with a query about his picture of an F1 racing car illustrating his Emerson team behind the process plant operator. It was a good picture, not the one shown here, but the same car. Would Emerson be sponsoring an F1 racing team soon, with the logo on the bodywork? No, apparently that is outside his acquisitions budget: he has even had to think carefully about how many people this budget can entertain at the US F1 race in Austin this year, because of the base ticket cost. So had he noticed the GE logo on the photo of the F1 car used in his presentation? Apparently not, until it was shown on the big screen…

The follow-up for the conference user delegates that evening was again related to racing cars, with a visit to the Porsche Museum in Stuttgart – but the press were sent back home!

iOps Has a Long History

The strategy explained by Peter Zornio, describing the iOps center, and sensors that help enable better business decisions can trace its origins back around 20 years to 1994, when John Berra at Rosemount brought Fisher into the Emerson group. At the time the presentation describing this futuristic concept was called "Purple Reign;" the phrase normally linked to the Prince album and tour ten years earlier called Purple Rain. In the presentation, it is suggested that John Berra, Duncan Schleiss and Jim Nyquist were involved in sketching the concepts of the DeltaV control systems, accessed by wireless/phone enabled hand-held devices linking the business management with their plant operations and market forecasts. The faster and more effective data communications led to more efficient business decisions. It would be interesting to hear if anyone still has any elements of that original Fisher-Rosemount concept presentation, because Google is a bit bogged down in providing data on Prince tribute bands!

Emerson Updates AMS

Emerson Process Management's AMS Suite: Intelligent Device Manager is now capable of commissioning FOUNDATION™ fieldbus devices faster with the

EMERSON UPDATES ASSET MANAGEMENT SOFTWARE TO REDUCE FIELDBUS DEVICE COMMISSIONING TIME BY UP TO 80%

new version 12.5 software. Users can bring devices on-line with the features, options and alerts they select – in a fraction of the time it would normally take. With AMS Suite's new functionality, Emerson anticipates reduced commissioning time on smart devices by almost 80 per cent compared to existing work practices. In addition to faster start-up, users can now make on-line changes to many devices simultaneously.

Shell Helps Development

Emerson worked with Shell to develop a more efficient configuration solution for Shell's Prelude floating natural gas (FLNG) production vessel project. With over 5,000 FOUNDATION fieldbus devices at the Prelude site, many with more than 100 configurable parameters, Shell was concerned about the time it would take to complete commissioning tasks. Configuring the devices one at a time is error-prone and laborious – configuring a single device may take up to 60 minutes. Then configuration for each individual device must be verified.

"We expect to reduce commissioning time and loop testing for FOUNDATION fieldbus devices by 10,000 to 20,000 man-hours for mid-size to large projects with this new functionality," said Rong Gul, Shell's corporate subject matter expert on smart instrumentation and instrument asset management.

Duncan Schleiss is back

The AMS Device Manager User Configurations tool enables users to standardise asset configuration and eliminate configuration errors. Users have the option to apply configuration templates to device placeholders or live devices. The devices can be commissioned one-by-one as field engineers are wiring the segments or automatically in groups. Built-in reporting allows users to quickly validate that parameters have been applied correctly.

"We expect to reduce commissioning time and loop testing for FOUNDATION fieldbus devices by 10,000 to 20,000 man-hours for mid-size to large projects with this new functionality."

"By working closely with Shell, we developed this innovative technology that helps reduce the time it takes to accurately configure smart field devices," said Duncan Schleiss, vice president of business development for Emerson's Process Systems and Solutions business. "This provides our users with a win in their quest to improve engineering efficiency by simplifying their processes."

Schleiss, who was badly injured in a bicycling accident some time back, was present in Stuttgart and before that at the iOps Center Grand Opening. The INSIDER wants to wish him well and a continued recovery. It is nice to have him back.

—Nick Denbow and Walt Boyes

ISA and CSIA announce new web sites

ISA, the International Society for Automation, has gone live with the first major revision to its outdated www.isa.org website in years. First comments have been extremely positive, and as ISA rolls out new features it would appear that the new website will become a far better resource for automation professionals than the old one was.

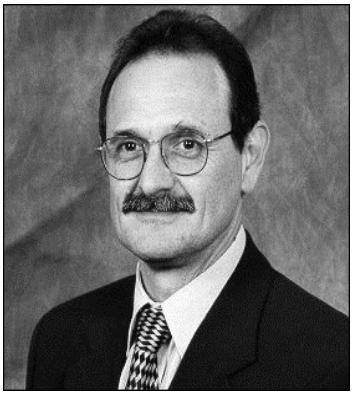
The new ISA website is organized by membership, training and certifications, standards and publications, conferences and events, news and press releases, resources (based on a set of member personas), technical topics, professional development, and a storefront. It is already significantly easier to find things on this site than on the old one .

Coincident with the CSIA annual conference (this year in San Diego from April 23 to the 27th), the Control System Integrators Association will debut their own new website, the Industrial Automation Exchange. According to CSIA, the Exchange is "Much more than an online buyers guide. The new Industrial Automation Exchange - the Exchange, for short - uses the collective resources of the association to generate more traffic and interest than any single company could create alone. CSIA really is the 'go-to resource for control system integration.'"
According to CSIA, now both system integrator and partner members will have profiles. Visitors will easily find the right integrator, the right product and the right answer - all in one convenient place. Never-before-available features include the ability to add video, slideshares, screen captures of integrator website, and hyperlinks to integrator websites and social media. .
ISA and CSIA have now produced two new and very useful websites for automation professionals and end users alike.
—Walt Boyes

SMAR, With Nobody at the Helm, Continues Day to Day Operations

Operating in Brazil is not as easy as it would have appeared.

Way back in 2003, SMAR (Sertãozinho, SP, Brazil) was accused of multiple counts of tax fraud that allegedly resulted in the evasion of approximately R$250 million (US$ 105 million) in taxes over the previous 20 years. SMAR's revenues at the time were reported to be approximately R$165 million (US$ 70 million) per year. Warrants for the "preventative arrest" of most of the SMAR directors were issued in December 2003 and the company became temporarily rudderless as most of the directors went into hiding while legal actions proceeded to permit them to await resolution of the issues in freedom. Some directors were arrested but were later released in February 2004 when they their freedom was granted. At least one director (Carlos Roberto Liboni) was required to divest ownership in SMAR and leave the company, which he did in 2005.



Carlos Roberto Liboni– former SMAR director

SMAR's Tarnished Image

The distraction caused by SMAR's tax problems tarnished SMAR's image and retarded growth. As an example, SMAR was arguably the largest exhibitor and most enthusiastic sponsor of the ISA Brazil Show until the early 2000s only to become a "no show" in recent years. SMAR also became noticeably less of a competitive threat to its competitors in Brazil as SMAR fell out of favor due to concerns about its survival and the long-term maintainability of its equipment.

Warrants for the "preventative arrest" of SMAR directors were again issued in December 2013 based upon activities dating back to 1984 to include alleged fraud, tax evasion, money laundering, and corruption --- implying that the tax 2003 problems had not yet been resolved. SMAR was also reportedly accused of fraud for allegedly illegally importing and exporting products using shell companies inside and outside of Brazil. The Brazilian police (with help from other governmental agencies) estimate that SMAR evaded approximately R$ 1.6 billion (US$ 680 million) in taxes since 1984.

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Brazilian police consider the latest accusations to be the largest tax fraud case in the automation field (worldwide). The principal suspect (Edmundo Rocha Gorini, president and CEO) was recently captured on 17 March 2014 when he returned to his apartment in Ribeirão Preto. Seven other directors are currently being pursued by the Brazilian police.

SMAR's lawyer submitted legal petitions to permit the directors to await resolution of the issues in freedom. She could not comment to the INSIDER on the actual accusations against SMAR (even to profess SMAR's innocence) because legal aspects of the matter are currently under a gag order.

A Little History

SMAR developed and manufactured a substantial line of pressure, differential pressure, temperature, level, and other field measurement instruments, programmable

UK wind turbine manufacturing by Siemens

In an investment in Hull and Humberside, on the northeast coast of the UK, t Siemens Energy and Associated British Ports will invest a total of GBP310m ($500m) in two manufacturing sites, which will create up to 1000 jobs. The first plant will make wind turbine blades and involves GBP80m of the GBP160m ($265m) Siemens is investing. Each blade will be 75 metres long: when rotating they will cover an area the size of 2.5 football pitches. The Green Port Hull facility will also involve an investment of GBP150m ($250m) by Associated British Ports.

The Siemens view

Dr Michael Suess of Siemens, said, "Our decision to construct a production facility for offshore wind turbines in England is part of our global strategy. The offshore wind market in Great Britain has high growth rates, with an even greater potential for the future. By 2020, a capacity of 14GW is to be installed at sea alone, to combine the country's environmental objectives with secure power supply. Projects for just over 40GW are currently in the long-term planning."

Siemens employs about 13,700 workers in the UK, with 4000 of these in the energy sector.

The outlook

UK Energy Secretary Ed Davey told the BBC (after a winter of storms), "Offshore wind is producing 80-85% of the time. We are the leading country in the world for offshore (wind) investment."

—Nick Denbow

SMAR, With Nobody at the Helm, Continues Day to Day Operations

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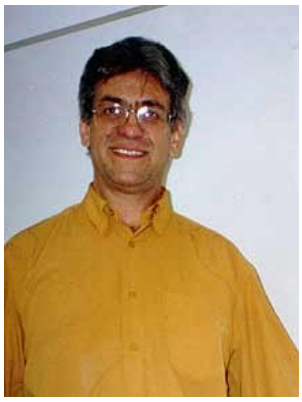
logic controllers, valve positioners, and PC-based supervisory control and data acquisition systems for the process industries, and took them to the world market, becoming the first Brazilian automation company to market outside of Brazil.

In 1989, SMAR formed SMAR Research in New York (USA) to manufacture HART chips for its own use and for other instrumentation manufacturers. The INSIDER understands that SMAR Research was originally formed in the USA to be independent of SMAR and provide a secure source of HART components for its customers (other instrument manufacturers). In late 2013, SMAR Research was purchased by Springfield Research Corporation who is now responsible for the production and development of current and future HART products.

SMAR claims to have developed the first fieldbus chip and provided instrumentation for the first commercial fieldbus plant in 1994 and the first interoperable fieldbus production installation three years later. SMAR had a number of accomplishments in the early 2000's to include the first registered HSE device, first Foundation Fieldbus flow computer, first HART to Foundation Fieldbus interface, and first multiprotocol fieldbus control system.

SMAR took a decidedly different approach to communication protocols as compared to other suppliers. While the major suppliers offered either Foundation Fieldbus or PROFIBUS protocol, SMAR made a commitment to offer its customers both protocols to increase customer flexibility. SMAR believed that its customers benefited from not being constrained to one fieldbus protocol because SMAR offered both protocols and did not have to take sides in the fieldbus wars.

By 2003, SMAR had grown to about 1200 employees with 8 strategically -located international subsidiaries and distribution networks in over 95 countries. Notably, SMAR grew a Research and Development department by perennially attracting bright graduates from Brazil's premier technical universities.



Gorini, in 2001

In late 2013, SMAR Research was purchased by Springfield Research Corporation who is now responsible for the production and development of current and future HART products.

The SMAR workforce has generally contracted since 2003 due to gradual attrition to its competitors. In addition, many former SMAR employees left SMAR to work for STD, a new company that was formed to perform detailed design and engineering work preferentially using SMAR equipment. STD's primary purpose was to provide equipment to Petrobras, the largest company in Brazil and also Brazil's largest automation customer. Brazilian law prohibits Petrobras (which is partially owned by the Brazilian government) to do business with companies whose taxes are not current. Therefore, SMAR's tax issues effectively barred SMAR from selling its products directly to its largest potential customer in its home market and a customer that actively solicits and gives preferential treatment to indigenous Brazilian manufacturers. Using STD to provide equipment for Petrobras was ultimately not successful and

It's an App for HART!

The new 'teknikol COMMANDER' app offers HART users a professional HART configuration tool in their pocket. Traditionally, similar HART tools have only been available on large PCs or bulky hardware. According to the development team at teknikol, customers now have the option to communicate with their HART field devices using any Bluetooth enabled Android device. This makes using HART devices cheaper and more convenient than ever before. Customers simply attach a Bluetooth modem to a HART network, open the app, and connect. COMMANDER allows the user to quickly search for devices, then read dynamic device variables (PV, SV, TV, QV), loop current, ranges, damping, message, tag, and more. Users simply tap any editable field to change its value. The app even provides full NAMUR device diagnostic capabilities.

teknikol COMMANDER's most powerful feature is its engineering console. This allows the user to read or write any command, including device-specific commands and associated data. The engineering console enables full configuration of any HART field device. The teknikol development team says they have put extensive development and testing into COMMANDER, including an open beta test before this public release. The team has also put together a limited free version, which is available on the Google Play store.

For complete technical specification visit http://teknikol.com.

SMAR, With Nobody at the Helm, Continues Day to Day Operations

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STD has since closed its doors.

In mid-2013, a major restructuring reduced employment from approximately 700 to 550 employees in an attempt to address financial issues and make the company more sustainable.

It should be noted that SMAR achieved considerable success in spite of its local business environment in Brazil. The company attitude was perhaps personified by, "do or do without." For example, SMAR recognized the need to interconnect its various offices and manufacturing locations in Sertãozinho, but local Internet service was not available and would not be available for many years (a decade?). As a result, SMAR did what was needed to communicate --- SMAR ran wires in the streets between its offices and manufacturing locations to interconnect them. Positive aspects of this attitude also made their way into many of SMAR products.

What Went Wrong?

A person close to the events of 2003 noted that the investigation into SMAR activities was initiated coincidentally with SMAR director, co-founder, and vice president of international sales Carlos Roberto Liboni's campaign to advance from vice president to president of FIESP (Federation of Industry in the State of São Paulo). This indirectly implies (but certainly does not prove) that there was a relationship between these events.

Brazil is known for its complicated tax system that virtually necessitates specialized tax accountants to keep up with the changing tax code. In this environment, a competent accountant could easily miss something somewhere that could cause a problem later.

The business climate prior to 1994 was one of economic and political turbulence with large amounts of inflation that at times approached 70 percent per month. As a result, the currency changed five times between 1984 and 1994 to include the Cruzeiro (Novo), Cruzado, Cruzado Novo, Cruzeiro, and Cruzeiro Real before settling on the current Brazilian Real (BRL) in 1994. Relatively complicated compounding monetary corrections could cause a small amount accrued prior to 1994 to balloon into a much larger amount afterwards.

The average credit card interest rate in the USA is currently approximately 15 percent per year. In Brazil, it is approximately 15 percent per month!

In addition, Brazilian interest rates can be exorbitant. As a point of reference, the average credit card interest rate in the USA is currently approximately 15 percent per year. In Brazil, it is approximately 15 percent per month!

Therefore, an old (but manageable at the time) tax liability plus reputedly high tax penalties to which large monetary corrections and exorbitant interest rates are applied can result in an extremely large tax liability. The implication is that investigation of any Brazilian company of significant size at the time would result in some findings that could cause manageable tax discrepancies to grow exponentially into a large tax liability. So it appears may have been the case with SMAR.

In 2003, SMAR's tax liability was alleged to be approximately 1.5 times of its reported annual turnover at the time. The alleged 2013 tax liability was estimated to be about ten times the alleged 2003 liability and many times SMAR's current annual turnover. SMAR is a privately held company that does not release its turnover but the INSIDER believes that its sales after 2003 did not appreciably increase and are currently below the 2003 level. However if SMAR managed to maintain its 2003 sales,

Petrochemical valves from Metso

In their biggest order to date for Saudi Aramco projects, Metso will supply a considerable number of Neles rotary and globe valves, and Jamesbury control, on-off and safety valves to the South Korean company GS Engineering and Construction, the main contractor on the integrated refinery and petrochemical complex known as Rabigh I, in Saudi Arabia. The contract also includes Metso intelligent valve controllers and safety solenoid technology. Instrument lead engineer Jang In-Cheol said: "We know from experience that Metso can provide reliable and high quality products that contribute to our goals in efficiency and environmental aspects."

Metso also recently received another significant order in Saudi Arabia for its Neles and Jamesbury valves from Sadara Chemical Company, for their chemical complex in Al Jubail.

Metso will open a new service center in Qatar in 2014 to further support end-users across the Middle-east. Elsewhere, control valve specialist Severn Glocon is using Metso Neles ND9000 intelligent positioners to help meet demanding anti-surge valve requirements for a current NGL project. The anti-surge valve system had to respond in less than one second, following the signal: customization of the firmware in the positioner enabled this performance.

SMAR, With Nobody at the Helm, Continues Day to Day Operations

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SMAR's current alleged tax liability would approach its total cumulative turnovers from 2004 through 2013! In other words, SMAR's alleged tax liability appears to be growing faster than its gross revenue. The INSIDER believes that it is pretty obvious that SMAR will not be able to pay this off in full, ever.

The INSIDER's informant noted that these overwhelming tax issues were in stark contrast to SMAR's outstanding technical achievements. He also raised the question, "What will happen to SMAR's technology if SMAR closes its doors?"

Addressing the last question, the INSIDER believes that it is highly unlikely that another company will buy SMAR outright as a going concern with its current liabilities. Any company trying to acquire SMAR would certainly be forced by the Brazilian Government to cover the tax debt in its entirety. That would make acquiring SMAR prohibitively expensive, even in light of some of SMAR's intellectual property assets. Liquidation would seem more likely where SMAR would sell off its physical assets and intellectual property. SMAR owns a significant amount of valuable intellectual property that could potentially form the foundation of another major instrumentation company. Part of the intellectual property involves product designs and patent positions. However much of the intellectual property is know-how. Staff reductions and attrition can eat away at that know-how.

The INSIDER believes that if SMAR is liquidated, its intellectual property will likely be of limited value to the existing major instrumentation companies because they already have their own intellectual property and customers. By the time of liquidation, SMAR know-how could potentially have deteriorated to the extent that the purchaser would have difficulty maintaining and advancing its purchased intellectual property technology into the future --- even if many of the then-existing SMAR employees are available for re-hire. Companies headquartered outside of Brazil will probably shy away from such a purchase because it would likely result in a stand-alone operating unit in a foreign country that they might not understand well. Given past tax problems, it is likely that few (if any) Brazilian companies will have both adequate size and sufficient interest to purchase the intellectual property. For these reasons, the INSIDER believes that there will be few (if any) companies interested in buying SMAR intellectual property beyond what is necessary to manufacture specific existing products until they become obsolete. Early indications are that this scenario appears to have already played out in the 2013 sale of SMAR Research.

Any company trying to acquire SMAR would certainly be forced by the Brazilian Government to cover the tax debt in its entirety.

Returning to tax issues, the INSIDER believes that it is plausible that a detailed investigation of any sizable Brazilian company in 2003 could uncover discrepancies that could multiply exponentially over the years after taxes, penalties, interest and monetary corrections are applied. However, recent reported accusations include alleged import/export irregularities that have little to do with accounting practices but do appear to be related to SMAR's, "do or do without" attitude, perhaps manifesting itself in an attempt to navigate what appear to be onerous constraints applied by the Brazilian government.

If the investigation into SMAR activity was politically motivated to counter the FIESP candidacy, then SMAR underestimated the power of its opponent. In such an environment, an opponent with considerable

Why you need a control system integrator who belongs to CSIA

CSIA members produce comprehensive solutions for automation and integration needs

The Control System Integrators Association (CSIA) is a group of independent, professional service providers who use hardware, software and communications products to offer industry clients the best choices for control and information system integration.

Bob Lowe, executive director of CSIA says, "CSIA members develop, design and execute automation projects from beginning to end."

CSIA integrators maintain a full-time business providing control and information system integration applications and technology.

Members follow the CSIA Best Practices and Benchmarks Manual, which sets the standard for professional management of a system integration company, and integrators can choose to be CSIA Certified, a path that requires them to undergo an intense third-party audit and abide by strict performance standards.

CSIA Certification provides a standard approach to project management, offers financial benchmarks, quality assurance management and other business aspects. For more on CSIA, visit www.controlsys.org.

SMAR, With Nobody at the Helm, Continues Day to Day Operations

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power could potentially cause an investigation to be initiated so as to ensure that SMAR efforts were diverted away from FIESP to focus on fighting an existential threat to SMAR. Brazil's relatively slow legal process has given SMAR problems since 2003. Perhaps SMAR should have more objectively evaluated the advantages and disadvantages of participating in high-profile non-company activities --- even professional organizations and especially organizations where politics can be present --- because increasing exposure to positions with high visibility increases the possibility of falling farther.

Any political motivation behind the investigation has long become irrelevant. However significant damage has been done to SMAR's reputation, sales, growth, and employees. The latest reduction of personnel in 2013 has hit the remaining employees particularly hard as they must perform the work of those who were terminated. The INSIDER believes that this will become the "new normal" at SMAR --- as it has been at many other companies worldwide.

Reductions in personnel prematurely heralded the end of SMAR in 2013. Given the circumstances, it would not be surprising for SMAR to have additional personnel reductions or be forced to close its doors. On the other hand, there is some optimism that reducing expenses will put SMAR on a more sustainable path. In addition, the Brazilian government might negotiate an agreement that would settle the dispute in a manner that allows SMAR to survive and flourish.

The INSIDER is not hopeful that such an agreement will occur under the current Brazilian government because its leadership is generally not overly friendly to business. This situation will likely not change much in the near future because the current President has a good chance of winning re-election in the first round of voting in October --- even in the midst of a scandal relating to her roles in the Petrobras purchase of an oil refinery in the USA and other scandals involving alleged purchasing irregularities at high levels in Petrobras.

The INSIDER believes that, notwithstanding the above, any new pro-business administration would have difficulty changing the tone of decade-long negotiations with SMAR in a country where the legal code, which is based on the *Code Napoleon*, assumes that one is guilty until proven innocent.

Despite these tumultuous events, the INSIDER has found that SMAR continues to operate normally on a day-to-day basis. The remaining employees do not appear to be running for the exit. Regardless of what the future holds, SMAR has shown surprising resilience by merely surviving these overwhelming circumstances. Perhaps this is yet another manifestation of the SMAR "do or do without" attitude.

It goes without saying that business is done differently in foreign countries. SMAR is an indigenous Brazilian company that was unable to effectively manage certain aspects of its business in Brazil. Analyzing the situation from an outside perspective, the INSIDER believes that the Brazilian government has a limited understanding of the needs of Brazilian companies practicing state-of-the-art technology, and manages them as if they were low-tech companies or importers.

If an indigenous Brazilian technology company with worldwide presence can have problems of this magnitude, any company, whether it already has a presence in Brazil or is just thinking about entering the country with its products, should get the best advice possible and then think very hard about how to operate in Brazil. It you already have a presence in Brazil you may want to give it another look.

—David W. Spitzer PE

Technology Leadership Award Presented to Stanford Center for Integrated Facilities Engineering

Fiatech, a research consortium devoted to developing innovative practices for manufacturing, presented its James B. Porter Jr. Award to Stanford University's Center for Integrated Facilities Engineering (CIFE).

The award is a tribute to Jim Porter, former vice president of engineering at DuPont, who was instrumental in establishing Fiatech and whose vision, leadership, technical acumen, commitment to people and tireless efforts have advanced the cause of improving capital projects.

According to Ray Topping, director of Fiatech, "CIFE embodies the spirit of the Porter Award with vision, leadership, and passion for technology advancement." Topping continued, "CIFE has been advancing virtual reality applications and leading practices for educating students with advanced technology skills."

John Kunz, executive director of CIFE accepted the award. CIFE is challenging industry to reduce the project cycle time for major commercial structures, based on Virtual Design and Construction. The CIFE program provides training in the iRoom virtual reality environment.

—Walt Boyes

The Čapek Prize

An evening reception held in the sumptuous ballroom of the Lyon Town Hall, included the presentation by the InnoRobo organizers of the Čapek Prize to Prof Hirochika Inoue of the University of Tokyo, in recognition of his work on the development of robot-human collaboration. As Prof Inoue commented, a collaborative robot possibly becomes corroborative to a Japanese speaker, so the end result has been simplified to the word "Cobot", for a co-operative, service robot. While this signals a move of the image of the robot away from that of the classic aggressive machine with sharp humanoid features, the silver statue presented in recognition of the prize for Prof Inoue's work showed a return to the old image of a warrior robot – the education needs to continue!

Prof. Inoue

Karl Čapek was the coiner of the term "robot."

InnoRobo Show: Robots on Display!

15,000 visitors come to Lyon to see advances in robotics

Robot developments on display

Exhibitions showing the latest in robot and automation developments are popular around the world and attract public as well as industrial user interest, so there is always a big audience. In Europe, and particularly in France, the major exhibition and conference is InnoRobo, typically attracting around 15,000 visitors every March to Lyon, the second largest city in France, and capital of the south central Rhône-Alpes region. Founded four years ago, InnoRobo was initially dedicated to service robotics, rather than automated production machines. Bruno Bonnell, president of Syrobo, the French association for robotics companies, commented that four years ago the show had prototypes only, with no 'live' machines available from production. Last year the synergy between service robots and industrial robotics was the main discussion point, and 'cobotics' had emerged – the science of human-robotic collaboration. At the 2014 show, from 18-20 March, the scene was totally reversed, with every stand demonstrating working production models, and the prime discussion point was human-machine collaboration. Most robots displayed smooth moulded contours, with custom plastic mouldings to cover joints and motors, presumably formed from 3D printed moulds, since the maximum production runs discussed were around 1000. The smaller humanoid robots developed first, like the Nao, have grown bigger with second generation units getting taller, and even some full sized – in height: some were more expensive than others.

Bruno Bonnell, president of Syrobo

Business Aspects

Business investment, start-ups and opportunities were at the front of everyone's mind. InnoRobo last year launched a call for start-up companies to present their ideas to a jury of high tech investors, and obtain a slot at the conference to pitch to a wider audience. This was repeated in 2014, and there seemed to be a wide range of Government, Regional, entrepreneurial and Stock market funds available to the right ideas.

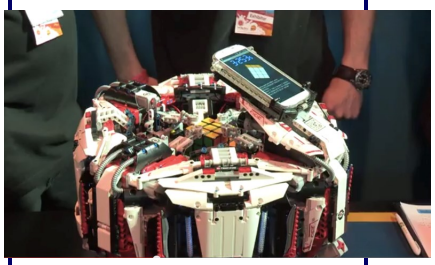
Undoubtedly a lot of this finance is being channelled into research projects, typically at Universities, but many times this work is undertaken in health or medical departments, or others, like agriculture, where robot software engineers are becoming more acceptable as staff members. Plus the producers of the robots, like the Nao from Aldebaran in France, or the ICub robot from IIT in Italy, find these University studies provide the major market for many hundreds of production robots. Typically these researchers can pool the available software developed in many centres, to enable their next research step.

Research at Lyon

Within the French National Institute of Health and Medical research, the robot software development team has been working since 2008, and has now seven people working on human-robot interaction. They won the funding to acquire the ICub robot based on this work pro-

That Rubik cube

Have you managed to solve how to do it yet? At the "Big Bang" Fair in Birmingham, UK, an automated system based on a Samsung Galaxy



Cubestormer 3

S4 Smartphone analyzed the cube and instructed four robotic hands to do the manipulations.

These were controlled by eight Lego Mindstorm EV3 bricks. All

LEGO Mindstorms Robotics Kit

these intelligent devices are equipped with ARM processors, and they completed the task in a record 3.25 seconds.

The "robot" system was created by Mike Dobson and David Gilday, who seem to be specialists in the Rubik cube. The Big Bang Fair is designed to encourage UK school children to take up science, technology, engineering or maths careers.

InnoRobo Show: Robots on Display!

Continued...

based on this work proposal, and have developed eye and eyelid movements to give the right social signals. Other groups co-operating on similar tasks (across Spain, Italy, Britain, Scandinavia and Switzerland) have been developing such aspects as mouth and lip movement, with the same objective, and the ICub variants developed have had success in interfacing with children with learning difficulties. As ever, to get on in this world, you need to brush up on your interpersonal skills, and this is needed for robots too.

Encouraging European robotics

The potential for the robotics industry makes it a prime target for development investment by governments, as a classic high tech industry creating many high-tech jobs. Obvious in Lyon were the efforts from the French and German Regional Governments, and from the European Commission. Regional clusters of expertise, maybe in different aspects of the technology, were claimed for Rhône-Alpes, Aquitaine, Midi-Pyrénées, and Bavaria/Munich. Eric Bourguignon of Bayfor Munich claimed to be project managing many EU funded robot projects, with international collaborations, and even providing travel grants for local industry to visit international partners. In France there has been specific robotic expertise developed by the nuclear industry, for example by CEA in the south, which is also applied by Areva in their nuclear plants. Philippe Bidaud of GdR-Robotique, the French co-ordinating body for robotics research in Government institutions, also mentioned the use by CNRS, the French Railways, of drones, on civil engineering survey work, for example monitoring lines across bridges and other structures from the air. Flying at 150m, these drones can monitor rail line positioning to within 2mm.

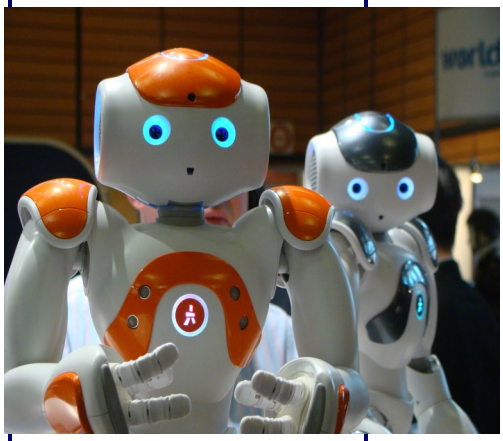
Commercial investment

Frank Tobe, based in California, is the publisher of the website www.therobotreport.com , which identifies and provides data on all companies working in the robotics market. Tobe is also the co-founder and research analyst for Robo-Stox LLC, the first benchmark index to track the global robotics and automation market, which has the aim of providing investment products that target these sectors. He arrived at InnoRobo in Lyon straight from Modex, a material handling exhibition in Atlanta, where he had been impressed by the warehousing systems developed by Amazon following their acquisition of Kiva Technologies in April 2012.

From his website, the distribution of current robot commercial companies can be assessed, which actually shows how these are mainly concentrated in Southern Germany within the European area, perhaps in contrast to the R&D activities presented throughout the conference from France. Tobe sees agriculture as the area where aspects of robotic technology will give the major benefits initially, but points to companies like Apple, Amazon and Google who are investing heavily into the technologies. Vision systems and software are the major investment areas, followed by production engineering. Examples quoted by Frank Tobe perhaps illustrate how the discrete automation systems are being changed to process automation systems using "cobotics": there is now an automated pizza machine that will produce a hot pizza with a customer specified topping in 5 minutes, and a similar hamburger machine – and he praised Fanuc for hav-

Robo-Stox companies

The Robo-Stox portfolio by value is 36% made up of US companies, and 24% from Japan: 6.4% come from each of Germany and Taiwan, 5.1% Switzerland and 3.9% from the UK: France has 2.6% along with Sweden, Israel, Netherlands and Canada. Of the companies allocated 2.35% of the weight of the portfolio each, the industrial automation names are ABB, Fanuc, Keyence, Kuka, Omron, Rockwell, and Yaskawa. Other companies that are allocated just under 1% each include Brooks, Flir, Jenoptik, Mitsubishi, NI, Renishaw, Schneider, Siemens and Yokogawa.



Robot jealousy?

InnoRobo Show: Robots on Display!

Continued...

ing the first "dark" factory, totally unmanned, producing components from fully automated machinery. Fanuc attended the InnoRobo conference, and claimed 15,000 robots active in France, from 15 separate integration partners.

European Fund

Bruno Bonnell, of Syrobo, is also a partner in Robolution Capital, a Paris based private equity fund (managed by Orkos Capital SAS) that will invest in innovative companies in the 'fast growing' service robotics market, mainly within Europe. The management of the fund sees potential in many European companies, and is not limited or restricted to France - although many of the team of the fund managers are French. The comments in the fund launch presentation, translated from the French, commented that "Today, 60 French laboratories are recognized worldwide for their service robotics, and Robolution Capital can create leverage to make France the California of Europe". The required funding target of Euro 80m was achieved in March, with a 50/50 public private split: the public money coming from Bank Bpi in France, insurer AG2R-La Mondiale, Orange, EdF and Thales. The first investments, of between Euro300k and Euro5m, are expected to be made by the Summer of 2014.

The InnoRobo Exhibits

As might have been expected, the show aisles were quite crowded with various different styles of robot, some walking, some automated delivery systems, alongside the visitors. From France, AWAbot.com telepresence technology (created by Bruno Bonnell in 2011) was in evidence with Beam robots strolling around. A user of such a telepresence robot guides a wheeled robot remotely, via the internet, and communicates with the remote environment by internet quality speech: the picture of the remote person, from his webcam, is shown on the screen held at eye level, and can be seen by people in front of the robot. While the person driving the robot can see in front of him, inevitably people to the side and behind are in danger of being knocked around, which caused some broken glasses from drinks tables at one evening reception, gate-crashed by the robots! Actually, these robots did seem to spend most of their time talking to one another, maybe because everyone else avoided their attention. Maybe the design needs more attention in the interpersonal skills area, which is what 'cobotics' is all about!

Matrikon Industrial Data Logger

MatrikonOPC has announced the release of the Matrikon Industrial Data Logger, an intelligent automation data gateway that provides third-party connectivity, on-board data collection and intelligent data forwarding in a single box.

The product connects securely to a centralized historian and transfers data to it, even in low bandwidth or unreliable network conditions. The unit combines reliable data delivery, connectivity and secure access control in an easy to use, low-maintenance device.

Key benefits include selective, event based data collection, low bandwidth needs, data integrity and confidentiality, reliable data delivery.

To learn more visit: www.matrikonopc.com/data-connectivity-devices/industrial/industrial-data-logger.aspx

Problems in Preventia: A Cyber Security Book Report

The INSIDER was furnished a copy of a Preventia Research Paper: *Industrial Control Systems Cyber Threat Research Revision 1.1*, compiled by Lewis Henderson, commercial director. Preventia Ltd is a UK based supplier of cyber security services. "We operate exclusively at the leading edge of the market, addressing the highest priority risk concerns of multi-nationals and governments," is how they describe themselves in the research paper.

It was interesting to me how little they got right, and how much they still didn't understand about Industrial Control Systems. What they did get right is, "No government, SCADA manufacturer, Integrator, nor user is motivated to make any significant changes to status quo when addressing the risks associated with ICS and SCADA systems." Something else they got right is, "applying standard Risk vs. Cost of Mitigation with SCADA and cyber security simply does not work."

They did a very high level (so high you really can't see anything) discussion of "Typical ICS and SCADA Environments." They didn't ever really define either ICS or SCADA, nor did they talk about the differences between the two system types. They noted that, "the market consists of a range of small to large vendors and integrators, serving predominantly from the US market." Apparently, they don't know that ABB, Siemens, Schneider Electric and several other companies are predominantly not US companies.

One of the things they noted was , "Looking to the SCADA vendors and manufacturers to improve or build in Security measures will add complexity, and cost, to their own technology so there is no vested interest to make significant changes." Apparently, they haven't seen companies like Honeywell, Emerson, ABB, Siemens, and others working with ISA (home of ISAsecure), Belden-Tofino, exida, and other groups and agencies to define what significant changes will lead to better security.

They give, with no reason, the example of GE as a hardware platforms vendor and Siemens as a software vendor. The rest of the market appears to be chopped liver.

Despite hard evidence to the contrary, Preventia's report concludes that "you will find the most difficult to detect and most severe attack to defend against is an insider threat."

The report DOES get correctly the difference between Corporate IT and ICS or SCADA systems regarding information confidentiality, system integrity and system availability. They note that safety is the primary priority of risk management, with process protection (integrity and availability), while in the Corporate IT matrix, it is protecting data confidentiality and integrity that are primary.

The report does not discuss the decade-long work of the ISA99 committee to produce a definitive standard for cyber security of Industrial Control Systems, and their comment on why incidents have not been happening is telling.

"Why aren't breaches reported in the press and incidents of catastrophic disasters caused by cyber attacks happening regularly? Possibly the Corporates are seen as soft targets with limited impact, whereas taking out a nuclear power station will have the most severe environmental consequences, and the perpetrators hunted down and brought to justice in ways we can't even imagine. Perhaps they have a conscience, to a point."

Compare this to the level of reasoning of Dale Peterson in his digitalbond blog, or my own editorial in this issue.

The section of the report that deals with tactical responses concentrates on the Windows XP environ-

Preventia—Continued...

ment, without once mentioning the additional security of running Windows XP virtual machines on updated servers.

The INSIDER has discussed this paper because it is unfortunately typical of the knowledge level of most "SCADA security professional" organizations we have seen.

We are not singling out this company, because they are so much like many other "security consulting firms" trolling for business in the ICS and SCADA area.

We strongly recommend that readers consider the actual experience of these organizations with real, live Industrial Control Systems before retaining them.
— Walt Boyes

Wellinghoff worries about terrorist attacks on the grid

Jon Wellinghoff, who was formerly chairman of the Federal Energy Regulatory Commission (FERC), in an article published by the Wall Street Journal in February, said that an attack on the Metcalf power station near Silicon Valley, Calif., in April 2013 was "the most significant incident of domestic terrorism involving the grid that has ever occurred." While that might be questionable, the fact is, attacks are becoming more common.

Ex-FERC chair Wellinghoff

Wellinghoff is concerned that the grid is out in the open and vulnerable. In August 2013, an attacker climbed a 100-foot-high transmission tower in Arkansas, and severed an Entergy power line alongside a Union Pacific railroad track. Other attacks have been reported.

Although North American Electric Reliability Corporation (NERC) conducts periodic grid security exercises to prepare the electricity sector to respond to a cyber incident and strengthen utilities' crisis response functions, Wellinghoff says he's more concerned about a physical attack on the grid than a cyber attack.

What he, and the rest of us should be concerned about, the INSIDER believes, is a series of coordinated cyber and physical attacks.

Such a series of attacks is easily doable for a competent terrorist organization, and the INSIDER believes that such a series of attacks will be attempted sometime in the near future.

For our speculation as to when such an attack will occur and what will trigger it, see the Editorial in this issue.
—Walt Boyes

Did FERC disclose too much?

When the Federal Energy Regulatory Commission allowed widespread access to its conclusion that only about nine key substations could cause cascading power outages across America in each of the nation's three synchronized power networks, FERC improperly disclosed information that was a matter of national security, at least according to Energy Department inspector general Gregory Friedman.

DOE's Gregory Friedman

Maybe so, but contrast this to the Department of Energy behavior with regard to the Aurora vulnerability, which even though CNN released the information years ago, continues to classify the information, including the video that is available on YouTube, as FOUO.

It is likely that anyone interested in destroying the grid would already know which nine substations to hit. So, exactly how is keeping this secret a matter of national security?

Maverick Technologies Picked by Magazine as #1

CIO Utilities Technology magazine published its annual "Most Promising Utilities Solution Providers" selection in its December 2013 issue, and named Maverick Technologies the best source for automation in the utilities industry.

"We shortlisted the ones that are at the forefront of tackling the challenges of the utilities industry," says *CIO Utilities Technology* magazine. "MAVERICK Technologies is the best source of automation, enterprise integration and sustaining services."

Tyrone Bowman, Industry Manager–Power at Maverick, says, "CIOs need to get involved at the power production level as well as the IT level. At the utility, there is real time data available from Supervisory Control and Data Acquisition (SCADA) systems and Distribution Automation Systems." CIOs must also ensure that integrated systems are safe and secure, including taking necessary measures to guarantee protection from cyber threats.

Maverick Technologies is the largest platform-independent systems integrator in North America.

ABB "Optimizes the portfolio" — divests HVAC product line

ABB, having made major US acquisitions over the last few years - into Baldor Electric, for $4.2Bn in 2011, and Thomas & Betts, for $3.9Bn in 2012 – is sorting out the portfolio, which has led to a couple of business divestments recently. These are said to be "In line with the ABB strategy of continuously optimizing their group portfolio.". Reuters suggests that ABB is considering divestments that could be worth as much as $1Bn, but so far only maybe $300m has been announced. In this strategy they are paralleling Siemens, who have recently divested the bulk of their water technology business, as well as their stake in mobile telecoms equipment maker Nokia Siemens Networks, and spun off the Osram lighting business.
In November last year ABB announced the sale and transfer of the whole of the Baldor generator-set business to Generac Holdings, based in Waukesha, Wisconsin, for an undisclosed sum. This business was seen to have limited synergy with the ABB core portfolio, and only represented around 3% of Baldor's sales total (approx $50m). Generac is an established producer and manufacturer of a wide range of generators and other engine-powered products.

Withdraws from HVAC

Now, in March 2014, ABB has announced the sale of the whole of the Thomas & Betts HVAC business to Nortek Inc, of Providence, Rhode Island. This time there is a quoted transaction value of $260m, to be paid in cash. The business, with operations in the UK, France and Belgium, and manufacturing operations in Mexico, had sales of $160m last year. Again, ABB said this business had limited synergies with their core portfolio, but this was qualified to confirm that ABB will continue to supply their main product lines to the

Ulrich Spiesshofer

HVAC industry, such as high efficiency electrical motors, motor drives – the main ABB core business - and their low voltage product range. ABB ceo, Ulrich Spiesshofer, commented "Overall, Thomas & Betts continues to provide great synergies with significant growth opportunities and our integration process is fully on track." Apparently, by combining the ABB low-voltage protection, control and measurement products with the Thomas & Betts electrical components, ABB has created a broader low-voltage offering with "significant market access". From within ABB, the Thomas & Betts business ceo Chuck Treadway added: "Acquiring this business will enable Nortek to extend its residential heating and cooling business into the adjacent segments of the commercial HVAC market", a view endorsed in a similar comment from Nortek ceo Michael Clarke, who described these as "attractive adjacent segments of the HVAC market in the United States and Europe".

Analysis by IHS

IHS has recently started research into the business of motor-driven systems in the HVAC industry. They also comment that the Thomas & Betts HVAC business focuses on commercial comfort and protection, which is well-aligned with the Nortek air-management systems. Nortek owns the air handling unit provider, CES Group, and this acquisition might enable Nortek to automate and optimize production of such units, which serve a very competitive US market, worth around $1.4Bn. IHS has also recently published a study on the world market for fans and blowers in HVAC and industrial applications.

ABB invests into their core business

ABB Technology Ventures has invested in Massachusetts-based Persimmon Technologies to help develop its 3D-deposition technology in the manufacture of electric motor components. Since launching in 2011, Persimmon has been developing a new approach to making motor components using 3D dep-

HONEYWELL EARNS HIGHEST CMMI RATING FOR SOFTWARE AND DEVELOPMENT PROCESS MATURITY

Honeywell announced that its Building Solutions (HBS) and Process Solutions (HPS) businesses have been appraised at Maturity Level 5 of Capability Maturity Model Integration (CMMI), the highest and most prestigious level of global recognition in software development that a company can achieve. About 6 percent of the more than 6,000 organizations with published appraisals results have achieved this status.
CMMI is a process improvement appraisal framework administered by the CMMI Institute to determine the maturity of an organization's software and development processes. Honeywell's Building and Process Solutions businesses have shown superior and well-defined, standardized software development processes. "To be appraised at Maturity Level 5 is a significant accomplishment that few companies have achieved," said Dan Sheflin, chief technology officer, Honeywell ACS.
Avnet Services performed the appraisal of a variety of projects including Honeywell Experion® Process Knowledge System, and Honeywell Enterprise Buildings Integrator, providing seamless digital information and control across all building operational management systems.

ABB continued...

osition processes that aim to increase power density, eliminate manufacturing steps and reduce component costs. The company's first prototype motor concept increases the stator effective area and produces a higher output motor with comparable size and material cost.

Grant Allen from ABB

The development work has been funded in large part by four National Science Foundation grants. This new funding, providing a total of $14m from multiple investors, will help Persimmon expand both its existing vacuum robotics product portfolio and invest further in the development of the hybrid-field technology. The ABB investment will also codify joint development of many new Persimmon products, allowing for the exchange of R&D information in industrial motors that Persimmon is producing today.
"ABB has been extremely impressed by Persimmon's team and its R&D efforts to date," said Grant Allen, principal at ABB Technology Ventures in North America. "Its innovations in the motor component manufacturing arena are especially exciting for ABB and we look forward to working closely with Persimmon to build the next generation of motor componentry."
"ABB's involvement opens a unique opportunity for our technology," said Dr. Martin Hosek, cto at Persimmon. "Together, we can greatly accelerate the pace of motor innovation and expand our 3D deposition processes across a range of applications in the rapidly growing market of high-performance and efficient motors".
Investing since 2010, ABB Technology Ventures has deployed over $160m into a wide range of sectors including cyber security, robotics, smart grid, renewable power generation and data center efficiency.

ABB's Veli-Matti Reinikkala

ABB wins $175 million oil and gas project in the Arabian Gulf

ABB has been awarded a $175 million contract to upgrade the power generation capacity at Zirku oil and gas processing facilities in the Gulf. The order, which covers engineering, procurement and construction (EPC), was awarded by Zakum Development Company (ZADCO), and booked by ABB in the fourth quarter of 2013.
The project involves the installation of additional power generation facilities to improve overall energy efficiency and operational flexibility and reliability. ZADCO plans to increase the production rate of the Upper Zakum field from 550,000 to 750,000 barrels of oil per day. The Zakum field is estimated to be the second-largest field in the Gulf and the fourth-largest in the world.

Zirku Island, located 135 kilometers north-west of Abu Dhabi, is considered the main industrial base for the processing, storage and export of oil from the Upper Zakum, Umm Al-Dalkh and Satah fields. With its advanced oil and gas installations, Zirku processes and exports ZADCO's oil via cargo ships to the world markets.

"ABB's deep oil and gas industry knowledge and project execution capabilities were important factors in winning this order," said Veli-Matti Reinikkala,

Foxboro I/A Series Pressure Transmitters Models IGP10S and IAP10S Released

Invensys has released its new Foxboro I/A Series IAP10S and IGP10S pressure transmitters.

The new intelligent, two-wire transmitters provide precise, reliable measurement of absolute or gauge pressure and transmit a 4 to 20 mA output signal with a superimposed HART digital signal for remote configuration and monitoring. Key features include industry-leading 400:1 turndown;

IAP10S and IGP10S

Foxboro patented multiple calibration technology; Time-in-Service features for advanced diagnostics; LCD indicator with on-board pushbuttons for easier configuration;Industry-leading five-year standard warranty, with a 17-year warranty available.

According to Foxboro, an IAP10S and IGP10S transmitter performs better than multiple separate transmitters designed to cover the same turndown range and reduce inventory.

And there is still no word when the name Invensys will go away. Schneider reports financials April 24th.

ABB continued...

head of ABB's Process Automation division. "With over 50 years of experience and more than 300 EPC projects implemented, ABB is a player of excellence in the oil and gas industry. New oil and gas frontiers require power and automation solutions and ABB has a unique business scope in power, automation and power electronics."

"This is a strategic project for ZADCO and we look forward to working with ABB to successfully deliver the project safely and on schedule," said Robert Talbot, SVP-Projects, ZADCO.

ABB is responsible for the engineering, procurement, construction, installation, pre-commissioning, commissioning and testing of two gas turbine driven generators, step-up transformers, new high-voltage switchgear, power management system and associated facilities.

The scope of work includes the delivery of a new substation to house Gas Insulated Switchgear (GIS).

ABB will also provide waste heat recovery units to utilise exhaust gas from the new gas turbines for process heating and subsequently reducing CO2 emissions. The project is currently in the design stage and is scheduled for completion and handover to operations in June 2016.

Oil, gas & petrochemicals represent a significant share of ABB's revenues. A combination of mature markets; frontier markets (deep water, arctic, heavy oil); and non-conventional gas (shale, coal seam gas) are driving investment to new levels. Higher oil prices are driving industrial productivity and energy efficiency.

Siemens motor developments

Some of the more interesting comments, on a recent Siemens webcast about their planned activity at the Hannover Fair, related to their Simatic motor and drive developments.

Siemens' Jan-Peter Schwartz

Integration of the motor drive controller into the motor housing might have been expected, but Siemens also will offer a motor condition monitoring system also incorporated into the installation, using suitably ruggedized electronics. This was then quoted as being able to connect directly to a "cloud-based condition monitoring management system."

Condition monitoring service

Following up on this later, a press release at the end of March actually launched this Siemens "Asset Analytics Services," described as, "a new service for online condition monitoring of machines, production lines, and even entire industrial plants." Siemens is offering this new condition monitoring service based on a scalable cloud infrastructure, where Siemens experts will assist companies in recording and analyzing the data. In the Siemens Operation Center, the data are analyzed and the results are sent to the customer via a web portal or as a report. As well as monitoring manufacturing equipment, from machine tools to rotating machinery, the system will also include monitoring of the industrial IT infrastructure - their "Industrial Network Analytics Services" covers the diagnostics and continuous condition monitoring of plant networks.

The Siemens theme for Hannover is "Making things right," aiming to boost the competitiveness of their customers, to enhance their competitive standing.

Siemens Oil and Gas Summit

April 22-23, Siemens will hold an Oil and Gas Innovations Conference at the Hilton Houston Westchase. The event is complimentary. More information can be found at usa.siemens.com/oil-and-gas. The INSIDER will attend this conference.

HONEYWELL ENRAF UNVEILS NEW FUSION4 MSC-L LOADING CONTROLLER

Honeywell Enraf has introduced the the final device in the Fusion4 portfolio, a multi-stream controller.. Honeywell claims that Fusion4 MSC-L offers a ground-breaking, intuitive device interface to enable every installation, operation and maintenance function to be controlled in the field using a large display and integrated keyboard that works as a complete hazardous area operating station. The controller can operate up to six loading arms simultaneously, providing safe, reliable control. On-screen icons make it intuitive, cutting training times and reducing the risk of human error. Combined with the installed keyboard, it offers fully functional control of the loading system from the unit itself.
Other MSC-L features include a hazardous area design; unique live data transfer in hazardous areas, with safe, secure two-way data for rapid transfer of transaction data, configuration files and calibration records; user configurable and expandable I/Os; real-time stream, I/O type and system diagnostics; advanced alarm ; and compatibility with Honeywell Enraf's safe area device monitoring software package Fusion4 Portal.
For more information visit www.honeywellenraf.com

THE WAY I SEE IT
Editorial

TEOTWAWKI: Waiting for the other shoe to drop

Why haven't the prophesied attacks on Industrial Control Systems happened? Well, we don't know how many of them actually *have* happened, because it isn't something that a refinery or chemical company will talk about publicly. We do know some have happened. So far as we know, though, nobody has held a supermajor for ransom by cyber exploit. So far as we know. Dale Peterson of digitalbond has said that there is no really apparent motive for ICS cybercrime. But there is. It just isn't financial gain.

The truth is that any major cyber attack (like bringing down the Western States Electric Grid) or taking out a very large refinery, or chemical plant, or a rolling wave of attacks-- all of which can be done, and all of which are relatively easy to do-- will destabilize the economy of the entire world.

Civilization, such as it is, is fragile, very fragile, and easy to break. It's not so easy to rebuild. Just ask 6th century Romans. Ask Chinese historians.

In order to commit such an act or series of acts, it requires a group (government backed or not) who are angry enough, for whatever reason, to want the end of the world as we know it to happen. The End of the World As We Know It, TEOTWAWKI, is only going to happen when someone who has the means, decides on a motive.

Civilization, such as it is, is fragile, very fragile, and easy to break. It's not so easy to rebuild. Just ask 6th century Romans. Ask Chinese historians.

I am somewhat less sure of a nation state deciding to go this route than I would be of a terrorist organization from anywhere.

Note that I didn't say Islamist terrorist organization. There are many other organizations with other agendas. Radical environmentalists, anarchists, religious fundamentalists who want to "help along" the End Times. There are lots.

A nation state would have to have a plan to survive fundamentally unscathed after bringing down the economy of the world. That's hard to do. A terrorist organization would be convinced that after the end, their brand of religion, culture, civilization, or whatever will be the one that is earnestly adopted by the survivors. This kind of logic is nut-case extraordinaire, but that's from the outside looking in. From the inside looking out it makes a terrible kind of sense.

So, what to do? We cannot rip and replace all the ICS systems in the world. There isn't enough money available to do it, and there's no way to shut down plants long enough to do it without the very economic destabilization we'd been trying to avoid.

So we can't rip and replace, even though we probably should. And besides, there's no guarantee that any new systems, regardless of how designed to be secure they are designed to be, will be any more secure. They make smarter offensive strategists every day.

No, what has to happen is that there needs to be a combination of better design, security appliances, better security practices, and better social engineering in the critical infrastructure industries. That'll be a long, tough slog, but it beats hiding under a desk waiting for the blast.

INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Profile

A Conversation With Peter Zornio

by Joy Ward

Peter Zornio is the Chief Strategic Officer for Emerson Process Management and as he says, "part of the graduating class of Honeywell in the late 80s because there was actually quite a little passel of us there that are now still distributed throughout the industry." We caught up with him at the ARC Group CONFERENCE in Orlando.

Joy: How did you get into automation?
Zornio: That's always a good question because in the US, at least, nobody goes and gets a Bachelors in automation. I think that does exist in Japan and China and several other countries but in the US nobody does that.
So when we're interviewing folks or talking to people I always ask them how did they stumble into automation or how did you get into automation? In my case, I studied chemical engineering in New England, at the University of New Hampshire. Pulp and paper was the industry for chemical engineers in that area but it looked like that industry was declining a little bit. So when I graduated I was looking around to see what options there were. I ended up interviewing with Honeywell who was looking for people who had pulp and paper background for their pulp and paper applications group. That was me. For me, I would have to say that automation turned out to be the ideal thing because if I wasn't going to be a chemical engineer I would have studied computer science. When I got into chemical engineering I took some computer science classes and I was like, "Wow, this is pretty cool too. Maybe I ought to do this." In a way automation is the perfect blend of both. You're applying computers to controlling chemical processes so it involves needing to know what the chemical processes do and it involves needing to know how computers and software work. So that's how I ended up in the automation field.

Joy: You are one of the long-time experts in this field. Tell me about some of the high points in your career.
Zornio: I think for me a lot of the high points are almost always associated with some kind of new product introduction, when we've done some kind of new cool, innovative thing that I've felt I've been a part of because I was the marketing guy who guided what it was going to be or I helped make decisions or was involved on the architecture team, the technology team or whatever. And then when you actually see something come out in the market you're like, "Wow, that's really great!" That's really something that you feel proud of because you see something actually get out there. One of the more notable ones I would say for me was the original introduction of the Process Manager when I was at Honeywell. That was in the late 80's, 1988 or 1989. That was a real revolutionary process controller for Honeywell. Then more recently it was our work we have done at Emerson with our Delta V version 11 with electronic marshalling. That one has been fantastic. That has been one of the easiest ones to talk about with customers and to get them to understand the benefits. I think we really did a great job on that.

Joy: What's important about that for you to be part of an introduction like that?
Zornio: It's like watching your baby getting born. You've been in there working on the design, what the functionality is going to be, then to see it actually come out in the market and get a good reception and start selling and customers use it and like it. That's why it's important and exciting. That's why it's associated with the better things.

Joy: What's important about it being associated with automation?
Zornio: It's important, I guess is because it's where I am. I'd probably feel the same way if I were in the computer industry or if I was off designing chemical processes for somebody. It's just that engineers like to see the output of their work. That's why it's important. Automation itself is interesting because it's applying computer science to chemical processes, so that in itself is just intellectually stimulating and fun for me.

Joy: What kind of trends in automation are you seeing that you're excited about?
Zornio: The biggest trend I arrived too late in the industry for what was the DCS (Distributed Control System) itself and moving to microprocessor-based digital control. What I did see, I have to say, from top to bottom, the trend of moving to open systems in automation. That was a very transformative kind of thing in our industry as everybody moved away from proprietary systems and basically designing all the stuff themselves to using commercial IT technology for a good chunk of the architecture. It was mostly a good thing although there were a couple of hidden surprises inside. One was the obsolescence cycle. A lot of customers didn't realize what they were in for in terms of the churn and the turnaround that was going to happen there. Another one that we're

Zornio continued...

experiencing at an even higher rate today is cyber-security. It is not that proprietary systems would have been 100% bulletproof from a security point of view but the problem would have been a lot easier just because proprietary systems start with what we call security by obscurity. Because they use proprietary stuff there was inherently a lower number of people who understood it.
Also the transformation of the field becoming digital has been a big part of my career. I was involved in the original Fieldbus and SP50. There were competing camps at that time and I was in the Honeywell-backed camp, which was called World FIP for those who remember the whole battle. It turned out to be a big deal for me career-wise because that's how I met John Berra, who was the guy who hired me and brought me to Emerson.
Now I think its wireless. A lot of people who look at wireless and are skeptical or say, "Really? We're going to do that?" I always say, "Okay, you really don't believe that at some point in time we will be using wireless for all this stuff considering how inherently easier it is to install, maintain, whatever?" They hesitate for a while then they say, "So really the discussion is not if, but when wireless is going to become a predominant technology in our industry?"

Joy: Are there any trends in automation you aren't as happy with?
Zornio: I think that one of the trends that everybody in automation is not happy about is that we have never been able to quite get automation the respect it deserves in manufacturing, management eyes. Automation engineers need to know a lot to really do their job well. They have to be good at a lot of things. They are kind of the Rodney Dangerfields of the engineering or process world sometimes because in actual operating facilities a lot of times, it is viewed as a service, something that has to be there and not for what it can really do to improve the efficiency, the production. It (automation) really can be transformative if you want it to be in the operation of a facility.
We've certainly seen some consolidation. That's another trend. I can't say whether I'd consider that good or bad. I

think that's actually going to continue even more. It actually didn't consolidate at the pace I think we all predicted in the late 80s or early 90s. A lot of the big guys are still around but a lot of the smaller players are no longer with us.

"I think that one of the trends that everybody in automation is not happy about is that we have never been able to quite get automation the respect it deserves in management's eyes."

The same big guys were the big guys back then.

Joy: What kind of advice would you give a young engineer considering going into the field?
Zornio: First I would tell them that it is a very interesting field as I just described. If you are, hopefully, just attracted to it out of technical curiosity or scientific curiosity, the fact is that there are a lot of interesting problems. There is an interesting cross-section of technologies. In my role, I have to know about IT technologies almost to the same level as someone who is leading fundamental IT stuff. I have to keep track of what Microsoft is doing, keep track of what all the trends are in handheld devices, and much more. But at the same time I need to be pretty well aware of a lot of stuff the general IT industry doesn't in terms of how real-time embedded controls stuff has to work, or real-time networking. So it is a very broad set of technologies that you end up getting involved in within automation. Hopefully that would be one of the first things that would draw you. I do think that it is tough, going back to what I said before, how automation is sometimes viewed in end-users' companies. It's tough to have a big long career path at an end-user company unless you are at one of the really big companies. It's easier to have that kind of career at a vendor because at an automation vendor what you know and what you learned in automation is the core business. n you look at advancement opportunities.

Joy: What would you warn them about?
Zornio: I would warn them about what I just said that at an end-user you may not get the respect you feel you deserve and have probably earned for some of the things that you do.
I think I would have to warn them that they are going to have to come up with a very good brief one-minute description of what it is they do for a living for when they meet people at parties or anywhere else. Actually, Greg McMillan and Stan Weiner at Emerson wrote a book on that, *How to Become an Instrument Engineer,* and that was the whole premise. That was one I actually read when I was younger and I think it was spot on because you're not going to be doing something that all your relatives and everybody else is going to immediately know what you do for a living. Like if you say, "I work at Google," or I work at IBM," or somewhere they are all very familiar with or have heard of before. So you've got to be okay with that before you get in the industry.

Zornio continued...

Joy: What do you do for fun?
Zornio: My primary hobby is actually golf. I kind of got into golf, not because I'm good at it, but golf courses to me are nice parks. They are nice places to go outdoors and get some exercise. It doesn't beat you up too much. I used to ski a fair amount. I don't do that as much anymore. I figured out that skiing was associated with cold weather and I've decided that I've grown less fond of cold weather over the years. I try to do activities with my family, my son, whenever I can. Those are pretty much the bigger hobbies.

Work keeps me very busy. That's probably another transformation. For anyone my age, there is no such thing as not being at work anymore. This is talked about all the time but when I started— I'm now going to sound like crotchety old guy— but, you worked and you had a time when you stopped and the time was your own. Now you are continuously connected by these wonderful, awful portable computers we all carry around in our pockets that we call smartphones. So it gets increasingly difficult to get away and have any time to yourself but I think that's going to be true in any industry or any time you get into a position where you have a fair amount of responsibility or stuff to do.

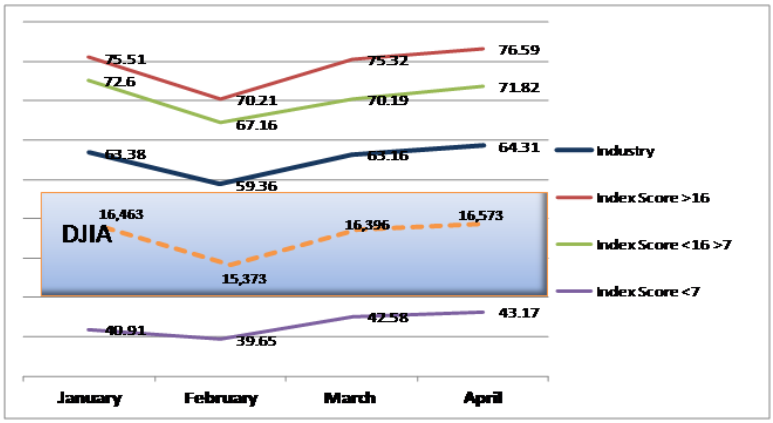
It's a very exciting industry. I would say that there is less core invention or innovation that happens specifically around just process control because we've gotten so much better at borrowing technology from industries that are bigger than us like the IT industry or even as you look at wireless, the battery technology in the cell phone industry. But there is a huge amount of innovation in looking at how you can just take technologies from other stuff and just put them together to make a whole new solution. And then there's still room for very good real innovation in very process control kinds of things. You look at wireless. That was a very good example of taking something that everyone had said, "Wireless, what's the big deal? We use that." But making it actually work in the automation world, in these canyons of metal facilities, that's a tougher challenge. And actually doing it in such a way that our slow-to-adopt new technology industry is actually convinced that will work. I think there are a lot of good years to come in the automation industry still. It's not going away. Despite how hard we try to make everything in the world "virtual" and despite how much I think some people try to live virtual existences rather than real experiences, we still need real food. We still need real fuel, still like to use real plastics, real things that are manufactured with the same chemistry that has not changed since the Earth cooled. So those facilities that make those kinds of real goods are going to continue to need automation to do that with.

> "In my role, I have to know about IT technologies almost to the same level as someone who is leading fundamental IT stuff, keep track of what Microsoft is doing, keep track of what all the trends are in handheld devices, and much more. But at the same time I need to be pretty well aware of a lot of stuff the general IT industry doesn't in terms of how real-time embedded controls stuff has to work, real-time networking."

Joy: When historians in the future look back at you, how do you want to be remembered?
Zornio: Maybe I was involved in a lot of key developments. There's nothing, almost nothing in the whole space of automation that you could say, "that person did that." It's always a team. It's always a team of talented individuals and that always is the very fun part when you are working with a team of like-minded talented individuals. You are collaborating together. As long as you have an attitude that everyone's knowledge and experience is valuable and they have it from a perspective that you don't have and you realize you should be listening and sharing and wondering why they have that— and then putting all that together to come up with the best stuff. So , yeah, I was involved in a number of some big industry transformative stuff like I just described; the digital field architecture, wireless like we are doing at Emerson, electronic marshalling; some of the TD3000 and the TPS developments I was involved in. So I guess it would be that I was a good team player, a good innovation inciter; an inciter getting things done with other folks. By no means do I expect to be held up or do I deserve to be, as the guy who did it. In all my times it has always been a number of folks that make any big innovation happen.

Joy: What makes that fun to you?
Zornio: It's fun to be part of a team just because people always just enjoy an esprit de corps, just like in a sports team or anything like that. Unless you are a true loner personality, people are social animals. We enjoy working together on something and the camaraderie and the trading of stories and the having a beer together at the end so I think it's all part of being human in terms of liking social interaction; being part of the team.

Joy: Thank you to Mr. Zornio for being a valuable and fun member of the automation team.



INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

In an attempt to accurately measure the financial health of the industrial automation industry, the Spitzer and Boyes LLC quantitative research team, led by Mary Samuelson, has developed an index based on company size, annual return on investment, stock price, and various other factors. The INSIDER calls this the INSIDER Health Watch.

The Health Watch will be recalculated monthly and then graphed to provide an ongoing, visual representation of the financial changes that occur within our industry. In addition to showing the industry as a whole, the index is used to segment the industry into groups, to determine if factors in play at a particular time are affecting one particular company group over another.

We have inserted the Dow Jones Industrial Average into the middle of the graph for comparison purposes. In general, financials within the industry closely mirror stock market changes, with a sharp dip seen in February followed by a rebound in March that continues into April.

This pattern holds true for both of the higher score index groups, represented by the red and green lines in the top portion of the graph.

The dark blue line in the graph below represents the industry as a whole. After a rocky February, the health of the industry continues to improve, in most instances surpassing January numbers with increases seen in both March and April.

While smaller companies, represented by the purple line toward the bottom of the graph and below the DJIA index, also reflect a decline in February, the drop is noticeably less pronounced than that seen by the larger, and many times more diversified companies with large overseas holdings. These smaller companies, more often privately held and more clearly aligned with a specific product, were better able to weather the storms of February than most of their larger counterparts.

About the companies: Seventy nine (79) companies were chosen for inclusion in the INSIDER Health Watch. In an attempt to represent the industry as closely as possible, companies of various sizes, revenue levels, number of employees, and amount of investment return were included. Privately held and publically traded companies are both represented.

ABB Inc.	HLS Systems International, Ltd. (Hollysys)	Rotork Controls
Advantech	Honeywell Automation and Control Solutions	Samson
ALPS ELECTRIC (MALAYSIA) SDN. BHD.	Horiba	Schneider Electric SA
Ametek EIG	Iconics	SICK AG
Aspen Technology	IDEC	Siemens Aktiengesellschaft
Azbil Group (Yamatake)	IFM	Spectris plc
Badger Meter	IMI	Spirax-Sarco Engineering plc
Balluff gmbH	Invensys plc (acquired by Schneider Electric)	SUPCON Group Co., Ltd.
BR Automation	Keyence Corporation	Teledyne Technologies Incorporated
Beckhoff	Krohne	Thermo Fisher Scientific
Belden	Magnetrol	Thermon Group Holdings, Inc.
Bosch Rexroth Corporation	Meggitt SA	TMEIC
Burkert	Metso Oyj	Toshiba
Cameron	Mettler-Toledo	Turck
Custom Sensors & Technologies, Inc.	Mitsubishi Electric Automation Corporation	Vishay Precision Group, Inc.
Danaher	MKS Instruments, Inc.	Wago
Diehl Stiftung & Co. KG	MTS	Watlow Electric Manufacturing Company
EATON CORPORATION	National Instruments	Weidmuller
Emerson Process Management Llp	OMRON Industrial Automation Corporation	WIKA Alexander Wiegand SE & Co. KG
Endress+Hauser Flowtec AG	Opto22	Yaskawa
Festo AG & Co. KG	OSIsoft	Yokogawa Electric Corporation
FLIR Systems, Inc.	Parker-Hannifin Corporation	
FLOWSERVE PTE LTD	Pentair	
FMC	Pepperl + Fuchs	
Fuji Electric	Phoenix Contact	
GE Energy Measurement & Control PTY LTD	Pilz	
Gefran S.p.A.	Pyromation	
Harting	Rockwell Automation, Inc.	
HITACHI Information and Control Systems	Roper Industries, Inc.	

MatrikonOPC Releases the OPC UA Proxy

MatrikonOPC, a Honeywell company, today announced the release of MatrikonOPC UA Proxy, which makes it easy for companies to take advantage of the next generation Open Process Control (OPC) standard – OPC Unified Architecture (UA) – whilst continuing to use their existing OPC classic architectures.

While the OPC UA standard is backward compatible with classic OPC from a data perspective, it uses different technologies to establish connections and transmit OPC data. Using the UA Proxy from MatrikonOPC, companies can bridge this gap, making it possible for them to maximize their ROI on their existing classic OPC architecture whilst being free to adopt the broad range of new OPC UA based product offerings.

"Companies using OPC classic have seen the additional value OPC UA has to offer, but sometimes have concerns about how to go about tying the two technologies together," said Darek Kominek, marketing manager, MatrikonOPC. Key features include a streamlined setup workflow allowing for connection in minutes; easy to use, the smart defaults require minimal user knowledge of OPC UA; eliminates traditional DCOM or firewall issues; and operates on Windows system server.

To learn more about the MatrikonOPC UA Proxy, please visit: http://www.matrikonopc.com/opc-ua/products/ua-proxy.aspx

ISA and Automation Federation Sponsor Cyber Conference

The Automation Federation, the International Society of Automation (ISA) and the Illinois Manufacturing Excellence Center (IMEC) will co-present an industrial cybersecurity seminar on 18 April, 2014 titled, "Protecting Our Nation's Critical Infrastructure: How are you mitigating the risk of a cyber attack?"

Northern Illinois University Naperville Campus

The seminar will take place from 8:30 a.m. to 12:00 p.m. at the Northern Illinois University Naperville campus located at 1120 Diehl Road in Naperville, Illinois USA.

The free seminar is part of a series of nationwide meetings designed to educate US industrial and manufacturing leaders and operators of critical infrastructure on the importance of implementing the US Cybersecurity Framework and its key components.

During the past year, representatives from ISA and its umbrella organization, the Automation Federation, have assisted in the formation of the US Cybersecurity Framework—at the White House's request—because of their expertise in developing the ISA/IEC 62443 series of industrial automation and control systems (IACS) security standards.

The Cybersecurity Framework, officially launched in Washington, DC, serves as a voluntary how-to guide for American industry and operators of critical infrastructure to strengthen their cyber defenses. The guide is a key deliverable from the Executive Order on "Improving Critical Infrastructure Cybersecurity" that President Obama announced in his 2013 State of the Union address.

President Obama remarked that cyberwarfare is one of the "most serious economic and national security challenges we face as a nation," then adding "America's economic prosperity in the 21st century will depend on cybersecurity."

Representatives from the White House, the National Institute of Standards and Technology (NIST), the Automation Federation, ISA and IMEC will illustrate why IACS security standards are fundamental components of the plan and implementation.

Without ISA/IEC 62443 standards and other cybersecurity defenses in place, cybersecurity experts—including those from ISA and the Automation Federation—warn that industrial cyber attack could result in widespread plant shutdowns, operational and equipment failure, severe economic and environment disruption, and public endangerment.

Registration for the event can be found online at www.imec.org/events.cfm.There is no charge to attend the event, but all interested companies are encouraged to register prior to the 10 April deadline. Questions may also be directed to the IMEC marketing department.

Alfa Laval acquires Frank Mohn but there's trouble in the Mohn family

Alfa Laval has signed an agreement to acquire Frank Mohn AS, a leading manufacturer of submerged pumping systems to the marine and offshore markets. The acquisition, which strengthens Alfa Laval's fluid handling portfolio by adding a unique pumping technology, will further reinforce Alfa Laval's position as a leading supplier to the marine and offshore oil & gas markets.

Alfa Laval has agreed to acquire Frank Mohn AS ("Frank Mohn"), with the product brand Framo, for a total cash consideration of NOK 13Bn ($2.2Bn), on a cash and debt free basis, from Wimoh AS, a company controlled by the Mohn family. Frank Mohn, headquartered in Bergen, Norway and with approximately 1,200 employees, generated sales of NOK 3.4Bn ($600m) and had an order intake of NOK 6.1Bn ($1Bn) in 2013.
The operating margin is significantly above the Alfa Laval average. The acquisition is expected to be EPS accretive as from closing of the transaction.

Lars Renström, President and CEO of the Alfa Laval Group

"Frank Mohn is an excellent company that we have been following closely for several years. It has highly skilled employees, high quality products and a market-leading position within segments offering attractive long-term growth prospects", says Lars Renström, President and CEO of the Alfa Laval Group. "The combination of Frank Mohn and Alfa Laval will provide a very attractive offering of products, systems and services and it will strengthen our leading position as a provider of critical systems for ships and offshore oil & gas production units, with unmatched service capabilities."

Alfa Laval continuously looks for growth opportunities and considers the long-term growth prospects for marine and offshore oil & gas markets to be very attractive. Frank Mohn is a leading supplier to these markets by providing submerged pumping systems, under the product brand Framo.

"Frank Mohn is an excellent company that we have been following closely for several years. It has highly skilled employees, high quality products and a market-leading position within segments offering attractive long-term growth prospects."

With the acquisition of Frank Mohn, Alfa Laval also strengthens its fluid handling portfolio by adding industrial pumping systems to the existing range of equipment, which is today mainly dedicated to sanitary applications with high demands on hygiene.

Frank Mohn's main product in the marine segment is its unique submerged cargo pumping system, which plays a vital part in maximizing the utilization of product and chemical tankers. The system enables safe and flexible cargo handling performance for quicker turnaround time and fewer voyages in ballast.

In the oil & gas segment, Frank Mohn offers packaged pumping systems for offshore installations including seawater lift, water injection and fire water pumping systems contributing to safe and efficient operations.

The service organization of Frank Mohn provides technical support during the installation phase of a project, as well as professional service throughout the lifetime of the installed systems. The service activities represented slightly more than 20 percent of the total sales 2013.

"Consolidation and globalization takes place in all

Industrial Automation Equipment to See Stronger Growth in 2014

Worldwide revenue in 2014 for the IAE market will reach a projected $185.3 billion, according to a new report from IHS Technology. This is up 7% from $173.0 billion in 2013. IHS forecasts the industry to hit $225.0 billion by 2017.

Motors and motor controls will be the largest segment in 2014, according to the report, thus accounting for 40 percent of total IAE market revenue. Automation equipment is next, with 31 percent, followed by power-transmission equipment with 29 percent.

Among the global regions, Asia Pacific will lead in growth, followed by the Americas, Japan and then the collective Europe-Middle East-Africa (EMEA) region. EMEA is projected to claim the largest share of revenue, at $61.5 billion, followed by Asia-Pacific, the Americas and Japan.

Three distinct market developments will help the IAE market to grow. Convergence will transform manufacturing from a productivity driven process to one controlled by digital information. 3-D printing could also represent another turning point, as will the aging workforce in the future.

Alfa Laval continued...

industries. We have shown competitiveness through innovation, quality and a long-term view on customer relations. Alfa Laval's commitment and focus on quality products to an international market is a heritage we share", says Trond Mohn, Chairman of Frank Mohn AS. "Our customers and employees have recognized Alfa Laval as a reliable supplier of heat exchangers and separators for generations."
Trond Mohn continues, "Alfa Laval is the only company we could see as a responsible and long-term owner of Frank Mohn AS and I am very happy that we have reached an agreement. Through Alfa Laval's industrial platform and global reach we are confident that Framo will continue to serve demanding customers and foster its position as a global leader."

The acquisition of Frank Mohn will be funded by existing credit facilities and a fully committed bridge facility. Alfa Laval's net debt/EBITDA ratio on a pro forma basis (following completion of the acquisition) would be around 2.5x. The transaction is expected to be EPS accretive as from the closing and synergies are expected to reach about NOK 120 million annually, gradually realized over a three year period.

After closing, Alfa Laval intends to include Frank Mohn and the product brand Framo in the Marine & Diesel division, headed by Peter Leifland, Executive Vice President, Alfa Laval Group. The company will be kept together and form a new segment in the Marine & Diesel division, under the same management as today.

"I found out yesterday about the sale by Trond Mohn and I thought it was a cowardly negotiation action from my father. I apologize to all the staff, but especially the unions."

The activities in the Bergen area in Norway; the new office and sales & service facility at Askøy – as well as production facilities at Fusa, Flatøy and Frekhaug – will become Alfa Laval's operational centre for marine and offshore pumping systems. Together with Alfa Laval's other marine operational centres in Aalborg, Denmark, and Tumba, Sweden, it will create an even stronger supplier to the marine and offshore industries.
The closing of the transaction is subject to approval from regulatory authorities.

Alfa Laval's acquisition strategy is based on the business concept of constantly optimizing the performance of our customers' processes. This means that Alfa Laval seeks to undertake acquisitions and form alliances that strengthen the existing key technologies by adding new solutions as well as complementary products and channels. Over the last five years, Alfa Laval has acquired some 20 companies with total sales, the year prior to the acquisitions, of about SEK 7.5Bn.

Trond and Frederik Mohn in better days

The sale of Frank Mohn to Alfa Laval didn't sit well with Trond Mohn's son Frederik. In a text message to the Bergen newspaper, *Bergens Tidende* (*BT*) . "I found out yesterday about the sale by Trond Mohn and I thought it was a cowardly negotiation action from my father. I apologize to all the staff, but especially the unions.

The Consumer Guide Series Goes Kindle

New e-book (only) editions of the magnetic flowmeter and vortex-shedding flowmeter Consumer Guides are available as Kindle e-books. More of the Consumer Guides will be available later in the year.

The consumer guides are the only independent consumer guides to the world's instruments, ranked by performance, size, and supplier.

These guides contain technical information including pointers for installation, such as fluid, piping, hydraulic, mounting, and electrical considerations.

Tables include the types of equipment available and selected features that are available from each supplier, along with their country of origin or source.

These guides are indispensable for designers, engineers, owners and end-users of instrumentation equipment. See where your instruments rank. These guides will help you with your next selection/purchase.

For more information, search "Spitzer and Boyes Consumer Guides" in the Kindle Store on amazon.com.

Flowrox Anounces New Technology to Manage Pipeline Scaling

Flowrox has introduced the Flowrox Scaling Watch, a wafer piece of pipeline that is inserted between two flanges. The device uses Electrical Capactance Tomography (ECT) technology, which allows operators to see inside piping systems without stopping the process or opening up the pipeline, and enables 3-D imaging and measurement of non-conductive media inside

process pipelines and tanks.

In addition, it uses a patented algorithm that creates a 3-D image of the process fluid and generates trend data as well as showing free volume inside the pipe and the growth of scale over time.

The Flowrox Scaling Watch can show the scale thickness, profile, growth rate over time, composition and free flow volume allowing engineers to understand areas where pipes are prone to scaling.

For more information visit www.flowrox.us.

Trond Mohn never managed to carry out the generational change in the business which his father, Frank Mohn founded. It became too difficult to admit that he had a clever son. We have not yet been contacted by Alfa Laval, and that says the most about Trond Mohn's procedures. Shame on you Trond!"

Frederik said his wholly-owned investment company Perestroika was considering strategies and financial alternatives to Alfa Laval's bid. "Perestroika notes that the right of first refusal to Perestroika by the transfer of shares in the group is not revoked prior to the bid," said the company in a release. "Perestroika will consider all alternatives, including legal action to stop the bid."

At a press conference last week, Trond said it was not true that his son had the right of first refusal, and it was sad that he opposed the sale. "It seems we are sorry," Trond said. "Beyond that, I hope you can understand that it stops there."

INSIDER will continue to follow developments as they unfold.

Hollysys Reactor Startup Successful

Hollysys Automation Technologies, Ltd., a leading provider of automation and control technologies and applications in China has announced that its proprietary HOLLiAS-N Distributed Control System ("HOLLiAS-N DCS") was successfully applied to Unit 1 of Yangjiang Nuclear Power Plant ("Yang jiang NPP") and went into commercial operation on March 26th, 2014.

Hollysys' HOLLiAS-N DCS is one of the high-end DCS products Hollysys developed for 1GW level nuclear power plant, it is also named as the "Center Nervous system" used for the nuclear power plant operation's automatic control and operational monitoring during its running process. It requires highly for its technology complexity and reliability.

Hollysys' proprietary HOLLiAS-N DCS successfully passed a series of 168 hours rigorous tests before the commercial operation of Unit 1 of Yangjiang NPP and it met all the parameters and delivered outstanding performance.

China now has 18 operational nuclear power reactors with the installed gross capacity reached 15.86 GW. Yangjiang NPP is the sixth nuclear power plant in mainland China. In addition to Unit 1 of Yangjiang NPP, Unit 2 of Yangjiang NPP is preparing for testing, and Unit 3 is installing and adjusting equipment. Unit 4, 5 and 6 are under construction, all 6 units are expected to be in operation in 2017.

> We are also glad to see the accelerated construction of nuclear power plants to address the environment protection related issues and to assist the sustainable development of the economy.

Hollysys' management commented, "We are very pleased that our proprietary HOLLiAS-N DCS is successfully applied in Yangjiang Nuclear Power Plant, which again validates our industry leading technology and capability. We are also glad to see the accelerated construction of nuclear power plants to address the environment protection related issues and to assist the sustainable development of the economy. With our solid position in China's nuclear power automation and control industry, we will continue to benefit from China's nuclear power development, and create value for our shareholders."

About Yangjiang Nuclear Power Plant

Yangjiang nuclear power plant is located in Yangjiang city in the west coast of Guangdong province. Yangjiang nuclear power plant is jointly invested by China General Nuclear Power Group Co., Ltd., China Power Investment Corporation and Dalian Construction Investment Group Co., Ltd. It is planned to build 6 nuclear power generating units. With Unit 1 went into opera-

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NEW HONEYWELL ULTRASONIC FLOWMETER HELPS ACHIEVE 'METERING INTELLIGENCE' FOR PIPELINE MONITORING

Honeywell has released its newest ultrasonic flowmeter designed to help natural gas producers improve efficiency by more-accurately tracking the movement of gas through pipelines. The USM GT400 Ultrasonic Flowmeter helps to reduce the amount of effort needed to maintain pipeline metering, which is critical given the skills shortage many oil and gas companies are facing as veteran engineers retire. Honeywell flowmeters are currently used in thousands of installations worldwide.

USM GT400

The USM GT400 measures the volume of natural gas at every stage of its movement, storage and utilization, which is important because the volume of gas transported via pipelines to consumers is metered for billing purposes.

"As the natural gas industry continues expanding, companies have a tighter margin of error when it comes to lowering operating and capital costs, improving uptime and reducing risks," said Tony Tielen, vice president of Honeywell Process Solutions' Engineered Field Solutions division.

"Accuracy is the key to staying within those margins, and the USM GT400 uses a unique blend of multi-path measuring technology, field-proven electronics, sophisticated diagnostics and a user-friendly interface to achieve true metering intelligence."

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Compliant with CEESmaRT technology – a secure, cloud-based solution for condition-based monitoring – the USM GT400 provides stability during flow perturbations thanks to its direct-path technology with six measuring paths on three levels. The paths are arrayed in an "X" pattern in horizontal planes. This orientation enables measurement of swirl, cross-flow and asymmetry, as well as transparent path velocity weighting per the Gauss-Chebyshev profile model for compressible fluids.

The USM's electronics are used to handle path-specific measurements while optimizing internal diagnostics. It includes speed of sound (SoS) and velocity calculations, signal processing and data storage capabilities, and can interface to flow computers, gas chromatographs and SCADA systems. The meter's transducer – which operates at standard frequencies of 120 or 200 kHz, and alternate frequencies are available for noisy environments – consists of piezoelectric crystals fully encapsulated in titanium housing for resistance to dirt. This unique configuration is field-replaceable under pressure.

Regulator noise has marginal impact on the flowmeter's measurements, thanks to Honeywell's proprietary, MID-approved detection algorithm, coupled with the unique transducer design. This combination extends signal amplitude for a high signal-to-noise ratio (SNR) versus traditional intrinsically safe transducers. Additionally, Honeywell's patented "live" Precision Adjustment maintains the measurement accuracy of the meter at all times.

Windows-based RMGView software allows monitoring the health of the flowmeter, alerts for upset conditions, and provides diagnostics for alarming. It also allows direct access to the electronic measuring system via a PC to read out and change parameters, represent measured values, and create test certificates and data sheets. For further information, please visit www.honeywellprocess.com