

# INSIDER

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Your key to the latest industrial automation and process control information

## Schneider's Foxboro/Triconex User Group Meets in Dallas— Upbeat and Looking Ahead

There is no truth to the rumor that Schneider Electric intends to sell off Foxboro M&A. Senior Schneider executives at the Foxboro/Triconex User Group Meeting in Dallas explained that it had been considered, and rejected out of hand.

Which is probably why Schneider's top Foxboro M&A and Triconex executives were positively bullish on the state of the company and the future.

The INSIDER learned that many former Foxboro, now Schneider, executives believe that Schneider made no mistakes at all in the integration of the Invensys companies they purchased into the Schneider organization. They offer as an indication, if not proof of this, that Schneider was able to retain nearly all the executive talent of the former Invensys companies. The INSIDER believes that only a handful of executives, including former Invensys CEO, Mike Caliel, left the company. Caliel's departure was expected, although the INSIDER has been informed that Schneider tried very hard to keep him at a slightly lower position than CEO.

Foxboro CEO Gary Freburger started the conference off by claiming that Schneider is now second in discrete automation (behind Siemens, globally) and fourth overall on



Foxboro CEO Gary Freburger

a global basis. This, coupled with a greater than 5% of revenue R&D spend, bodes very well for the combined firm.

Dr. Peter Martin, now one of five Schneider Edison Fellows, gave an inspiring sermon in which he said he believed in the power of big ideas, and that if we worked at it, we, the automation profession, could end world hunger.

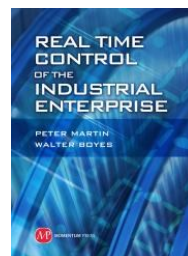


Dr. Peter Martin



Edgar Bristol and Greg Shinskey

He followed the growth of the automation business from the beginning to the present day, noting that industry's emphasis has shifted from transactional to real time control (as he and I discussed in our book, *Real Time Control of the Industrial Enterprise*) and that real time control is the province of automation. We are coming into our day, he pointed out. We can solve problems with real time control that we have not been able to solve any other way. He pointed out that in collab-

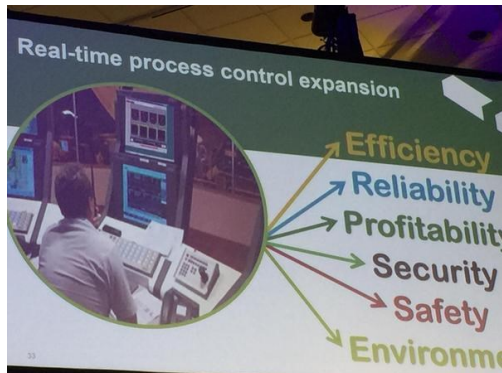


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## Cover Story: Schneider Makes No Mistakes for Foxboro and Triconex! (continued)

oration, we can solve major real world problems. We can mitigate environmental issues, improve climate change, and even end world hunger.

Schneider executive vice president Chris



Chris Lyden

Lyden talked about the history of Triconex, and celebrated 1 billion hours of Triconex systems without a failure on demand. Later, Freburger and Lyden introduced the brand new Triconex CX.



Grant LeSeuer, one of the technical geniuses behind Foxboro EVO, announced that Schneider had acquired Limeware, a Brazilian software company, whose product, Foxray, was designed to be a companion to EVO and earlier DCS software products from Foxboro. Foxray will be renamed System Auditor to

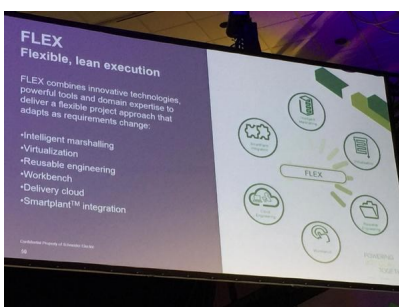


Grant LeSeuer

make clear what its function is in the DCS software suite.



Doing the Limeware deal...



Like other DCS companies, Schneider has evolved a name for its rapid design process. The Schneider version is called Flex (for flexible,

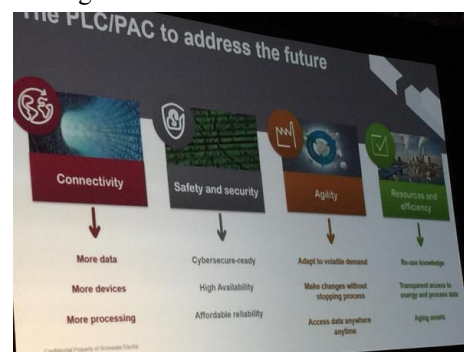
lean execution) and it was described as providing significant benefits for Schneider customers now and in the future, with intelligent marshalling, virtualization, reusable engineering, an engineering workbench, delivery in the cloud, and very tight integration to Smartplant™.

To continue to showcase the integration of the former Invensys companies into Schneider, Schneider Modicon executive Dafrir Lamdaouar introduced this year's refinements to the Modicon Model 580 ePAC. He noted that PLCs have



changed significantly since the original Modicon, and they are now solving issues that the original Modicon could never have done. Issues of connectivity, high data rates, safety and cyber security, agility and flexibility and service ease all are new challenges that the new Modicon 580 series has been designed to meet. Of course the most important takeaway from his peroration was that Schneider is a full service control and automation company, from the assembly line to the offshore platform, and anything in between.

The INSIDER believes that it is certainly foolish to continue to write off the two Schneider business units that have been created from the Invensys companies. Just as the software units have been fully integrated, so have the hardware units. With the competent management already in place, it is hard to see Schneider as anything but a formidable competitor regardless of who you are.



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## CSIA Meets In Uncertain Times, by David W. Spitzer

The 2015 Control System Integrators Association (CSIA) Executive Conference was held from 29 April through 2 May 2015 near Washington, DC. 75-80 percent of Certified and Partner member companies participated as compared to approximately 25 percent of Integrator member companies. Overall, less than half of all CSIA member companies were represented and attendance was



New CSIA CEO Jose Rivera

slightly lower than last year.

Jose Rivera has been CEO since March and will take over CSIA after

Rob Lowe's retirement on 1 June 2015. Jose



Bob Lowe is retiring

speaks four languages and has

decades of automation experience working in the US and other countries for Schneider, Emerson and Siemens.

Coming only eight days after the 2015 Measurement Control and Automation Association (MCAA) Industry Forum, this is an opportunity to highlight some of the commonalities and differences between these events --- both of which are ultimately focused on meeting the needs and expectations of their respective memberships.

The INSIDER made the following observations:

- MCAA membership is primarily manufacturers and representatives that tend to be more focused on process control.
- CSIA membership is primarily control system integrators (CSI) and the manufacturers that sell to CSIs that are more focused on automation.
- There does not appear to be much overlap in CSIA and MCAA memberships.
- CSIA Conference attendance was attended by about twice as many people as the MCAA Forum.
- MCAA had a higher percentage of its member companies represented at its Forum.
- The MCAA Forum had a theme that provided some underlying coherence to the various (potentially disparate) sessions.

**Overall, leading US and global economic indicators are generally pointing up, the world is in relative calm (although it may not seem so), employment is rising (companies are right-sizing), banks are lending, retail sales are rising, non-residential construction is improving, and deficit spending continues with no fear of austerity.**

—Alan Beaulieu (ITR Economics)

- The first CSIA speaker was an economist whereas the MCAA economist spoke near the end of the Forum. The economy is clearly important to the members of both organizations. However the INSIDER opines that the economy may more strongly affect CSI membership businesses --- hence the economist lead.

- The first MCAA speakers and later non-breakout sessions expressed their ideas about where the industry, technology and economy are headed. The INSIDER opines that MCAA members tend to feel that their livelihood is strongly affected by their ability to navigate change and foster innovation.

Both MCAA and CSIA provided breakout sessions that were relevant to their respective memberships. More sessions were presented at the CSIA Conference which was approximately twice the duration of the MCAA Forum. CSIA breakout sessions trended more towards bet-

ter practices.



Alan Beaulieu, ITR

The first speaker was Alan Beaulieu (ITR Economics) who presented an upbeat opinion on the economy. Alan predicts that the US will drive the world economy and suggested that companies spend more on their business to get ready. There are a lot of good things happening economically (not necessarily in employment or politics) such as a vibrant US economy and Europe turning around, but the rate of US growth is slowing. He suggests that while the media may forecast recession, but 2015 will be a year of slow growth. The next recession (on a 10-year cycle) will be relatively mild (3-4 percent) in approximately 2018-2019 after which the economy will again expand.

Lower oil prices driven in part by Saudi Arabia for political reasons are hurting Russia and may lead Putin to annex something else to foster nationalism and remain in power. The oil and gas industries represent about 10 percent of US industrial production (IP) and are in a positive trend. Oil prices are expected to trend up into 2016.

Overall, leading US and global economic indicators are generally pointing up, the world is in relative calm (although it may not seem so), employment is rising (companies are right-sizing), banks

## CSIA Meets in Uncertain Times (continued)

are lending, retail sales are rising, non-residential construction is improving, and deficit spending continues with no fear of austerity. Alan opines that a new US president will not change the forecast.

Companies are having problems finding qualified people to work with a good attitude so wages will likely rise. Hiring and retention will be different with millennials as manufacturing increases in the US. The overall cost of manufacturing in Mexico is now equivalent to the cost in China while that of the US is only about five percent higher.

Interest rates are projected to rise to 4 percent in 2018 (per FOMC opinions). The European Union will hold together and the euro will get stronger due to the strength of Germany. The outlook for Mexico is good with its growing middle class, proximity to the US, low debt per capita, and the

(slow) reduction of crime and violence due to drugs. Alan suggests that the prospects for Columbia look good and that President Dilma will fix the problems in Brazil. However Dilma's austerity program is running into political opposition to include from her own party. Given that Dilma is suspected (in some circles) as having been involved in scandal and dares not appear in public to avoid being booed and humiliated, the INSIDER has its doubts about whether Dilma has the political capital and/or the political will to effectively address the issues.

Health care spending in the US has stabilized but paying for baby boomers will be an issue. Japan will be the first major economy to hit the demographic problems associated with its significant aging population. An economic crisis could occur in 2030 due to a domino effect of the dumping of Treasury notes that cause the dollar to drop and hence, inflation.

The US economy is slowing but the chemical industry is looking up for about 10 years. The pharmaceutical industry is projected to grow unless the government interferes with new laws and regulations. Capital goods are slowing and the ITR Leading Indicator is going down but is still above zero. The US leading indicators are moving down (putting downward pressure on the stock market) but personal income is going up. The middle class is stable and upward class movement is the same as it was 15 years ago. In particular, children have opportunity if they are willing to work and have an education. Cheap oil is helping retail sales but will not last.

Canada tracks the US but has somewhat slower growth. Mex-

ico is tied to the US economy because 70 percent of its exports go to the US. Some automobile production is moving from Canada to the US. Growth in India is good but will slow in part due to problems such as its infrastructure, environment, banks... Alan has high hopes for India as they address their problems. Chinese business is entering Africa and making it difficult for the US companies.

Alan's overall message is that things are good and that companies should plan for higher wages, plan for higher energy costs in 2016, and avoid recruitment failure. The latter is important because recruitment failure can occur if the employee is:

- hired, trained and then fired
- hired, trained and then leaves (firing the company)
- hired, trained and does not leave (worst case)

Employees should be hired with a focus on ensuring a cultural fit in the organization. This can be accom-

plished in part by having a clear business purpose and recruiting to it. Enunciating a clear career path to employees and potential employees is also important.

The first part of Survey Results: How System Integrators Can Best Meet Expectations of End-User Automation Investments was presented by Craig Resnick (ARC Advisory Group).

- Automation trends include the use of common information infrastructure, convergence with IT, chopping layers out of the structure, convergence of hardware and software, collaboration, and using the cloud, big data, and analytics.
- ROI targets are typically 2-3 years but are trending toward one year with fast track implementation. Regulations and safety often drive projects.
- End-users assess project success based on capacity improvement, improved KPIs, production performance, analytics, prevention of failures, overcoming manpower reductions (often due to an exodus of talent), dashboard presentation, reduced quality deviations, and/or reduced environmental impact. It is important that there is one version of the truth where everyone gets the same data.
- End-user CEOs consider whether the CSI is certified, the system has smart condition monitoring, the ability of automation to differentiate the product, connectivity, scalability, maintenance costs, common presentation, convergence of process, logic and automation, migration to predictive maintenance, and virtualization (to reduce IT requirements).

End-users would like to have 24/7 emergency service, remote monitoring, PLC/PAC/DCS/IIoT/M2M migration, and connectivity due

## CSIA Meets in Uncertain Times (continued)

to the brain drain occurring as people leave plants --- putting more pressure on CSIs. Remote asset management allows machine information that went to PLCs to now go to the cloud where it can be monitored by the manufacturer.

Craig recommends that suppliers shift to products-as-a-service (PAAS) to effectively transform capital expenditures into operating expenses, provide solutions that incrementally innovates products, reduce downtime, leverage technology, collaborate with other suppliers, support remote monitoring, and reduce unscheduled downtime (an important end-user pain point).

Tom Braydich (Matrix Technologies, formerly at Campbell Soup) spoke about end-user benefits of CSI projects to include inventory reduction, decreasing obsolescence, scrap reduction, improved throughput, reducing expenses, enabling long-term continuous improvement, leveraging products, and providing process information that can be used to improve the process. Business drivers include information visibility, process agility, commonality of platforms, material velocity, better recordkeeping to comply with government regulations, alignment with MES/ERP to enable world-class performance, and the ability to track resources, status and history. Typical Campbell Soup projects required a 20 percent IRR (4 year payback) which is relaxed somewhat for infrastructure projects. Projects are considered based on food safety, regulatory compliance, quality, data collection, real-time visibility, and performance parameters such as cost reduction, yield, throughput, data entry, KPIs, conformance to orders and schedules, overall asset effectiveness, and improved availability. Services sought by end-users depend upon such items as plant philosophy, plant technician strengths, nature of the installation (such as mission critical), geographic location, and who "owns" the installation (IT, operations, engineering...).



Tom Braydich

Dominique Wille (LaFarge) said that existing CEOs are typically 50-70 years old with some exposure to automation that is usually obtained at one company. In contrast, tomorrow's CEO will be 30-50 years old with technical savvy and the ability to make high-speed decisions. This means that the new CEOs have a high degree of independence and can change suppliers at any time in a world of "uberization." Ub-

erization is the process of going to sleep thinking that your business will not change and then waking up to find that much of your business is gone. The implication is that the decision-making time scale and obsolescence have gotten faster so increased integration, increased speed, and low cost are needed.

**"Uberization" is the process of going to sleep thinking that your business will not change and then waking up to find that much of your business is gone.**

Strategies to confront these issues include providing a complete long-term solution, low installation requirements for end-users, and agile remote configuration. Putting everything into one system helps prepare for the future. Companies with multiple plants (LaFarge has

19 plants) should be able to do anything from anywhere. Today, LaFarge is able to add a new SCADA point in 1-5 minutes and a new business application in less than 1 day.

Benefits include increased reactivity to issues that arise, reduced costs, fast implementation, and increased data flow that can lead to competitive advantage. Selling these benefits was not done with PowerPoint slides but rather with the benefits of change, innovation, awareness, knowledge and desire (by making the client dream). Aside from the technical niceties, end-users will expect CSIs to provide full-service contracts from start to finish with 24/7 support.

CSIA offered a two-day workshop on a Common Sense Approach to Automation Upgrades and System Migration in addition to over 20 sessions relating to various CSI business and technical interests including cybersecurity, accountability, digital marketing, manufacturing intelligence, certification, benchmarking and selling internationally.

Having performed legal work (disclosure), the INSIDER found that two of the more eclectic presentations were made by lawyers Mark Voightmann and Stuart Buttrick, of Faegre Baker Daniels.

- War Stories: What I've Learned from a Decade of Bailing Out CSIs
- Yikes! The New Labor and Employment Law Developments that Every Control System Integrator Should Know

Finally, a tabletop exhibit was held with about 60 suppliers represented. This is one of the most valuable tabletop shows in the automation industry, because most of the attendees are business owners.

David W. Spitzer, PE is principal of Spitzer and Boyes LLC, a technology consulting company that is the publisher of the INSIDER.

## David W. Spitzer interviews Steven Pavloski of GE: Business Strategy Revolves around DATA

Steven Pavloski (GE Intelligent Platforms) was kind enough to provide the INSIDER with an insight into what appears to be a business strategy that brings extensive data collection capability to small and medium-sized companies that was previously available only to large companies.

In the current state of affairs, data from large mechanical equipment can be transmitted to the manufacturer's factory. This allows factory experts to monitor the health of the asset 24/7 and inform the end-user of any issues that may arise and advise action to mitigate their effect on equipment operation --- increasing uptime while reducing the possibility of equipment damage. However this service is typically only available to the largest of manufacturers. As a large manufacturer of mechanical equipment, GE can afford to develop and deploy this technology while smaller manufacturers cannot.

GE receives a significant amount of its margin from service and understands that there is a confluence of automation technologies (hardware) and IIoT/cloud technology. Therefore, GE decided to leverage its capability by making its data collection service available to small and medium-sized companies that do not have GE mechanical equipment --- and may not have any mechanical equipment at all.

From a hardware perspective, GE developed an electronic module (gateway) that can communicate with automation hardware. There are approximately 150 communication protocols available so it is quite likely that one of them will be compatible with both new and existing automation hardware platforms. The gateway module can then transmit encrypted data to the cloud where it can be collected, stored, and alarmed in addition to being available to the actual equipment manufacturers. This functionality can tie equipment to its manufacturer which can not only provide monitoring but also generate operating data that can be used to improve its equipment.

The GE business model is to provide a product-as-a-service (PAAS) where the gateway module is provided at no cost. This is attractive to end-users but is also particularly attractive to original equipment manufacturers (OEM) and control system integrators (CSI) who can build in this capability into their equipment for the price of a bit of space in the panel, some screws,

a few short wires, and the labor to install them.

However nothing is really free in this world so the data collection is provided for a monthly fee --- currently USD 100 per month per machine. GE is targeting OEMs and CSIs who can embed the gateway module into their equipment (whether specified or not) and provide additional long-term value to the end-user --- at effectively no cost.

The gateway module can communicate digitally with devices such as a PLC, PAS, and DCS, so the information in these devices can be monitored to include flows, levels, pressures, temperatures, equipment status, and the like --- independent of equipment manufacture. This capability effectively re-packages SCADA system functionality and re-defines SCADA architecture to be much flatter.

This hardware and business model is part of the PAAS trend that essentially transforms capital expenses into operating expenses. Further, it leverages technology that would be relatively expensive to develop so that it can be widely deployed at reasonable cost.

The INSIDER believes that this is an innovative extension of the trend towards the offering of PAAS products. Logically, there should be little resistance to implementing this functionality in some form --- whether from GE or from other suppliers. However whether individual OEMs and CSIs will see the light remains to be seen.

***Editor's Note: You may detect some similarity between what GE is trying to do and what IBM is also attempting. If these two big elephants are moving in the same direction, it is a good idea to join the parade.***

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## 3A hygienic conductivity system

Krohne has introduced a 3A and EHEDG approved inductive system for measuring conductivity, concentration and temperature, aimed at product analysis, phase separation and transition control in CIP plants, which can shorten transition phases and save cleaning fluids. The Optisys IND 8100 offers a conductivity measuring range from 50µS/cm to 1.0mS/cm, with 14 pre-set range/output combinations for convenient commissioning. Alternatively, the analogue output can be set freely via the touch display or via PC with optional configuration tool. The concentration output can be used to display the concentration of 4 factory set mediums/ranges, e.g. caustic soda, nitric acid, or a customer set medium, which concentration curve can be programmed via a 30 point linearization. The fast conductivity response time (T90 < 2 sec) allows quick identification of CIP reagents to prevent blending and save costs. The PEEK sensor can be used in concentrated acids or alkalis, using several different styles of hygienic process adapters.

There are 2 solid state relay contacts configurable as limit switches. The Optisys uses a touch-screen display for configuration. It features different selectable display modes and warnings: the background colour can be configured to show in three colours, white, green and red, steady or flashing, according to the alarm settings



## Buying Engineered Products via Catalog or OnLine

### On-line Catalogues and free delivery

Whilst this is necessarily reporting on experience in the UK, it seems that the growth of consumer internet on-line shopping and fast delivery is being reflected even in industrial instrumentation. Back in the dark days before the internet, there were industrial catalogue operations in the UK, for example Radiospares, now called RS Components, and for instrumentation in the 1990s there was Platon Flowbits. Deliveries from the 12,000 printed copies of the Flowbits catalogue were charged at a fixed fairly low rate – lower than the customer would pay for such a parcel, because Flowbits negotiated a standard rate with Royal Mail, per postal packet, based on the large consistent volume despatched.

With the growth of consumer on-line ordering, many new delivery companies have grown up and compete for such regular business, so the cost to the supplier comes down. This is now feeding through to smaller industrial customer purchases: until recently, RS Components charged a GBP4.95 fee for deliveries on orders for goods below GBP20 total, but now even this charge will be removed for orders placed on-line. With 70% of their orders now placed on-line, RS have invested heavily in their website service.

Premier Farnell have been offering free delivery for all orders from their cpc.co.uk operation, which seems to be a combined monthly mailed catalogue and on-line operation. There the delivery charge for orders under GBP10 seems to be regularly “suspended”, in fact every month on a temporary basis, presumably while further developing the customer base.



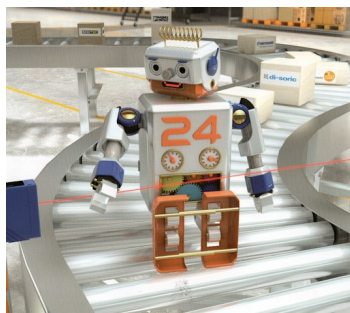
Catalog back cover

### Automation24.com

Moving back to the Automation industry, last month one of the UK magazines was radically heavier than usual. The April issue of “Process & Control”, a journal from Datateam Business Media, included an ‘insert’ of a new 170+ page printed catalogue, weighing over 600gms, describing the instrumentation and automation equipment available from Automation24, a one-stop catalogue operation originating from Essen in Germany. Assuming the *Process & Control* circulation has declined a little since 2013, when it was quoted as an average of 11,246 each issue, this still represents a considerable investment.

The website for Automation24 started live operations in June 2012. The MD, Stefan von der Bey, says they offer customers more than 1900 items from well-known manufac-

turers such as ifm electronic, Phoenix Contact, di-soric, Siemens, Eaton, Wago, Murrelektronik, Wika, Datasensor, microsonic, Son-tec, Fibox and Cube (Murrplastik), as well as high-quality Automation24 branded products. Recently further products for the control cabinet have been added, such as the brand new Siemens Logo 8 small controller series, and load circuit breakers from Murrelektronik. Automation24 see their product offering as suited to the requirements of small and medium sized companies. They offer phone support services from Germany, on a toll-free number valid



Automation24

for use from the UK as well as 12 other European countries. They do charge (GBP8.95) for the standard delivery to a UK customer, which is presumably from Germany, and uses UPS.

The catalogue emphasis shows up with the first 40 pages covering position sensors. The next 40 pages cover all process sensors, for flow, pressure, temperature and level. There are a significant proportion of products manufac-

tured by ifm electronic, and their colour scheme seems similar. So it is possibly not a coincidence that the ifm HQ is within 3km of the Automation24 base office in Essen.

### Parting shot:

Interestingly, the back cover of the April issue of *Process & Control* featured an advert for RS-online.com, which mentioned their 100,000 automation and control products from suppliers such as ABB, Schneider Electric, Omron, Siemens, Phoenix Contact and SMC. Then the inside front cover slot was taken by Omega.co.uk, who mentioned 100,000 products on-line, including 10,000 temperature sensors. The special offer from Omega this summer is for free shipping, but only on all orders for goods to the value of over GBP200.



Nick Denbow is European Editor of the Industrial Automation and Process Control INSIDER. He has had a long career in PR and Marketing in the Automation Industry, and blogs regularly at “Nick Denbow’s Industrial Automation Insider Blog” <http://www.nickdenbow.com>.

## More Sensors Designed for IoT— Endress+Hauser updates Memobase for Memosens

### Liquid sensor calibration system

Memobase Plus calibration software from Endress+Hauser creates an audit trail for pH, oxygen, conductivity and chlorine sensors, that meets FDA requirements. It turns a PC into a calibration laboratory, providing complete traceability of test solutions, sensors, calibrations and measurements.

Calibration reports are generated automatically as PDF documents, or as CSV files that can be exported to Excel or similar software for further processing. An audit trail, user administration settings and passwords guarantee security, and make Memobase Plus FDA 21 CFR Part 11-compliant.

From the sensor to the database, and then...maybe to the cloud?

The software is capable of managing four different sensor types simultaneously: pH (glass and ISFET); dissolved oxygen; ORP, conductive and inductive conductivity; and chlorine. It provides guided, step-by-step instructions for the correct calibration procedure required by each sensor. A Live-Graph function provides visual control during the calibration, enabling appraisal of sensor condition. It also provides full traceability of all testing equipment and reference solutions. “As found, as left” measurements can be performed to assess measurement uncertainty before calibration.

Memobase Plus constantly monitors E+H Memosens sensors and keeps logs to document the entire sensor life cycle. It maintains time stamps for adjustment and deactivation, with explanations, an operating hours counter to help analyze sensor condition, and a calibration timer to

help schedule calibrations. Operators can view a numerical and graphical display of primary and secondary measured values with a zoom function and a time bar.



Reports include all the information required for sensor calibration, maintenance and audit trails—including old and new calibration values, delta values, and calibration history charts with slope and zero point. Reports are subdivided into Measure, Calibrate, Sensors and Reference Solution

categories for fast retrieval of specific data. A sorting and filter function helps users find data more quickly. Reports are available on the PC screen, and can readily be exported.



E+H Memosens pH Sensor

For security purposes, as defined in 21 CFR Part 11, the computer-generated audit trail function is protected from intentional or accidental modification. The audit trail tracks operator entries including operator name and ID—along with any actions taken that might create, modify or delete records. The entire audit trail is retrievable throughout the record’s retention period, and users cannot modify or delete audit trail information.

Access requires an electronic signature consisting of a unique Identification-Password combination. The software can be configured to force users to renew their password periodically, such as every 30 days. Per 21 CFR, Memobase Plus is a closed system,

with access restricted to only those persons designated to handle the unit or who are responsible for the contents of the recorded data. System access and modification are allowed only by person(s) with “Administrator” rights.



## Yokogawa USA Gets New CEO in Very Quiet Transition; PAS Gets into Cyber in a Big Way

A somewhat delayed press release was issued May 8th, announcing a big management change at Yokogawa America. This has been in the works for over a year, and the INSIDER learned about it last year, but agreed to not disclose what was happening until it was official. Note that Chet Mroz, the outgoing CEO is not retiring. He has become a chief advisor to the President of YEC, sort of in the way that the Japanese Shogun would retire, but continue to be a force.

Yokogawa Corporation of America announced that effective April 1, 2015, Daniel L. Duncan has been named President and Chief Executive Officer of Yokogawa's North American operations. In this position, Mr. Duncan is responsible for all day-to-day operations in North America. Since his predecessor, Chet Mroz, had been responsible for all North and South America operations, it is not clear what has occurred in the South American territory.



New Yokogawa USA CEO  
Daniel Duncan

Mr. Duncan began his professional career as an engineer with Georgia Power Company. Then he led a systems integration firm focused on both discrete and process automation projects. This was followed by roles in industrial distribution and at Honeywell Industrial Automation and Control. Mr. Duncan joined Siemens Energy & Automation in 1997 holding various management roles in automation marketing, regional and national sales. Mr. Duncan's most recent responsibilities were as VP and General Manager of the Oil & Gas Division of Siemens Energy, Inc. based in Houston, TX and responsible for the Americas region. His divisional portfolio included



Chet Mroz

Chet Mroz, former President and CEO of Yokogawa Corporation of America, has transitioned into the role of Executive Advisor for Strategy and Innovation, where he will support the globalization efforts and the industrial automa-

tion growth initiatives for Yokogawa Electric Company. "Since July of 2014, Daniel has been our COO," said Mroz, "and has rapidly assimilated our structure, capabilities, resources and developed insightful plans to build upon them for Yokogawa Corporation of America's continued growth in a more challenging market."

Mroz continued, "His extensive knowledge and experience in the industrial automation, process and energy industries and professional engineering services businesses will contribute considerably to Yokogawa's growth and presence in the North American region."

"I am very excited to join a company that is celebrating 100 years of innovation," Duncan said. "We continue to adhere to our founder's principles of providing high quality products that contribute to the development of the world."

Duncan's deep experience in Oil and Gas would lead the INSIDER to believe that Yokogawa will continue to put emphasis on that market segment, despite the softness generated by the crash of oil prices over the past six months. "As can be seen at the Offshore Technology Conference (OTC) this year," Duncan noted, "we have developed deep relationships with customers that value these principles and trust us to develop and implement solutions critical to their business. We will continue to find new ways to add value to those customer relationships and focus on connecting with more customers who can benefit from our expertise and capabilities."

## PAS Gets Into Cyber in a Big Way

PAS has been moving into cyber security for two years now, and they've announced a version of Integrity specifically for Cyber Security Assets. This is accompanied by the creation of a separate business unit. David Zahn, the CMO at PAS, will burn his candle at both ends by leading the new business unit in addition to his own marketing responsibilities.

PAS has done an intelligent thing here. Instead of promising the sun, moon, and stars to their clients, PAS has simply produced a version of their justly famous Integrity software suite that is aimed directly at cyber security. It will, according to Zahn,

## PAS Gets Into Cyber in a Big Way (continued)

"Gather and maintain an accurate inventory of cyber assets, Establish a cyber security configuration management policy, Manage change by monitoring for unauthorized updates to cyber asset configurations, and Implement a program for system backup and recovery."



PAS CMO David Zahn

Clearly it is meant to be used in combination with network security methodologies as well as social engineering and client employee cyber sensitivity training. But with this software, PAS covers the bases, home plate and most of the outfield.

This is important in light of the hacks in the Middle East in the past couple of years, that destroyed thousands of computers, without any serious way to re-

cover their data or programming. Even if an attack is successful, with PAS's new software package, properly installed and maintained, the user can recover from the attack as soon as new equipment is installed.

"Our company has implemented a multi-layered security architecture that includes PAS Cyber Integrity software to protect our critical control assets and address compliance requirements," said a general manager at a major power company in the southeast United States. "With the new release of Cyber Integrity and its additional commitment of resources, PAS continues to provide the support that plants need to become more secure against the effects of a cyber attack," the unnamed executive concluded.

PAS Cyber Integrity hardens security for the most vulnerable assets in a plant – the industrial control systems. At the same time, it automates internal and regulatory compliance reporting while reducing associated efforts by up to 90 percent. Cyber Integrity works across the heterogeneous control environment found in plants providing enterprise scalability and performance.

Cyber Integrity is a proven solution built upon PAS Integrity platform, which today manages configurations for more than 20,000 automation assets across more than 400 industrial plants throughout the world. The latest release of Cyber Integrity enables industrial companies to recognize the impact of a cyber attack on control systems more quickly, initiate an incident response that matches the risk level, and provide compliance-ready reporting that meets business and regulatory requirements.

"The cyber threat to plants and their industrial control systems is

an existential one," says Eddie Habibi, chief executive officer and founder at PAS. "The confluence of growing interest in the Industrial Internet of Things, increasing frequency and sophistication of ICS cyber attacks, and the opportunity that a control system presents a hacker, creates significant risk to plant safety and profitability. Mitigating this risk by keeping hackers at bay is why we have added a new business unit within our company, and it is why we have provided the new capabilities within Cyber Integrity."

Zahn and Habibi enumerated the major features:

**Cyber Inventory** – maintain a complete inventory of control system cyber assets regardless of connectivity (e.g., TCP/IP or serial). Inventory data includes I/O cards, firmware, installed software, and other information typically buried deep within the configuration of proprietary systems.

**Configuration Baseline and Policy** - capture the operational and security configuration of assets including historical versioning for compliance or disaster recovery. Configuration policies maintain security and operational standards to minimize risk and maximize reliability.



PAS Founder Eddie Habibi

**Configuration Monitoring** – detect changes to inventory, asset configuration, and logical and graphical files. Configured risk profiles guide appropriate workflows for operations, compliance, alerting, and incident response.

**Management of Change** – perform specific security operations such as patch assessment, change testing, change implementation, configuration policy definition, asset disposal, and other review/approval processes. Workflows trigger automatically based on configuration parameters.

**Backup and Recovery** – implement safeguards to protect against a worst-case scenario and lessen the impact to production.

**Reporting** – produce configurable security and compliance reports including inventory, configuration details, change history, and workflow documentation.

# Industrials at EPG: Focus on the Longer-Term Reflects Near-Term Uncertainties

By Mark Douglass, Longbow Research

**INSIDER**  
INDUSTRIAL AUTOMATION & PROCESS CONTROL

## Health Watch

### Guest Column

**Editor's Note:** *The Electrical Products Group meeting is an annual meeting where C-level executives from many of the companies in the automation industry, and other, allied industries, meet the analysts and present their corporations in the best possible light.*

*Here's the list of corporations and presenters (core automation companies in bold):*

Monday, May 18, 2015

**Honeywell International**  
**Dave Cote Chairman & CEO**

**Pentair**  
**Randy Hogan Chairman & CEO**

**3M**  
**Inge Thulin**  
Chairman, President & CEO

**Danaher**  
**Tom Joyce President & CEO**

**Stanley Black & Decker**  
**John Lundgren Chairman & CEO**

**Roper Technologies, Inc.**  
**Brian D. Jellison Chairman, President & CEO**

**WESCO**  
**John Engel**  
Chairman, President & CEO

**Eaton Corporation**  
**Sandy Cutler Chairman & CEO**

**Rockwell Automation**  
**Keith Nosbusch Chairman & CEO**

**SPX**  
**Chris Kearney Chairman, President & CEO**

Tuesday, May 19, 2015

**Royal Philips**  
**Frans van Houten CEO**

**Triam Partners**

**The global macro environment for industrials is relatively unchanged in April and May from 1Q.**

**Nelson Peltz** Founding Partner

**Textron**  
**Scott Donnelly Chairman & CEO**

**Xylem**  
**Patrick Decker President & CEO**

**Clayton, Dublier & Rice**  
**David Wasserman & John Krenicki Partners**

**United Technologies**  
**Greg Hayes**  
President & CEO

**ABB**  
**Ulrich Spiesshofer CEO**

**Dover**  
**Bob Livingston CEO**

**Ingersoll Rand**  
**Michael W. Lamach Chairman & CEO**

Wednesday, May 20, 2015

**Tyco International**  
**George Oliver CEO**

**Colfax Corporation**  
**Steven Simms President & CEO**

**Hubbell**  
**David Nord President & CEO**

**W. W. Grainger**  
**James T. Ryan**  
Chairman, President & CEO

**Emerson**  
**David Farr Chairman & CEO**

*Webcasts of their presentations can be found at [2015 EPG Conference Webcasts](#).*

**Here is the commentary on the conference from Mark Douglass and Eli Lustgarten of Longbow Research:**

The EPG Conference was filled with more commentary on longer-term strategies than current details. The underlying tone was the increased level of uncertainty that exists in the near-term. The key takeaways from the meetings include:

**The short-term outlook is mixed and uncertainty remains.**

Continued market growth is expected in the U.S., slowing growth in China and modest growth in Europe.

- The global macro environment for industrials is relatively unchanged in April and May from 1Q.



# Industrials at EPG: Focus on the Longer-Term Reflects Near-Term Uncertainties (continued)

**INSIDER**  
INDUSTRIAL AUTOMATION & PROCESS CONTROL

By Mark Douglass, Longbow Research

## Health Watch

Guest Column

- Some, like ETN, actually saw an acceptable March and April, and DOV saw a small improvement in April (hopefully the end of de-stocking in oil & gas) but companies are by no means ready to call a trend.

- Non-res trends in the U.S. appear healthy – not gang busters, but steady growth that should extend into 2016.

- Oil & gas is still rough with minimal visibility, though prices are stabilizing. Upstream spending remains weak and not much visibility into the impact on downstream, though the expectation is for softness as the rest of 2015 unfolds.

Companies are hopeful that 2H gets a little better and that there was an overshoot on the downside in 1H with inventory de-stocking.

**Most presenting companies are now settling on a forecast that the next three to five years will likely see slower economic growth.**

- Given the slow growth environment, companies are focused on what they can control: operations and capital allocation with a clear bias towards acquisitions.

- The companies are adopting a strategy of portfolio optimization. Most have some sort of business operating system to drive above market organic growth and margin expansion. Business profiles

are becoming more focused on striving for sustainable strong margins.

- Cash flow is king with virtually all companies targeting Cash Flow exceeding Earnings.

**Companies are getting a lot of**

**Companies are hopeful that 2H gets a little better and that there was an overshoot on the downside in 1H with inventory de-stocking.**

**questions on M&A, and their willingness to stretch for growth.**

The pricing environment remains relatively expensive for properties but companies are committed to staying disciplined (at least that is what management teams are stating). Dividends will continue to increase and companies will buy back shares if M&A does not look promising.

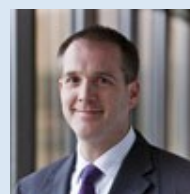
**Lots of questions on pricing; so far most seem to be holding the line ex- oil and gas.**

Energy is tough with letters from customers asking for price concessions according to PNR. Companies are sharp-

ening their pencils and broadening project scopes in order to provide more value add, but there is still some give on pricing.

**With the presence of activists and private equity, there was more talk of aligning management compensation with performance.**

Companies that have been touched are clearly more sensitive to this issue.



D. Mark Douglas, PhD, CFA, is Equity Research Analyst with Longbow Research in Cleveland, Ohio.

He has specifically deep understanding of the automation space having worked as a plant engineer prior to becoming an industry analyst.

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## Motor Efficiency Rules in Europe: WEG Has New Switchgear

The European (EU) legislation designed to increase the efficiency of industrial electric motors has had a significant effect on motor design, with higher performance efficiencies being required in various stages. This has also boosted the use of Variable Speed Drives, which can be used to optimize system performance.

Now the effects are being felt in the design of motor starters: or at least the marketing campaigns of some

starter suppliers are implying that certain other older designs of single speed starter will not be capable of operating properly with the latest IE3 designs of motor.

This year the regulations in Europe require that all new single speed 3-phase industrial motors in the power range 7.5 to 375kW must meet the IE3 efficiency standard in order to be put into operation, or if they only meet the lower IE2 efficiency standard, then they can only be used if equipped with a variable speed drive controller. In 2017, they regulations will be tightened further, and the same ruling will also apply to motors in the power range 0.75 to 7.5kW as well.

The motor manufacturers have responded to this requirement by redesigning their IE2 motors with a higher copper content, ie more copper in the stator, which reduces the power losses by around the required 15% compared to the previous limits. In doing this, the electrical resistance of the motor windings is reduced. The other design changes involve developing thinner silicon steel laminations in the iron cores, optimizing air gaps, putting larger conduc-

tors in the rotors and improving cooling systems. The result is then that the IE3 motors are more inductive, meaning they usually have lower operating currents, but higher in-rush currents and starting currents than IE2 motors. This is where certain current single speed

starters are claimed to be inadequate, they cannot handle the higher initial currents.

### WEG Switchgear

WEG is one of the largest global manufacturers of electric equipment, and produces a wide range of products, including LV control gear,

generators, gear motors, inverter drive systems, soft starters, and LV/MV and HV motors. WEG's comparison tests with IE3 and IE2 motors having the same rated power have demonstrated that - in the lower power range - the starting current of an IE3 motor is about 5% higher and the peak inrush current about 20% higher.

"Although using premium efficiency motors is now mandatory, the choice of low-voltage switchgear, such as motor protection circuit breakers, is still left to the user. To ensure reliable equipment operation despite higher in-rush and starting currents typically found in IE3 motors, users should always consider IE3 compatibility when selecting low-voltage switchgear," says Zoltan Schaaf, Manager Low Voltage Switchgear at WEG in Germany. "As a leading manufacturer of premium (IE3) and super-premium (IE4) electric motors, WEG has developed extensive expertise in IE3 equipment conformity and all of WEG's current switchgear and protection devices can be used without restriction to ensure the reliable operation of IE3 motors."

WEG have developed their IE3-compliant switchgear to ensure excellent reliability when operating IE3 high-efficiency mo-



WEG Switchgear is IE3 Compliant

### UR robot acquisition

Teradyne Inc, a supplier of semiconductor and wireless test equipment, has announced the acquisition of Universal Robots, the Danish pioneer of collaborative robots, for \$285m, plus \$65m if certain performance targets are met, extending through 2018.

Universal Robots is the leading supplier of collaborative robots: low-cost, easy-to-deploy and simple-to-program robots that work side by side with production workers to improve quality and increase manufacturing efficiency. Collaborative robotics is a \$100m segment of the industrial robotics market growing at more than 50% per year.

"Universal Robots is the technology and sales leader in the fast growing collaborative robot market and we are excited to have them join Teradyne," said Mark Jagiela, President and CEO of Teradyne.

The Danish Growth Fund, (Vækstfonden), has been the company's main investor since 2008. Since then, the company has seen substantial growth, with their user-friendly robot arms sold in more than 50 countries worldwide. Average payback period for UR robots is the fastest in the industry at only 195 days.

Headquartered in Odense, Denmark, UR has subsidiaries and regional offices in the USA, Spain, Germany, Singapore and China. Globally, they employ over 150 people, and achieved a record 70% revenue growth in 2014, reaching over \$38m, with profit more than doubling from the prior period.

## Motor Efficiency Rules in Europe: WEG Has New Switchgear (continued); Ultrasonic Flowmeter Boost for Titan

tors, despite higher in-rush currents compared to IE2 motors. As a result of using the new switchgear, users can be confident their drive system provides the highest levels of energy efficiency over a long service life, enabling them to reduce the total cost of ownership (TCO) while complying with current environmental regulations.

The WEG tests also demonstrated that their motor protection relays in the RW series (bimetallic) and new RW--E series (electronic) are not affected by the IE3 motors' higher starting or in-rush currents. Additionally, WEG has upgraded its CWM, CWC and CWB series of contactors to accommodate these higher in-rush and starting currents, without any adverse effect on the mechanical or electrical service life.

Of all motor protection devices, motor protection circuit breakers are particularly exposed to the higher in-rush and starting currents of premium efficiency motors, due to their high sensitivity. With this in mind, WEG has raised the trip level of its MPW series of motor protection circuit breakers from 12 times to 13 times the maximum rated operating current to ensure IE3-compliance, and is planning to raise it further to 15 times the maximum rated operating current to meet future IE4 regulations.

### Ultrasonic Flowmeter Boost for Titan

It was way back in 2010 when Titan Enterprises, from Dorset in the UK, launched their novel design of ultrasonic time of flight flowmeter, the Atrato.

Titan is a specialist in small bore and low flow me-



Atrato Ultrasonic Flowmeter

ters, in other words in pipe sizes below 2", where normal ultrasonic flowmeters fear to tread.

So their straight tube, short length obstructionless flowmeter was designed with 1mm, 2mm and 6mm bore flow tubes, covering a range of flows from 2mL/min to 20L/min.



Standard Atrato unit

Because it uses a plane transmitted wave covering the whole flow profile, the meter is independent of Reynolds number effects, and maintains accuracy over a wide turndown.



Atrato Water Meter

### Finding the applications

Five years on and the Atrato has found a wide range of applications in many different industries around the world – some in the most unusual niches.

In a recent prize draw competition to find the most interesting application, entries came from 29 countries, and included the metering of liquid sodium as a coolant, and monitoring the flow from an oil well.

Another meter measures the seawater flow to a lobster production plant, situated 4km inland from the sea.

### Round Solutions' wireless 'PingPong' IoT edge node platform connects field devices to the cloud

Round Solutions has launched its wireless PingPong IoT edge node hardware platform for connecting field devices to the cloud. Round Solutions develops hardware and services for Internet of Things (IoT) and offers component solutions for wireless machine-to-machine (M2M)

communication: modules, antennas and design-in services. Round Solutions creates the necessary technological preconditions for developing new IoT-based business models - such as for applications within Industry 4.0.

The RTOS supporting small form factor board with powerful Microchip PIC32MZ 32-bit MCU and a high-speed cellular Telit module is based on a modular hardware design principle that simplifies the integration of custom-specific applications and communication standards into a single solution platform. Target applications range from cloud-connected oil tanks and intelligent waste bins up to cloud-connected gateway systems for manufacturing robots.

"Our PingPong platform offers software engineers an application-ready, pre-validated PingPong data exchange mechanism which eases the IoT integration of any field device," explains Ben Hoelke, CEO of Round Solutions. "With the supplied

(Continued next page)



## Ultrasonic Flowmeter Boost for Titan, (continued)

Higher temperature versions have been produced, and one unit monitors hot water flows at up to 200 °C in heating systems.

With a lot of interest coming from simple metering and control applications for water flows, in sub-metering and heat trans-



Atrato Intelliport Medical Flowmeter

fer applications, Titan has built a half inch bore trial unit for water industry testing, which is only 110mm long, and can attain a 2% accuracy over a 250:1 flow range. Atrato offers the potential of high performance, low power and low cost for this application, so they are seeking a partner to help with the commercial exploitation.

Particular success has also been found in measuring the low flows common in medical applications, and various OEM designs have been produced to meet these requirements.

One project in conjunction with CRISI Medical Systems of San Diego, California – part of Becton, Dickinson and Company – has produced a flow sensor for use with the BD Intelliport medication management system for manual intravenous (IV) bolus injections.

After testing an Atrato ultrasonic flowmeter - CRISI took the basic design, and with help from Titan, miniaturised the flowmeter assembly and made it into a disposable unit.

Titan has granted exclusive global rights to

BD for use of their Atrato technology in IV bolus injections.

The Intelliport system is the first and only solution to provide real-time drug identification, dose measurement and allergy detection at the point of injection while wirelessly sending captured information directly into the patient's electronic medical record (EMR) following medication administration.

### Process Control

Not many of the current Atrato applications can be regarded as used for standard industrial process control. But the latest Titan designs, with a ruggedized stainless steel housing sealed to IP65, and offering the standard Atrato fast response time, wide

flow range and 0.5% accuracy, are bound to attract more interest.

Meanwhile, the interest generated by the Atrato is maybe one of the factors that has resulted in a doubling of the numbers of meters sold to export markets in their last financial year. Production increased to over 45,000 meters, shipped to 34 countries.

Their flowmeter range includes oval gear meters and turbine meters, in addition to the Atrato.

For Titan the major market sectors are medical, chemical, petrochemical, food and drink, laboratory and pharmaceutical, with the biggest growth in demand reported to be from China, Denmark, Ireland, Singapore and the USA.

## Round Solutions Ping Pong IoT Edge Node Platform (continued)

Round Solutions Open Source PingPong Software Development Kits the platform can be configured for nearly all IoT/M2M applications, such as sensor reading, asset tracking, routers, measurement technology, telemetry and security control. Thus, Round Solutions' PingPong offers companies wanting to transfer their data to IoT cloud-servers a complete solution including software libraries and source code."



Round Systems Ping Pong

The PingPong hardware platform offers high-speed cellular modules for IoT connectivity as well as numerous interfaces to the field – which can also be controlled via the cloud. The standard interfaces include Ethernet, USB and CAN as well as a high-precision GNSS (Global Navigation Satellite System). Developers can add expansion cards to create application scenarios. Application-ready expansion cards are available for WLAN, Bluetooth, I/O, Iridium satellite communications, ISM/RF, SigFox, NFC/Rfid and camera connectivity.

## Vega Produces a New Type of Radar Level Detector for Solids

### A 'Universal' bulk solids level sensor?

Earlier this year Vega introduced the VegaPuls 69, a new higher frequency bulk solids level measurement radar.

Because of the 79GHz operating frequency, the radar allows tighter focusing of the transmitted beam, more easily avoiding interference from internal structures inside vessels: plus the new generation of microwave components now available for work at these frequencies means that even the tiniest reflection signals can be measured.

Previously difficult to measure products with very poor reflective properties, such as high purity plastic powders or wood chips, can now be measured with confidence.

With a measuring capability from one or two metres...right up to 120 m, and an accuracy of  $\pm 5$  mm, the VegaPuls 69 achieves a step towards the goal of the level sensor that can cover all applications, including those difficult

**...the VegaPuls 69 achieves a step towards the goal of the level sensor that can cover all applications, including those difficult ones.**

ones. It also has a response fast enough to perform well on rail cars and conveyors.

Jürgen Skowaisa, the Radar Product Manager for Vega, says the high performance

79GHz radar components have been developed recently for use in the automotive industry: Vega, with the experience of over 100,000 radar sensors

over the last ten years in bulk solids applications, mainly working at 26GHz, decided their performance warranted a new product design.

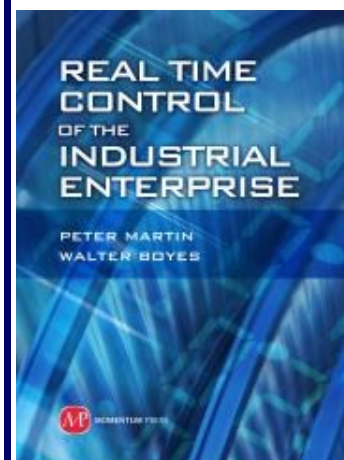
The VegaPuls 69 sensor specification includes a 75mm/3" antenna size, a measuring range of up to 120 meters/365ft and an accuracy of  $\pm 5$  mm: the sensor is so sensitive that even the smallest of level signals can be detected. Vega sent a large number of trial sensors out to their sales forces around the world, who chose installations where they had had problems with the lower frequency sensors: trials on some of these most difficult applications showed that poorly reflective products in very dusty applications with uneven surface profiles - like fine ash, cement, flour, coal, plastic powders and wood chips, could be confidently measured using this VegaPuls 69 technology, with no loss of signal and minimal false echoes. There is sufficient performance capability for the most diverse tasks; from level gauging down mine shafts, to measurement in small hoppers or bulk containers: it even has fast enough reactions for level/position control on conveyor tripper cars. The VegaPuls 69 solids level sensor takes radar technology very close to being a universal solids level sensor.



Vega's Jürgen Skowaisa

of  $\pm 5$  mm, the VegaPuls 69 achieves a step towards the goal of the level sensor that can cover all applications, including those difficult

## SMART MANUFACTURING? INTERNET 4.0? READ THE BOOK!



In the last fifty years, almost all of the productivity gains in manufacturing have come from better automation and control of the processes: continuous, batch, hybrid, and discrete. The secret to sustainable manufacturing is better control. So, why aren't the theories that have led to enormous gains in productivity being used above the plant level? This book explains how better controls can be applied to the supply chain, and to enterprise financial management. It provides managers the insight and tools for achieving a fully integrated automated manufacturing enterprise, from the technical side to the business management side. It is helpful to anyone seeking to bring the non-technical parts of a manufacturing operation in line with the already automated production, inventory management, and plant management. The book is available from [www.momentumpress.net](http://www.momentumpress.net), Amazon and other retailers.

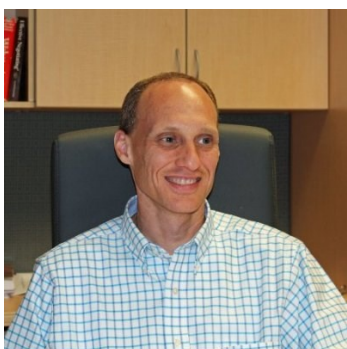
## TiPS and aeSolutions Announce Strategic Partnership

TiPS Incorporated has entered into a strategic partnership with Applied Engineering Solutions Inc. (aeSolutions), a recognized specialist in process safety consulting and engineering. The new alliance broadens the abilities of both companies to deliver individualized high-caliber alarm management software and service solutions to production facilities.

**As a critical layer of protection, alarm configurations need to be monitored and maintained within the constantly changing production environment.**

ever, clients using legacy, multi-vendor, or enterprise fleet control systems can look to aeSolutions to provide alarm management services sup-

“Often companies using alarm management are sold an expensive ‘one method fits all industries’ solution,” commented Bobby Weibel, President of TiPS Inc. “Our partnership is focused to lower the financial hurdles



aeSolutions' Ken O'Malley

that facilities face to streamline operations. Customers using Log-Mate® have a real time platform to track, analyze, and alert on the alarm system health. Our combined expertise and targeted approach to alarm management solutions will increase customer ROI and provide them the solution that suits their needs.”

“This partnership with TiPS enables us to augment our alarm management lifecycle service,” added Ken O'Malley, Executive Vice President of Engineering Technology. “Now more than

supported by a comprehensive alarm management software platform with universal connectivity. As a critical layer of protection, alarm configurations need to be monitored and maintained within the constantly changing production environment. Our clients' alarm system performance will certainly improve with the automated KPIs, configuration auditing, record annotation and event notification we can now provide.”

Merging the core capabilities of each company presents customers with one central resource intimately knowledgeable with the real world application of both ISA 84/IEC 61511 and ISA 18.2/IEC 62682 standards to deliver distinctive alarm management strategies and software. This relationship will result in a seamless and more cost effective solution at a greater value for the customer.

## Foxboro Introduces S Series Intelligent, Two-Wire Pressure Transmitters...IoT Ready?

Schneider Electric has introduced the Foxboro Field Devices' pressure transmitter "S" series models IDP10S, IGP10S and IAP10S. These HART® Smart intelligent, two-wire pressure transmitters feature patented FoxCal technology. "Foxboro's FoxCal multiple-calibration technology eliminates the need for a traditional single-span calibration at application-specific pressure ranges," said Foxboro S Series Product Manager Patrick Cupo. "This enables 11 calibrated ranges to be stored in the onboard preset in the factory cover the full pressure range of the transmitter."

All the Foxboro S series two-wire pressure transmitters feature two “time-in-service” clocks. The time-in-service feature enables advanced diagnostics monitoring. "It's similar to how an odometer enables a car owner to track the cumulative number of miles driven, just as a trip odometer tracks point-to-point mileage," Cupo explained. In addition, the user days value can be reset to zero using a HART communicator, a PC-based configurator, or the optional local indicator. “Each S series shrinks a company's stockpile of less-intelligent transmitters by two-thirds.” Foxboro's S series comes with an LCD indicator with on-board push-buttons. "The S series also features a best-in-industry, five-year standard warranty," Cupo said. The INSIDER notes this as another IoT ready design...



## Africa Automation Fair Lights Up Industry Scene in South Africa

On the morning of 5 May, Africa Automation Fair opened its doors and delivered emphatically on its promise to be the largest most comprehensive showcase of industrial control technology in the southern hemisphere. A record



Africa Automation Fair 2015

number of nearly 4500 local and international delegates were treated to an exhibition of the latest instrumentation and automation technology from the some 79 exhibitors who had set up shop in the 6000 square metre display area. It was a cosmo-



Yokogawa Celebrates Its 100th Birthday

politan melting pot that brought smart people together for a three day feast of technology and networking opportunities.

Yokogawa was there to celebrate its centenary and launch the latest version of the Centum VP DCS solution. Version R6.01 features a versatile new I/O module designed to handle multiple signal types on

one device. Yokogawa South Africa managing director, Johan Louw, told delegates that in combination with the FieldMate Validator software and Automation Design Suite platform, this can dramatically reduce the time required to install and configure a control system. It is the next crucial step in

the evolution of the VigilantPlant offering – Yokogawa's vision for an ideal process plant.

Among the other vendors to promote an enterprise wide vision was Rockwell Automation. The name of the Rockwell game is Connected Enterprise, which managing director Barry Elliot describes as a philosophy for value added manufacturing through open connectivity from the shop floor to the top floor. He says that the strategic alliances with Cisco and Endress+Hauser have made it possible to collect big data from the instrument level, which can then be securely transported upwards through the enterprise over an Ethernet/IP backbone. When it reaches the analytics level, it gets transformed into the information that powers Rockwell's enterprise wide manufacturing optimisation solutions. It was good to see the ideas of IIoT and Industrie 4.0 reaching Africa's shores at last.



MD Barry Elliot

### IoT Secure Remote Maintenance

FRIMO is a machine builder for high-quality plastic components. FRIMO has many years of experience with remote service in the automotive environment. Despite the limited bandwidth of the analog 56 kbit/s modems, access to programmable logic controllers (PLCs) in the machines was still relatively efficient. "Analog connections are no longer sufficient to ensure remote maintenance for these computers," says Axel Starflinger, IT Administrator at FRIMO.

FRIMO uses remote service for rapid fault clearance. Expanded services are also available. As the support needs of its customers are continually rising, FRIMO intends to expand its remote service over time. "We adapt our machines to the specific requirements of our customers. With fast and secure VPN connections, we have access to all the devices in the machine. For example, our service allows us to remotely set up an extra checkbox in the PC's visualization system, or adjust the parameters of a frequency converter," explains Axel Starflinger. The key here is operational security for the Industrial Internet of Things.

### A secure, efficient and easy-to-use remote service solution

FRIMO has integrated 80 "mGuard" remote service connectivity from security specialist Innominate. Due to the uniform, standardized configuration templates for the mGuard, any configuration effort at the machine end is low. To set up the remote maintenance solution, a complete configuration template is read into the mGuard via an SD card. This defines almost all the required parameters. Then only customer-specific entries for the VPN connection, the customer network's default router and the machine's IP addresses need to be added.

FRIMO is deploying an mGuard bladeBase for up to 12 mGuards in a 19-inch standard rack system. All technical parameters and authorizations are already set up, so a new machine can simply be added and connected, without any additional entries having to be made. All FRIMO locations are connected to headquarters via an internal MPLS network. "With our centralized solution, we have created a uniform and standardized access solution for all our subsidiaries. This simplifies operation, and the administration costs are considerably less," says Starflinger.

## Africa Automation Fair Lights Up South Africa (continued)

Speaking of Endress+Hauser, the People for Process Automation were out to showcase a few innovations of their own. One that stood out was the new tuneable diode laser spectroscopy gas measurement systems. The TDSL technology fills a void in the company's ability to deliver online analytical gas measurement solutions. Endress+Hauser South Africa managing director Rob Mackenzie believes this changes the game in terms of a complete solution offering to the oil & gas industry. Local evidence of this is the implementation of E+H's largest project to date at South African producer Sasol.

Siemens, on the other hand, brought a futuristic feel to the Fair through its 3D virtual reality technology. The Walkinside Immer-

grabs.

The cherry on the top of the technology parfait though was provided by the FIRST Robotics Open African Championships, which ran in parallel with the exhibition. The competition is designed to create an opportunity for future young engineers and innovators to display their talent and passion for robotics. It was a first in Africa, and so good to see the level of interest with 84 local and international teams participating. The idea of running the events in parallel was to encourage more collaboration between the school children and the engineering community. It was encouraging to see how well this worked out in the end – on the morning of the first day, a bunch of school kids walked in; and on the afternoon of the last day, a bunch of innovators walked out.

Thumbs-up to the organisers of Africa Automation Fair 2015 and to everyone who supported it, local industry was in desperate need of a world class exhibition like this. It is an event that must grow from strength to strength in the future, in order that Africa's manufacturing competitiveness may flourish and elevate itself to be right up there with the best in the world.



FIRST Robotics



Siemens' Walkinside Immersive Training Simulator

sive Training Simulator (ITS) fully immerses operators in a life-size virtual reality representation of their plants. It simulates real-life scenarios and supports multiple avatars to test team performance and communication. To increase the training realism, the 3D model may be enriched with all the details of an existing real-world plant. 3D objects can be added to the virtual reality model to show evacuation routes, emergency and fire-fighting equipment, signs, etc. Escape paths are represented in their full length for rehearsal of evacuation procedures and sound effects complete the realistic setting. Little wonder that Siemens scooped one of the best stand awards up for

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Magazine, a production of Technews. You can read his magazine, and Technews' other publications at <http://www.technews.co.za>



## Erhardt+Leimer and AVT Close Dancing

**Erhardt+Leimer**, a leader in system solutions and process control equipment to web-based industries and **AVT** (Advanced Vision Technology), a leader in print inspection, print process control, and quality assurance, have announced their intention to form an alliance that will broaden product portfolios and strengthen services for customers of both companies, including end users and OEMs, through solutions born of the two companies' combined experience and technological skills.

According to the companies' understanding, in a first step AVT will acquire E+L's automatic print inspection solutions and will assume the responsibility to develop and manage these solutions for both companies' customers in the Label and Packaging applications, including the corrugated segment.

In return E+L will be entitled to future earn outs and a cash payment as per the set terms.

As part of the agreement, Dr. Michael Proeller, E+L's CEO, will be appointed Chairman of AVT's Advisory Board and serve as an observer on AVT's Board of Directors.



# THE WAY I SEE IT

## Editorial

### Millenials: What Will Their Control Rooms Look Like?

It's all about metaphor, you see. Because we cannot directly experience what is going on in the process, we have to have an interface between ourselves and it. And that interface is really a metaphor for what is going on.

In the early days, the interface was a gauge or a whistle, followed relatively quickly with panels on which were mounted gauges, dials, pointers, and other indicators, as well as control knobs and controllers. We called the apotheosis of this the Panel Wall and it is the most successful metaphor for controlling a process we've invented.

To put the power of digital control into the process, we gave up the panel wall in favor of small screens with ASCII graphics. In the fullness of time, we went to Windows interfaces, with flat screen graphics, including little cartoons of the devices that were active in the control of the process.

Now, we have been trying for the past thirty or more years to get back to the power of the Panel Wall metaphor in thinking about process control. Look at a "modern" control room now and what do you see? You see a Panel Wall, suitably updated for the use of huge video

screens instead of actual instruments. We see virtual dials, indicators, and control knobs.

There has to be something better than just going back to the past in a digital analogue (yes, that's a really bad pun) of the Panel Wall.

What I think is that technology and the Millenials

**We called the apotheosis of this the Panel Wall and it is the most successful metaphor for controlling a process we've invented.**

will help us get there.

While the panel wall was a great metaphor, it isn't as great as completely interactive virtual reality would be.

On the immediately previous page to this editorial is a photograph of the Siemens "Walkinside" Immersive Training Simulator. That's one third of the answer.

Increasing the available sensors in the process and the ambient environment by a couple of magnitudes is another third of the answer because this lets us make the resolution of "reality"

very high definition. The last third of the answer has come from outside the automation industry, just like the graphics engines that power Walkinside and its competitors have come from the gaming industry.

The final third of the answer comes from Google (of course) and their Advanced Technology and Projects Group division, ATAP.

It is called Project Soli, and it is a universal radar-based haptic interface. The Google engineers, Millenials all, developed it to provide a better and easier to use interface for smart watches. Smart Watches, as are the coming generation of IoT sensors, are too small to put a standard keyboard or touchpad sensitive interface on— they're too small for the gestures necessary to operate them.

Project Soli, which can be seen at [Wel-come to Project Soli](#) on YouTube, has produced a radar-based interface that can reproduce even the smallest gestures easily and correctly.

Best of all, Google says they will release an API for developers to use Soli in the near future. This is great for HMI designers in the industrial and process automation fields— GOTS to the rescue again.

Putting these three strands together gives us a completely new metaphor for how to control a process or an assembly line: reality.

*Walt Boyes*

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Read my Original Soundoff!! Blog:  
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## Rajabhadur V. Arcot: India's world-class automotive industry spurs automation and technology solutions market

becoming one of the fastest-growing big emerging market economies in the world."

The report says that the GDP of India "will strengthen to 7.2 percent in the fiscal year 2014 -15 and rise to 7.5 percent in 2015 - 16."

**"India will have the largest, and among the youngest, workforces in the world, and will need to create jobs for roughly one hundred million young Indians who will enter the job market in the coming decade."**

According to the report, "helped by positive policy actions that have improved confidence and by lower global oil prices" the country's economy is reviving. Looking at the next 15 year horizon, the report says that "India will have the largest, and among the youngest, workforces in the world, and will need to create jobs for roughly one hundred million young Indians who will enter the job market in the coming decade."

IMF's optimistic assessment of the Indian economy and its growth prospects are due to the "resilient performance of the services and manufacturing sectors of the economy" and pick up in the new investment project announcements. Similar reports from other rating agencies such as Morgan Stanley also confirm that India is bracing for a long period of higher sustainable growth.

This is some good news as the global economy seems otherwise stubbornly anchored to slow GDP growth. Since unorthodox measures like the quantitative easing adopted by the US, Japan and European Union have not helped matters much, India is beginning to get greater attention from companies that seek investment and development opportunities in big markets

that hold promise of growth. In my previous reports, I wrote about India's pharmaceutical and electric power industries that offer excellent opportunities to automation and other technology companies and this time the focus is on automotive industry, which is expected to

post excellent growth in the coming years.

About the growth potential of the India's automotive market, speaking to reporters Philipp von Sahr, President, BMW India said, "in the next 10 years, India will be one of

the few key markets where you can expect a lot of growth."

GM's chief of international operations, Stefan Jacoby, has expressed similar sentiments. According to Reuters he is quoted as having said "India may be the last big white sheet of paper in the automotive industry."

### Growing automotive industry's economic impact

The country already figures as one among the largest automotive design, engineering and manufacturing centers and it is all set to expand further. It contributes significantly to the country's economic expansion, its manufacturing industry's growth, and job creation.

In recent years, the country has started exporting automobiles and become a global hub for compact cars. The country's economic expansion in recent years, raising aspirations of the growing middleclass and changing life styles have all contributed to the growth of the automotive and auto component industry in the country and the emergence of a robust ecosystem.

From India's perspective automotive industry is a sunrise industry, which holds immense

## Rajabhadur V. Arcot: India's world-class automotive industry spurs automation and technology solutions market (continued)

promise in creating jobs and contributing significantly to the country's GDP. The growth of the automotive industry, on one

Description	Growth CAGR	hand, is a direct indicator of the growing economic prosperity of the country and, on the other signals, the growth of numerous other industries including petroleum refining and downstream products, steel, aluminum, forgings, castings, and machining. In a way, it heralds an era of
Revenues	15.28%	
Profit after tax	14.51%	
Total assets	16.87%	
Market Capitalization	23.64%	

### Performance of select auto companies from 2004 - 2014

future growth.

#### Industry growth drivers & present status

After growing robustly during the years 2010-2012, automotive industry slowed down in the last two years. However, the industry's mood has once again turned buoyant because of the country's economic turnaround in the last 3-4 quarters.

**However, the industry's mood has once again turned buoyant because of the country's economic turnaround in the last 3-4 quarters.**

From a long-term perspective, improved affordability, untapped domestic market potential, and such others provide the necessary impetus for the future growth of India's automotive industry. The industry derives its major strength from the country's auto component sector, which is already a significant player in the global supply chain with proven design & engineering capabilities and excellent record of accomplishments in the export market. The auto component industry has emerged as a supplier of high quality – low cost components, such as engine parts, drive transmission, steering, suspension and braking parts. The industry's commitment to achieve high quality standards and to follow lean manufacturing and total quality management practices have propelled the country to emerge as a center of automotive excellence.

ndian automotive industry, ranking as the world's seventh larg-

est, produces almost the entire automotive range starting from two and three wheelers, passenger cars, commercial vehicles, to tractors and trucks. While two-wheelers contribute to almost 80 percent of the total number vehicles produced in the country, passenger vehicles, commercial vehicles, and three wheelers constitute 14 percent, 3 percent, and 3 percent respectively. In the coming years the passenger car and commercial vehicle segments are expected to grow faster. According to the information available from the Automotive Component Manufacturers Association of India (ACMA), India is the second largest manufacturer in the two-wheeler and bus segments. India also has a strong presence in the tractors' market.

Indian automotive industry market participants include both domestic and global original equipment and auto component manufacturers. Global original equipment manufacturers, such as Ford, General Motors, Volvo, and Toyota among others, seeing India not only as a demand-centric market but also as a cost-effective base for parts sourcing, have entered the market.

Their extensive use of information technology (IT) and operation technology (OT) to gain global competitiveness, supply chain efficiencies and operational excellence has transformed the landscape of the country's automotive and auto components industries.

As is the case in the rest of the world, the automotive industry in India is centered around clusters.

They are Chennai in the South, Pune in the West, and Gurgaon-Manesar in the National Capital region in the north, with an emerging one in Gujarat. Major OEMs and their supplier partners are located in these clusters. Global OEM majors such as Ford, General Motors, Nissan, Hyundai, Honda, Skoda, and others have established their production facilities in these clusters so as to take advantage of the well-developed ecosystems at these locations. Some of these clusters also have test centers that are set up under the National Automotive Testing and R&D Infrastructure project, which is aimed at creating core global competencies in the automotive sector and facilitate its seamless integration with the world.

#### Extensive reliance on automation and technology solutions

The automotive industry has evolved into a highly collaborative -networked industry with major OEMs essentially assembling sourced parts and subassemblies with brand creation, marketing,

## Rajabahadur V. Arcot: India's world-class automotive industry spurs automation and technology solutions market (continued)

ability to manage the business, and set benchmarks as their forte. Therefore it relies extensively on IT and OT systems and solutions to achieve efficiency and productivity along the entire design-source-make-deliver supply chain. Production processes, involved in making the various parts and subassemblies that go into automobiles, encompass among others machining, metal fabricating, molding, forging, casting, and assembly. With their production processes requiring extensive application of CNCs, motion control systems, robotics, machine-safety control systems, and enterprise-management solution connectivity, the demand for these systems and solutions are bound to expand in the coming years as the industry grows.

The OEM production facilities extensively use programmable logic controllers, human machine interface systems, robots, AC drives, special sensors, and such others to achieve shop floor productivity improvements and cost reductions. Manufacturing execution systems connecting the enterprise resource planning solutions and control systems effectively schedule the production operations.

### Industry's future is bright

Historically, the automotive industry has been a major contributor to the economic prosperity of many developed countries and this may turn out to be so in the case of India too. The Indian government, recognizing this, is intent on spurring the growth of the automotive industry. It is developing the necessary roadmap.

Ambuj Sharma, Additional Secretary, Ministry of Heavy Industries, Government of India recently said that the government will soon announce the second Automotive Mission Plan (AMP) that will layout the directions for the automotive industry for the next 10 years (2016 to 2026) so that the industry's contribution goes up to 10 percent of the country's GDP by 2026.

If things go according to the proposed plan, then the coming decade may well turn out be glorious years for the automotive industry in India. Such a scenario augurs well for the country as it will spur economic growth while creating more jobs.

According to industry sources every job created in an auto company leads to three to five indirect ancillary jobs. The expansion of the automotive industry has a force multiplier effect on other industries such as steel, aluminum, polymers, electronics, service, and others. This underscores the huge impact that the growth of automotive and auto component industry will have on the country's industrial activities. As a consequence, the automation market will expand along with the market for IT and OT solution and service providers. Automation suppliers and other

technology solution providers may take note of this growth opportunity. Many of them have strong supplier partnership relationship with global automotive firms. They should endeavor to further leverage those relationships to strengthen their market position in India too.

**...the coming decade may well turn out be glorious years for the automotive industry in India...**



We are proud to announce the appointment of Rajabahadur V. Arcot as Director Asia Operations for Spitzer and Boyes LLC, the publisher of the Industrial Automation INSIDER. He is an independent

industry analyst with over 40 years experience. Until recently he was responsible for ARC Advisory Group's operations in India. Contact him at [rajabahadurav@gmail.com](mailto:rajabahadurav@gmail.com).

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