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Your key to the latest industrial automation and process control information

Inside this issue:

Siemens Oil and Gas Innovations Conference

More Information in the First Two Hours than in Most Other Conferences

Siemens held their annual Oil and Gas Innovations Conference in Houston on April 21-22. It started off with a bang, as Scott Macdonald, vice president of sales for Siemens Industry did the welcome. "Since last year's conference," he announced, "U. S. crude oil production increased by 1 million barrels/day. Production exceeded imports during several weeks of 2013 making the U. S. an oil exporting country once again. There have been transportation system improvements. China replaced the U. S as the world's largest crude oil importer, and Europe (especially Germany) feels the first geopolitical energy pressure in decades." Macdonald talked about Siemens in Houston being very community minded, supporting at risk youth in a partnership with the Houston Mayor's anti-gang office, while they provided all the Motor Control Centers, transformers, fire safety, security and lighting for the Reliant Center, and the vehicles for Houston's light rail line.

John T. Royall

John T. Royall, CEO of Gulf Publishing Company gave a 54 slide journey into the state of the oil industry, noting that the U.S. is depending on fracking and horizontal drilling and some other components of the oil business for its newfound success in Big Oil. By this time, charts were flying all over the place. Christopher Robart, partner at PacWest Consulting produced plenty of information that indicated that the U.S. was going to do fine in the near term in the oil business, and even pretty long term too. Upstream oil & gas activity in North America is robust, he said. Service intensity of unconventional oil/gas continues to increase.

Christopher Robart

Efficiency and cost are critical drivers in today's market. As the scale of well pads increase, opportunities for the application of manufacturing "best practices" increases. Unconventional outside North America is still early stage, but represents a significant opportunity.

Moving swiftly, Robart was followed by Wolfgang Rubrecht, vice president automation systems at Siemens, whose discussion was titled, "Rethinking Automation in the Oil and Gas Industry." Rubrecht went through the challenges that face us: aging workforce, a talent shortage, cyber security threats, competitiveness through improved efficiency, uptime and asset optimization and increased regulation. He noted that Siemens had answers and fixes for all of these problems.

Wolfgang Rubrecht.

Then it was time for Sandy Vasser from ExxonMobil to reprise his litany of what

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Health Watch

This month's Health Watch reflects the inclusion of Invensys' final financial report in the Schneider Electric report, and some discussion of issues in Japan to go with earnings reports.

Find the INSIDER Health Watch on page 28 in this issue.

...and a whole lot more!!

Cover Story: Siemens Oil and Gas Conference

Exxon's Sandy Vasser

ExxonMobil wants from their automation suppliers, and is insisting that they start getting. Some of us had heard this before, at the ARC Advisory Group Forum in February, but it is still a very strong statement for a customer, even one of the very largest, to make to vendors.

"Here are the Top Ten (or 13) Challenges we've presented to our top vendors. We have started to write specs this way and we need to get these challenges met."

1.Eliminate, simplify and/or automate steps in the overall automation execution (i.e. you can't make a mistake if you don't have to do it);
2.Minimize custom engineering;
3.Shift the custom engineering to the software and rely on standard, not customized hardware components with minimal dependencies on the custom design; progress hardware delivery independent of software design;
4.Virtualize the hardware and prove the software design against the virtualized system via software FAT that can be performed anywhere; no hardware FAT;
5.Prevent design recycle and hardware/software rework;
6.Eliminate components not necessary in the architecture of the systems and standardize on the remaining components; all systems look alike between projects (i.e. design one, build many);
7.Eliminate or minimize physical, data and schedule dependencies with other disciplines;
8.Simplify the configuration of interfaces with all third-party packages (e.g. electrical systems, packaged skids);
9.More easily accommodate changes including very late changes;
10.Mitigate the effects of hardware and software version changes;
11.Eliminate, simplify and/or automate the generation of required documentation;
12.Alarm manage and cyber secure by design;
13.Challenge traditional approaches and solutions.

"We want to be where 'It Just Happens!'"

Conventional thought to achieving project success has been to focus on "perfecting" the way projects have always been executed.

This has burdened and impeded the identification of change. Challenging traditional and proven practices is difficult. Accepting and implementing change is difficult.

However, improving on what has always been done can only result in incremental improvements at best or continued complications. We have got to redefine and transform how we execute automation projects.

Where we want to be, Vasser said: Smart I/O, with Standard factory Junction Boxes It will allow ordering of standard factory JBs to support construction with just an approximate I/O count; allows assembly and delivery of factory JBs to allow the latest hardware version and additional I/O must be accommodated by adding more JBs. The hardware should be almost "installation-proof" and give us streamlined commissioning and simplified and/or automated documentation.

Here is the current list of automation technologies that are being pursued, Vasser said.

- Smart Configurable I/O
- Virtualization of Hardware and Virtualization used for Engineering / Testing
- Auto-Detect / Auto-Interrogate / Auto-Configure / Auto-Enable / Auto-Document I/O (DICED I/O)
- Third-Party Package Interface Solution using Ethernet/IP
- Standardized and Simplified Interface Solution for Electrical Systems
- Standardized HMI
- SIS Logic Solver directly programmed using translated Cause & Effects
- Wireless
- DC Power Supply (eliminate Inverters)

"It is the packaging of many technologies that will achieve the necessary outcomes," Vasser said.

What we think we will get by implementing these technologies, Vasser said: Hardware will consist primarily of standard components that do not have to be custom engineered. This should eliminate the need for hardware FATs. Facility specific design will shift from the hardware and software to almost entirely within the software; hardware development and software development will be linked only where the hardware and software are brought together at site; all hardware for construction will always be available when required. Hardware will be virtualized for engineering purposes and software design will be proven using the virtualized hardware—work can be performed anywhere. Marshalling, I/O and controller cabinets in buildings will be significantly reduced.

The amount of construction drawings will be significantly reduced and most loop drawings no longer needed.

Commissioning activities will be simplified and many of the required commissioning activities will occur automatically. Control and safety system interconnects will be self-correcting, making construction almost installation-proof.

"Automation can never again be on critical path!" Vasser concluded.

Challenging traditional and proven practices is difficult. Accepting and implementing change is difficult.

CSIA Grows Up—Executive Conference 2014

A record-breaking 538 people attended the Control System Integrators Association (CSIA) Executive Conference in San Diego, CA April 24-26th.

Alan Beaulieu, ITR

In attendance were more than 80 system integrators, partners and guests from outside the United States, who were welcomed at a special reception for international guests.

Economist Alan Beaulieu, president of ITR Economics, opened the conference by sharing his optimism for the future of manufacturing and how system integrators can prepare for expansion beginning in 2015. A panel presentation, Lessons from Touching a Hot Stove, moderated by long-time member Bob Zeigenfuse, president of the system integration firm Avanceon, received positive reviews from conference attendees. The panel presentation was one of 20 breakout sessions offered during the three-day event, including ones on cyber security, the Internet of Things, and modern marketing for system integrators.

Bob Ziegenfuse

Three members were recognized with association awards during a dinner held in their honor. Steve Goldberg, director of information technology, Matrix Technologies Inc., Maumee, Ohio, Pa., U.S. received the Charlie Bergman Award. Keith Mandachit, IT manager and senior engineer, Huffman Engineering Inc., Lincoln, Neb., U.S. was named CSIA Rising Star. Phoenix Contact, Middletown, Pa., U.S., represented by Steve Newcomer, distribution channel specialist, received the Partner of the Year Award.

Steve Goldberg with Ed Diehl

Diehl presents Rising Star Award to Keith Mandachit

Phoenix Contact's Steve Newcomer

The talk of the conference was the new Industrial Automation Exchange, www.csiaexchange.com, a new online community for integrators, partners and prospective clients. Members were invited to create personal and company profiles on the Exchange, which replaces the association's popular Find an Integrator directory with a social community for integrators, partners and prospective clients.

Update on the Exchange

Eric Huemmer reports, "Since going live three weeks ago, the Industrial Automation Exchange has seen a flurry of activity. Our integrator and partner members who are signing on during this beta period are doing an excellent job exploring the site, reporting issues, and offering their feedback on how to make it an even better experience. Our developers have been quick to respond, and we see improvements to the site on a daily basis.

"We encourage everyone to sign on, update their free, bronze-level profile, and let us know what you think so we can improve the Exchange further for you and your potential clients. It's only through the participation of everyone will the CSIA Exchange become the industry's main resource for system integrators, industry suppliers and potential clients."

The 2015 Executive Conference will be April 30 – May 2 in Washington, D.C.

It's Earnings Season!

ABB, Schneider Electric, Rockwell Automation, Yokogawa and others bare their balance sheets...

Schneider 2014 Q1 results

At the end of April, Schneider reported their Q1 results – those for the first three months of 2014, which also include for the first time the Invensys figures, consolidated from January.

Earlier, in February, Schneider announced the sale of the Invensys Appliance Division, to an affiliate of Sun European Partners LLP. The business will be renamed Robertshaw Controls Company, supplying components to control the operation of residential and commercial appliances: the previous year this business had revenues of GBP331m and profit of GBP8m. Schneider achieved a purchase price of GBP150m ($250m) for the transaction.

This leaves Schneider Electric with the Invensys automation, software and energy controls businesses, which generated revenues of GBP1461m ($2.4Bn) in their year to 31 March 2013.

So Schneider Q1 revenues were Euro5.7Bn, up 7.7% on last year. Jean-Pascal Tricoire, chairman and ceo, expressed satisfaction with the Invensys performance, in what was their original fourth quarter: "*We are pleased with the solid performance of Invensys in fiscal year 2013-2014 and a good start of 2014. Integration is well on track and teams are aligned to execute on synergies.*"

Invensys was reported to have achieved strong order growth in fiscal year 2013-14, of +9% at constant exchange rates, with double digit growth in Software, and (high) single digit growth in Industrial Automation.

OPBIT growth in double digits was achieved on the year despite quoted "flat revenues." Acquisitions as a whole contributed Euro546m to the group results, quoted as mainly from Invensys. Since that figure is GBP448m ($739m), admittedly for the Invensys Q4, this is 22% above the average revenue run rate for the previous Invensys year.

It sounds like the oft-quoted drive within Invensys - to achieve the best possible results for Q4 - was very effective.

It sounds like the oft-quoted drive within Invensys - to achieve the best possible results for Q4 - was very effective.

Good 2013 FY results from Yokogawa

The official Yokogawa end of the 2013 financial year results were published on May 13. However, on April 10 the company chose to post a denial on their website, saying that earlier media reports about their results were not based on any official figures. These media reports were presumably based on analyst forecasts, after they had been impressed by the Q3 results: they rated the shares as "Outperforming" the market over the next few months, possibly with share price and dividend increases of 27%.

Hiroshi Suzuki, senior vice president for corporate administration and marketing presented the third quarter 2013 consolidated results on February 7, expressed in Japanese Yen. These showed orders up 20% and sales up 11.6% for Q1-3, compared to the previous year, largely due to the weakness of the Yen. This resulted in a 40% increase in operating income. According to forecasts made in February, Q4 will be on budget, to give 2013 orders of Y400Bn and sales of Y385Bn (approx. $4Bn), and net income forecast the same as 2012 at Y14.5Bn ($150m) – an effective operational increase of Y3.8Bn or 35% (because the net income in 2012 included the sale of some fixed assets).

Currently the Yen trades at

Siemens and Mitsubishi Heavy Industries form joint venture for metals industry

Siemens and Mitsubishi Heavy Industries (MHI) have agreed to cooperate in the metallurgical industry and are forming a globally operating complete provider for plants, products and services for the iron, steel and aluminum industry.

Responding to the challenging market environment and high price pressure, they are bundling their individual strengths and establishing a joint venture, with MHI holding a 51-percent and Siemens a 49-percent stake.

Both partners are contributing their metallurgical industry activities to the joint venture.

The new joint venture will integrate Mitsubishi-Hitachi Metals Machinery, Inc. (MH) – an MHI consolidated group company with equity participation by Hitachi, Ltd. and IHI Corporation.

Siemens and MHI ideally complement one another with regard to their product portfolios, production know-how and geographical spread.

The new joint venture with approximately 9,000 employees will focus fully on business with iron, steel and aluminum-producing industries.

By combining both portfolios, the joint venture can offer its customers the entire value chain in iron, steel and aluminum production, from technologies for processing raw materials to surface finishing at the end of the production process, as well as the related lifecycle service competencies.

The company's headquarters will be located in the United Kingdom. The joint venture includes supply agreements for Siemens' Industry Automation and Drive Technologies Divisions.

From an automation point of view, this gives Siemens and MHI a monster-sized EPC/system integrator in house in the primary metals industries.

It's Earnings Season!

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around Y100=$1, whereas last year Y83 was equivalent to $1.
Yokogawa CEO Takashi Nishijima presented the FY13 Final Report on May 13th.

From the 2013 report:
The global economy continued to recover, albeit very slowly; the U.S. economy continued to improve gradually and the European economy started to pick up in the latter half of the year, but concerns lingered throughout the year over the slowdown in emerging countries including China and India. The Japan economy showed signs of a gradual recovery, with improvements in personal consumption and corporate performance as a result of the falling yen and rising stock market, which were triggered by bold fiscal and monetary policies. However, the growth outlook for Japan remains weak due to the rising cost of energy and imported raw materials, an expected decline in personal consumption after the consumption tax hike in April 2014, and other concerns.

Yokogawa Results for FY13			
Consolidated Billions of yen	Year ended March 31, 2013	Year ended March 31, 2014	Change
Net Sales	347.899	388.463	up 40.563
Operating Income	18.409	25.893	up 7.483
Ordinary Income	18.002	25.679	up 7.676
Net Income	14.688	12.341	down 2.346

Under these circumstances, based on the Evolution 2015 mid-term business plan, the Group continued to strive for growth by focusing on the industrial automation and control business, which remained strong thanks to the growth in energy-related investment. As a result, and partly thanks to the continued weakening of the yen, net sales and operating income were up year on year.
The net income for the fiscal year under review was down from a year ago, when there was a surge in extraordinary income from the sale of idle assets. An additional factor impacting net income was the recording of business structure improvement expenses during the year under review.

In the industrial automation and control business, although the Japanese market faced uncertainties, energy-related markets outside Japan remained robust. Under these circumstances, and partly thanks to the continued weakness of the yen, net sales for the industrial automation and control business came to 336.329 billion yen, up 40.633 billion yen year on year, and operating income was 24.224 billion yen, up 6.213 billion yen.

Rockwell Misses, Gets Slapped

Rockwell Automation posted its quarterly earnings results on Tuesday, April 29th. The company reported $1.35 earnings per share for the quarter, missing the analysts' consensus estimate of $1.44 by $0.09. The company had revenue of $1.60 billion for the quarter, compared to the consensus estimate of $1.61 billion. During the same quarter last year, the company posted $1.33 earnings per share. Rockwell Automation's revenue was up 5.1% compared to the same quarter last year. Analysts expect that Rockwell Automation will post $6.21 EPS for the current fiscal year. By Wednesday, April 30th, JP Morgan Chase had reiterated its "underweight" rating. Other analysts have also recently weighed in on ROK. Analysts at Morgan Stanley reiterated an "underweight" rating on shares of Rockwell Automation in a research note on Wednesday. They now have a $112.00 price target on the stock, down previously from $113.00. Separately, analysts at Zack's reiterated a "neutral" rating on shares of Rockwell Automation in a research note on Friday, April

English CSI Gets Bonding Help from Local Funding Agency

One of the problems that control system integrators have is bonding capacity. Another is working capital. These companies are generally not bankable since their assets are small and their needs for cash are large.
In the UK, a Middlesbrough firm, Industrial Technology Systems, has secured a contract worth nearly £1m for work on a new £70m Combined Heat and Intelligent Plant (CHiP) in London with backing from the £10m Tees Valley Catalyst Fund and Lloyds Bank Commercial Banking.
A £200,000 loan enabled ITS to provide a performance bond required to win the contract. The fund provides loans to help companies fund their performance, warranty bonds and guarantees that are often required when bidding on new contracts.
ITS, which employs more than 30 people on Teesside, has been sub-contracted to design and install process control systems on the CHiP project.
The six-to-nine-month contract is worth £800,000 to ITS and will create new jobs in the Tees Valley.
Malcolm Knott, managing director of ITS, said: "The Tees Valley Catalyst Fund is a brilliant idea. It has meant we have not had to tie-up our capital, which could have hampered us operating effectively.

It's Earnings Season!

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11th. They now have a $128.00 price target on the stock. Two equities research analysts have rated the stock with a sell rating, eight have given a hold rating and six have assigned a buy rating to the stock. The company presently has an average rating of "Hold" and an average price target of $114.75.

ABB reports four divisions on track, "Step change" program in Power Systems

- Orders stable on a like-for-like basis, early-cycle trends remain positive
- Operational EBITDA steady, excluding Power Systems (PS)
- Strongly improved cash from operations "Step change" program launched in PS to deepen business transformation. ABB reported stable top line results for the first quarter of 2014 as the company benefited from its broad presence in early-cycle industrial sectors and its well-balanced geographic scope.

Orders of $10.4 billion were steady near last year's level despite continued slow large order intake from utilities and late-cycle industries. Revenues amounted to $9.5 billion, with automation revenues increasing and power revenues declining, the latter reflecting the lower opening order backlog in power compared to the same quarter in 2013. Operational EBITDA margins were higher in Low Voltage Products and Process Automation and steady in Power Products and Discrete Automation and Motion, excluding the expected dilutive impact of the Power-One acquisition. Group operational EBITDA and margin were adversely impacted by weak operational performance in Power Systems and charges related mainly to large engineering, procurement and construction (EPC) projects in offshore wind and solar power generation, resulting in a loss in PS in the quarter. Cash from operations improved in the quarter despite the deterioration in Power Systems.

"We remain on track in four divisions who combined to deliver higher early-cycle orders, steady earnings and stronger cash flow in the first quarter," said ABB Chief Executive Officer Ulrich Spiesshofer. "Strong order growth and cash generation in Discrete Automation and Motion and solid revenue execution in Low Voltage Products were highlights in the quarter. Power Products maintained its solid profitability, and operational EBITDA margin in Process Automation was at record levels.

"With the divestiture of Thomas & Betts HVAC business, and the Power-One Power Solutions business we announced yesterday, we are making good progress in our portfolio pruning efforts.

"We are disappointed with the continued poor performance in Power Systems and are rigorously executing actions that go well beyond the previously-announced strategic realignment," Spiesshofer said. "After a thorough review, the new leadership has initiated a 'step change' program and already taken a number of corrective decisions. These include the discontinuation of bidding for solar EPC projects and further management changes. The transformation of PS will take longer than originally expected, but we remain confident that the outcome will be a strong and competitive business.

"Looking ahead, our ambitions in 2014 are to continue the solid performance in four of our five divisions and drive the turnaround in PS." he said. "At the same time, our leadership team is making good progress on our longer-term strategic plan and we look forward to presenting it at our capital markets day in September."

ABB Gets Slapped Too

ABB stock dived over 8% immediately after Spiesshofer's conference call. Zack's rates ABB stock "strong sell." "This slump shouldn't be too much of a surprise to investors," Zack's

Boiler Control System Powered by ABB Freelance Controller

Byworth Boilers, based in Keighley, UK, are a manufacturer of steam boilers. After looking at the available control systems for multiple boiler installations, Byworth engineers developed their own system, called Unity. From a central user interface, accessible via the built-in touchscreen, or remotely via PC or tablet, Unity operators can view processed data and trends relating to numerous measurements, such as boiler and manifold pressures, boiler water level and conductivity, hotwell levels and temperature, blowdown and flue gas temperature and gas analysis. These data trends are used to implement efficiency and cost-saving responses.
'What we're offering is a boiler house that makes intelligent decisions, based on multiple pieces of information, processed in an effective manner, while at the same time making that information globally available over a LAN or WAN connection' said Jason Atkinson of Byworth. All alarms and tests conducted are logged and can be exported to a network printer if required. The comprehensive approach to the management of multiple processes gives Unity its unique advantage over other third party control systems, which typically control single aspects of the boiler house performance. At the heart of the system is an ABB Freelance controller, which brings all the ease of use and high levels of instantaneous integration of a DCS to this type of application.

It's Earnings Season!

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reported, "since the power and automation technology provider has seen two negative revisions in the past few weeks and its current year earnings consensus has moved lower over the last 30 days. That suggests there may be more trouble down the road."

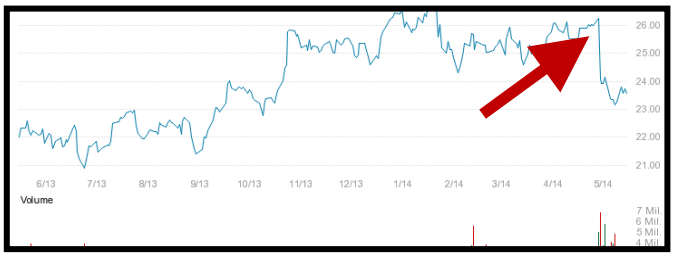

ABB stock price takes a tumble after financial reports

Siemens Feels Headwinds

The interim quarterly report, issued in April, shows slowdowns in Europe, CIS and other places

Second-quarter revenue was 2% lower year-over-year. On an organic basis, excluding currency translation and portfolio effects, revenue rose 1%.

Orders declined 13% compared to the prior-year period which included a substantially higher volume from large orders. On an organic basis, orders were 10% lower year-over-year. The book-to-bill ratio was 1.06 for the quarter, and Siemens' order backlog reached a new high at €103 billion.

Total Sectors profit rose 16%, to €1.566 billion, highlighted by a strong profit increase in Infrastructure & Cities, and income from continuing operations climbed 19%.

Net income for the second quarter rose 12% year-over-year, to €1.153 billion, and basic earnings per share (EPS) increased to €1.33.

Free cash flow from continuing operations was €1.390 billion, up slightly from €1.360 billion in the second quarter a year earlier.

Management's perspective on second-quarter results.
We believe that the second quarter of fiscal 2014 showed that we still have a lot to do to improve our operating performance. Nevertheless we are on course to reach our targets for the Fiscal year.
Record backlog, currency translation headwinds continue.
Second-quarter revenue came in 2% lower year-over-year, and
orders declined 13% compared to the prior-year period due
mainly to a lower volume from large orders. The euro remained strong against nearly all other major currencies compared to a year earlier, which took four percentage points from order development and revenue growth. On a comparable basis, excluding currency and portfolio effects, revenue rose 1% year-over-year and orders declined 10%. The book-to-bill ratio for Siemens overall was 1.06. The order backlog increased to a new high of €103 billion.

Lower volume from large orders in Europe, C.I.S., Africa, Middle East.
Orders declined compared to the second quarter a year ago, when Energy won two large offshore wind-farm orders and Infrastructure & Cities took in two major rolling stock orders, all in the region comprising Europe, the Commonwealth of Independent States (C.I.S.), Africa and the Middle East. Industry delivered solid order growth year-over-year, and Healthcare orders rose slightly on a comparable basis. While orders fell in Europe, C.I.S., Africa, Middle East for Energy and Infrastructure & Cities as mentioned above, these two Sectors led double-digit order growth in Asia, Australia. Orders rose moderately in the Americas despite strong negative currency translation effects. Orders in emerging markets declined 10% to €6.129 billion, representing 33% of total orders for the quarter.

Krohne Inor temperature sensors

Krohne Inor, the temperature sensor center within the Krohne Group, based in Malmö, Sweden, celebrates its 75th anniversary this year. Inor was founded in 1939 by Alfred Brakl, from Austria, who emigrated to Sweden in the 1930s. Brakl expanded the importing business by setting up assembly and matching services for temperature products – but then, not satisfied with what was available on the market, he developed his own temperature transmitter in the 1960s, and then produced the first head mounted transmitters. In parallel the specialist temperature assembly business also expanded.

The Krohne Group of Duisburg, Germany, acquired Inor AB in 2006, and the company name became Krohne Inor, offering temperature measurement solutions worldwide. A larger manufacturing space was acquired in 2011, when the company moved to the present modern factory. Recent major orders have been achieved particularly from the power generation industry, where special high temperature assemblies and accessories are required. One example is the Solana CSP plant in Arizona, USA, where more than 1100 measuring points are equipped with the OptiTemp TT51, a SIL2 HART transmitter from Krohne Inor.

It's Earnings Season!

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Stable organic revenue supported by emerging markets.
Infrastructure & Cities and Industry posted revenue growth for the second quarter, and Healthcare revenue rose comparably. Revenue in Energy in the current period fell due to a combination of soft demand and selective order intake in prior periods. On a geographic basis, revenue rose 3% in Asia, Australia on double-digit growth in China that included all Sectors.
Revenue rose in the Americas on a comparable basis. Europe, C.I.S., Africa, Middle East posted a decline compared to the prior-year period, as a double-digit drop in Energy more than offset double-digit growth in Infrastructure & Cities. Revenue from emerging markets was nearly unchanged year-over-year, accounting for €5.912 billion, or 34%, of total revenue for the
quarter. Organic revenue growth in emerging markets was 7%.

Strong increase in Total Sectors profit.
Total Sectors profit for the second quarter rose 16% year-over-year, to €1.566 billion, despite burdens on profit from currency effects, which are expected to continue based on the strength of the euro compared to fiscal 2013. Healthcare made the largest contribution to Total Sectors profit, €531 million, including a positive €66 million effect related to the expected sale of a particle therapy installation. Industry took its second-quarter profit up by nearly one-third year-over-year, to €456 million, despite €75 million in charges at a project in the metals technology business.
The strongest increase in profit year-over-year came in Infrastructure & Cities, which delivered a solid operating performance. Profit for the Sector climbed to €325 million, up from €6 million a year earlier when the Sector took €161 million in charges related to high-speed rail projects. Profit in Energy fell to €255 million in the second quarter, due mainly to €310 million in project charges primarily including two power transmission projects in Canada. This was partly offset by a €73 million gain from the sale of a business. For comparison, profit in Energy in the prior-year period was burdened by €84 million in charges related mainly to grid connections to offshore windfarms in Germany. In the current period, Total Sectors profit was supported by productivity improvements resulting from
the "Siemens 2014" program. In the second quarter a year
earlier, Total Sectors profit was burdened by €106 million in "Siemens 2014" charges.

Higher net income driven by Total Sectors profit
Income from continuing operations for the second quarter rose 19% year-over-year, to €1.163 billion. The increase was due mostly to higher Total Sectors profit. In addition, income from continuing operations in the current period was supported by a positive contribution from outside the Sectors. Second-quarter net income increased to €1.153 billion, up from €1.030 billion in the same period a year earlier. Corresponding basic EPS rose to €1.33 compared to €1.20 in the prior-year period. Within these numbers, discontinued operations posted a loss of €10 million compared to income of €49 million in the prior-year period, which included €57 million in income from discontinued operations related to OSRAM.

Hollysys Reports Big Gain
Q3 Financial Highlights

Quarterly revenue of $95.8 million, representing an increase of 58.8%, compared to $60.4 million year over year, and a decrease of 37.5% compared to $153.4 million quarter over quarter.

Non-GAAP gross margin at 36.2%, representing a decrease of 7.6% compared to 43.8% year over year, and a 3.9% increase compared to 32.3% quarter over quarter.

Non-GAAP net income at-

Ultra Premium efficiency motor from WEG

WEG electric motors introduced the W22 Super Premium class (known as IE4 in Europe) three-phase induction motors in late 2012: now WEG has launched an even more efficient permanent-magnet synchronous motor and drive combination.

WEG W22

This new unit has losses roughly 20% lower than the Super Premium models, so it is one of the first 'Ultra Premium' motors on the market that meet this presently suggested requirement for the proposed IE5 Ultra Premium energy efficiency class.

This makes the W22 permanent-magnet motor range one of the most efficient electric motors currently available world-wide.

The new variant of the W22 permanent-magnet motor combines unique high efficiency with compact size, and gives lower noise and vibration emissions. The combination of the AC synchronous motor and the CFW11 frequency inverter with specific software for open-loop speed control of permanent-magnet motors, uses a special drive strategy - designed to maximise the torque per ampere.

The combination produces a very efficient drive system, able to deliver constant torque over the entire operating range.

Metso valves in Abu Dhabi

Following on from the contracts announced in Saudi Arabia for Metso control valves and actuators, as quoted in the April Insider (page 6), Metso have won a contract to supply the Abu Dhabi Oil Refinery TAKREER chemical complex with hundreds of their Neles globe control and on-off valves. Most of the control valves will be equipped with Neles ND9000 intelligent valve controllers using Foundation fieldbus for performance monitoring and predictive maintenance, which should result in improved process efficiency and uptime.
Metso valves were chosen by the South Korean turnkey contractor Samsung Engineering, who will provide all the project management services covering engineering, procurement, construction and commissioning. The valves will be installed in a carbon black and delayed coker plant, which will process 30,000 barrels of crude oil per day.
Mr YunKi Sung, vp for procurement at Samsung Engineering said: “This is the largest project ever executed by our company, and the total valve quantities are huge. We have had good support from Metso in our past projects, and we can rely on fast expediting; their valve factory is conveniently located close to us in South Korea. To ensure smooth start-ups, Metso offers its wide product knowledge and application expertise as a part of their comprehensive support.

It’s Earnings Season...continued

tributable to Hollysys of $15.1 million, representing a 29.1% increase compared to $11.7 million year over year, and a 41.7% decrease compared to $25.9 million quarter over quarter.

Non-GAAP Diluted EPS at $0.26 reported for the quarter, as compared to $0.21 year over year, and $0.45 quarter over quarter.

Backlog of $602.9 million as of March 31, 2014, representing a 61.2% increase compared to $374.0 million year over year, and 19.8% increase compared to $503.3 million quarter over quarter.

Quarterly DSO of 248 days, as compared to 250 days year over year, and 156 days quarter over quarter.

Inventory turnover days of 45 days for the current quarter compared to 78 days year over year, and 27 days quarter over quarter.

The total amount of cash and cash equivalents and time deposits with original maturities over three months were $150.5 million as of the current quarter end.
The management of Hollysys stated: "We are very pleased to report a solid financial and operational result for the third quarter of this fiscal year. Here I would like to discuss some key events during this quarter:

"We achieved several high-end projects wins in chemical, thermal and enlarge our market share in food beverage and new energy industries. We set long term goals on improving after-sale services. Our solution in reducing waste material emission and environment protection proved to be successful. The past few months have been very exciting for Hollysys. A series of strict testing and on-site engineering application indicates that our new generation K series DCS products meet the requirements for large and complicated projects including power, chemical, etc. Our products will significantly improve our market competitive advantages and effectiveness of project as well as improve our client recognition. For the past few months, our HOLLiAS-N DCS product has been successfully operating in the Yangjiang Nuclear Power Plant, proving that our quality assurance system and products are completely qualified for the high standard of nuclear usage. With China accelerates its nuclear power plants construction in the future, we believe we will benefit more financially as well as in reputation in the long run. Going forward, we believe that we will increase our overall market share in the industrial automation, nurture and quickly take commanding height in our new businesses leveraging our advanced technologies, experienced professionals, profound industry expertise, and customization and innovation capability.

"In rail transportation, during this quarter, we feel excited about the significant high-speed rail ATP contract wins for high-speed trains in 200-250km/h and 300-350km/h, total valued at RMB 687 million (approximately USD 110 million). Besides, our strong R&D capability, extraordinary project management and high-quality and reliable products had ensured our wins on a few recently operated high-speed rail lines, including Xiamen-Shenzhen line, Xi'an-Baoji line, Chongqing-Lichuan line and Wuhan-Xianning line. Those high-speed rail lines are all equipped with our high-speed rail signaling system. We will continue to deliver quality works and work closely with railway authorities in the future. With China's increased rail construction and equipment procurement budget for this year, and exciting prospect envisioned, Hollysys, as a well-recognized rail signaling system provider with strong R&D capability, solid execution and reliable products, will continue

Saft to Supply Batteries for Gas Meters in China

The Saft Specialty Battery Group has won a further contract to supply A-size LS17500 cells to one of China's top five smart domestic gas meter OEMs. These units will power the meter over a 10-year plus service life: Saft Lithium-Thionyl Chloride batteries provide a nominal 3.6Volts and offer 3.6Ah capacity. Self-discharge rate is low, being less than 1% after 1 year of storage at 20□C. Last year, the first Saft contract won for such supply to China was for 500,000 units: the total market for domestic gas meters in China is predicted to reach 24m units in 2016.

Saft is the world leader in batteries for such metering applications. It has used field and laboratory data collected over more than 30 years to develop a unique life□time model that enables the expected life of primary cells in this demanding application to be predicted accurately by considering the specific utilization profile. Data used by this model includes base current, pulse currents, cut-off voltage and temperature range. Calculated results are combined with results from bench tests, which sometime require years to conduct, to produce the most accurate life prediction.

It's Earnings Season!

Continued… and Customer Stories from Emerson Exchange EMEA

to penetrate China's vast railway construction market and achieve significant results.

"For the overseas industrial automation and rail transportation expansion, we are sending qualified and experienced engineers from China to overseas, and recruiting local engineers to expand our overseas team. With our proprietary technology and products, industry expertise and strong competitive advantages, together with our expanded local channels through Bond and Concord, we will continue to make exciting achievements in the international market in both industrial and rail transportation fields, and creating value for our shareholders."

Customer Stories from Emerson Exchange EMEA

At Emerson Exchange in Stuttgart this April, Bob Karschnia introduced several different customer presentations that show how business critical sensors – what Emerson calls pervasive sensors – is becoming increasingly significant when linked with WirelessHART. Peter Zornio, chief strategic officer for Emerson, is forecasting that the new pervasive sensor push will open up a market equivalent to 60% of the current process sensor market. Emerson is pushing hard here to establish a dominant market position before the other suppliers can also get a foot in the door. A significant comment made by Zornio in his introduction to this session was that the targeted areas for business critical sensors – safety, reliability, energy and other efficiencies – has provided a challenge for management to accept these new system options, when they are constantly looking to employ "less staff" as a mantra. But the new, younger, cheaper staff are not like the old dogs, who don't like new technology ideas, and the Millenials are embracing the capabilities of pervasive sensing. The implication made was that once the ideas get a foothold on a site, they are taking off, maybe faster than Emerson had anticipated. The presentations then focused on those three monitoring areas.

Safety – tank and pipe leaks

Lost time accidents are a driver that makes management take note of these new sensor techniques: Karschnia also commented that Emerson was adding technologies to their range to serve this market, one example being the introduction of the Groveley Detection wide area gas leak monitoring systems. Tom Kenis, an instrument engineer from the BP chemicals plant in Geel, Belgium explained in 2008 the authorities in Belgium inspected the storage tanks and bunds at Geel and asked for improved leak sensing systems and procedures. Outputs from these detection systems are monitored at each tank area and transmitted to the control centre alarm point using Rosemount 702 discrete wireless transmitter systems. The final system has enabled BP to reduce operator tours to once every 12 hours, which also improves safety for the operations staff. BP is adding temperature measurement to the same wireless system, as a further safety monitor.

Reliability – pump monitoring

David Hambling, an instrument engineer from SABIC Petrochemicals on Teesside, explained that their four Sundyne ethylene export pumps were on a permanent vibration monitor and also on an 8-day comprehensive manual data collection system, but this had not prevented frequent failures. Emerson introduced their CSI 9420 PeakVue wireless vibration transmitter linked to the existing Emerson WirelessHART system on the SABIC Olefins plant. Hambling said that after only five days the Peak-

TCI Does Solar Project

TCI, LLC (www.transcoil.com) handed out a case study at the CSIA Executive Conference in April describing a "Harmonic Filter Solution Applied to Massive Solar Energy Project." The ***INSIDER*** is fascinated.

When the Crescent Dunes Solar Energy Project near Tonopah, Nev., was having power quality problems, TCI installed more than one harmonic filter, improving the power factor and reducing costs while meeting IEEE-519 requirements.

Crescent Dunes will generate enough solar-electrical energy to power 75,000 homes. 17,500 independently controlled mirrors, or heliostats, are positioned to reflect the sun's energy to a central collector at the top of a 640 foot tower, where molten salt is heated from 550 deg. F to 1050 deg. F. The superheated salt allows the project to continue to produce electricity at night by producing steam. TCI's solution uses 347 line reactors and six 300 Amp active harmonic filters to bring this installation into compliance with IEEE-1519. The line reactors reduce high load, while the filters mitigate harmonics and improve power factor.

Customer Stories from Emerson Exchange EMEA ...continued

Vue was indicating severe pump problems, whereas the old system still said the pump was running fine! This introduced a quandary for the site management, but they pulled the pump, and discovered the top idler gear had tooth damage, with one tooth missing and swarf in the oil. Had this swarf circulated down into the lower part of the pump, a catastrophic failure would have resulted – the Peak-Vue saved between GBP20k and 40k ($32k-64k) by providing the advance warning. In a subsequent incident the PeakVue detected a problem with a ball race bearing where the balls had started to fall apart. Karschnia mentioned that a similar positive result had been reported at the US Emerson Exchange, where a regular problem existed on a refinery pump, where once a year a fire was caused as a result of a seal failure. Wireless monitoring using similar Emerson CSI monitoring systems had solved this problem over the last few years.

Efficiency – steam trap performance

Emerson described an application for their wireless steam trap monitoring sensor, used by Tanatex Germany, a producer of plastic materials used in the clothing industry, situated in the chemical park next to Bayer at Leverkusen. The EU requirement placed on all large industrial energy users is to achieve a 20% reduction in primary energy use, and with Emerson, Tanatex decided to initiate a steam trap monitoring program, starting with the larger diameter steam lines. Live steam losses with a 6 bar steam line, as used at Tanatex, from a 25mm trap jammed open, would amount to 100Kg of steam per hour. A closed trap would cause poor process efficiency, because of the loss of the steam heating function. Working with Emerson, 98 trap monitors were installed in two days, with each trap location being identified over the wireless system. The result was that 13 traps were identified as blowing through, and solving these problems alone gave a system payback in a few months, with a direct loss equivalent to Euro 40k per annum eliminated.

New technology approach for offshore platform

Emerson announced last October a contract to automate the production platform on the Solan field, which is situated West of the Shetland Isles. This was also featured at the Emerson Exchange EMEA, because Emerson was the Main Instrumentation and Electrical Contractor. Emerson used a considerable number of wireless measurement and control sensors, taking advantage of the often quoted reduced effort needed to use signal cables. A major feature of the platform is that it will be unmanned after the first year or so, and therefore there are radar and CCTV camera systems (from IVC, Industrial Video & Control) monitoring the surrounding area, as well as CCTV on the decks themselves – the cameras are ATEX approved, complete with wash/wipe systems. They are not only for intrusion detection, but also for monitoring for any oil spills. The cameras will monitor wave height automatically, and focus in on any area where the wave height drops, for operators to see if this is caused by any oil on the water surface! So the security from the cameras includes environmental security, as well as safety. The operational control of the platform will be sited in Aberdeen, linked to the platform by a 4.5MB Q-band dual path redundant satellite communications system. Power for the platform will be mainly from the natural gas produced by the well. The oil produced will be collected from a large subsea storage tank, by a regular tanker visit.

Nuclear power in Brazil

Westinghouse sees potential for AP1000 nuclear reactor based power plants in Brasil, and has established an office in Rio de Janeiro to strengthen ties with regional suppliers. Westinghouse has undertaken service work on the Eletronuclear Angra fleet of reactors for the past 15 years, and has worked on fuel and manufacturing technologies with Indústrias Nucleares do Brasil.

...and in China

China has 20 uranium powered nuclear plants in operation, and another 28 under construction. Because of the increasing problem of smog, and air pollution from coal fired plants, China has brought forward the planned schedule for the development of a nuclear plant using thorium instead of uranium. A team of Shanghai based researchers have been told they have ten years to develop a design for this new style of plant. Currently 430 scientists and engineers are working on the project, but this number will rise to 750 by 2015, when they expect to fire up a prototype solid fuel thorium reactor. The Shanghai Institute of Applied Physics expects to have developed a design for one that uses the more advanced - but problematic - fuel, molten thorium fluoride, by 2017. Thorium reactors are predicted to be substantially safer than the uranium fuelled reactors most utilities use today.

FIRST Robotics Championships!

Proving that kids love engineering for 25 years!

More than 12,000 students from around the globe traveled to St. Louis, Mo., at the end of April, to put their engineering skills to the test at the annual FIRST (For Inspiration and Recognition of Science and Technology) Championship, held at the Edward Jones Dome.

FIRST Robotics Competition in St. Louis, MO

The three-day event came down to a heart-pounding conclusion Saturday night in front of a roaring crowd of 20,000 when four teams from San Jose, Calif., Bloomfield Hills, Mich.; Dallas, Texas; and Holland, Mich., won the coveted FIRST Robotics (FRC) Championship Winning Alliance. In this year's game, "Aerial Assist," FRC teams took to the field, where competing Alliances scored points by throwing balls over a truss, catching balls, and putting as many balls in goals as possible. The more Alliances worked together to score, the more points their Alliance received. This year, 68,175 students on 2,727 FRC teams in 17 countries participated in 98 Regional and District competitions.

Will.i.am and FLL participants

In all, more than 12,000 students, ages 6 to 18, participated in the Championship events. Several other U.S. and international *FIRST* student robotics teams earned honors for design excellence, competitive play, research, business plans, website design, teamwork, and partnerships. A not-for-profit organization founded in 1989 by inventor Dean Kamen, *FIRST* inspires young people's interest and participation in science and technology.

"This country celebrates sports and entertainment, but wealth is not created by these ventures; it is the result,"

said FIRST Founder, Dean Kamen. "It's a passion for science, technology, and innovation that have allowed these industries to prosper. Take what you have learned here and solve the world's problems."FIRST competitions include the FIRST Robotics Challenge, FIRST Lego League, Junior FIRST Lego League and the FIRST Tech Challenge. Competitors range from Kindergarten to Senior in High School. A wide variety of industrial and manufacturing companies support FIRST, including ISA, Rockwell Automation, ABB, Siemens and many more.

Intrinsic safety by surge protection

Phoenix Contact has expanded their capability in offering their Plugtrab PT-IQ surge protection systems for hazardous areas with an interface that can be installed directly into Ex Zone 2 hazardous areas. The intrinsically safe circuits from this device can then be routed into the hazardous areas, up to Zone 0.

Signaling on the container

The controller for this Plugtrab system can power up to ten surge protection devices on one mounting rail, and still makes the device monitoring signals available back in the safe area, to indicate any faults or damage to the voltage limiting components.

Atout Shows Cross-Correlation Two-Phase Flow Meter

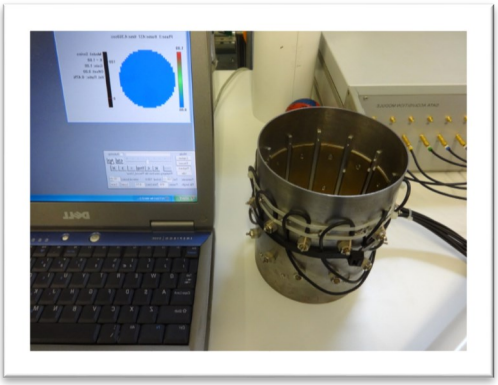
"I love it when a plan comes together." This was a quote from George Peppard, in the A-Team, in 1983. But that was too early for the cross-correlation two phase flowmeter to become a reality, as it was only 7 years after I first saw prototypes with Dr Maurice Beck at Bradford University in 1976. My job then was to investigate University developments, to see what could be developed into a viable commercial product for Bestobell Mobrey. We decided not to take up the project, but Maurice Beck continued with this type of research, subsequently as a Professor at UMIST in Manchester. The cross-correlation function took much more computing power than was easily available at that time, but the concept was attractive, particularly to people dealing with multi-phase oil-well flows, dry product flows and other measurements using non-contact sensors. Later, this included people such as oil and oil service companies, like Schlumberger, and sensors for solids monitoring applications, such as Endress+Hauser.

Atout's Andy Hunt

The technology nearly 50 years later

So it was a real pleasure to catch up with what seems to be the culmination of this development process, at the demo facility of Atout Process in Southampton. Andy Hunt, managing director of Atout Process, has worked on the concepts involved with this flow meter and flow visualization system for over 12 years, with colleagues in Tomoflow technology. Tomoflow developed and patented much of the electronics and software needed: the technique is similar to tomography, but unlike a body scanner, taking 5 -10 minutes for one scan, it completes a scan across a pipe around 600 times each second – or even faster in some solids applications. Dr Hunt has an oil industry background, and at one time worked for Schlumberger on these techniques, with Prof Beck and his colleagues. So around 5 years ago he set up Atout and licensed the Tomoflow technology for commercial applications development in relation to process applications. Over the last 5 years Atout has developed sensors and application expertise for visualizing and computing the density profile of flowing materials, across the pipe section, using non-contact, non-penetration

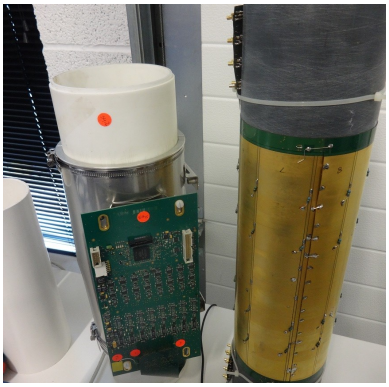
> **...the technique is similar to tomography, but unlike a body scanner, taking 5 -10 minutes for one scan, it completes a scan across a pipe around 600 times each second...**



Atout Sensor with Laptop Visualization

Atout—Continued...

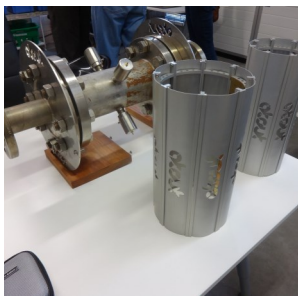
capacitance measurements, normally working through a plastic or similar pipe wall material. Typically using two sets of 8-electrode arrays, spaced along the pipe, and computing all the inter-electrode capacitances, these can provide a picture of the material density within the pipe. Cross-correlation functions, now reduced to a minor part of the major computing power applied, calculate the transfer speed of the mass pattern between the two arrays.



Sensor around a food grade pipe

Practical demonstrations

The results were impressive. Placing a dielectric rod (of diameter <20% of the sensor) within the sensor, the screen visual representation clearly shows the rod position, movement and size, within the blue on the photograph that represents a clear pipe. In the picture the electronics unit behind the sensor is a desktop research unit: the second picture shows a sensor with the electronics packaged around a food grade plastic pipe sensor, which would then be sleeved. Dropping 6Kg of wheat from a hopper through such a sensor showed the clouds of wheat on the PC screen, as the areas of higher mass density. Flowing at 2m/sec on average for around 15 seconds the mass total was computed second by second, and the total mass flow displayed within 1%, on each of several runs. Providing such mass flow data to wheat processing/milling systems is one of the first applications likely, and other applications on biofuels, plastic pellets, minerals and cement are possible. For the technophiles, the capacitance changes being monitored are as small as a few tenths of a femtofarad for the widely separated sensor plates: a femtofarad (fF) is one thousandth of a picofarad, and the sensor cables themselves have a standing capacitance of around 2pF.



Steam Sensor

Monitoring the dryness of steam

Water droplets carried in steam flows can have a devastating effect on turbine blades and similar high speed equipment. Detecting the presence of wetness, or water mists, in steam flows, is a major safety requirement for power generation systems. One of the Atout sensor systems, packaged inside a stainless steel flanged pipe section, has been tested on a live 'dry' steam line, at 190 deg. C and around 25 bar, and successfully monitored the wetness levels: as far as anyone could estimate! Free air tests show the system is well able to detect the passage of a single small drop of water falling through the sensor.

Monitoring wet oil flows

The ultimate flow meter application is to monitor two and three phase flows in the oil industry, for wells and allocation metering. The Atout flow metering software goes a long way to achieving this, and certainly allows the visualization of the flow profiles and mass density within a pipe flow. Some videos of this visualization are shown on their website. Undoubtedly this is why the UK Technology Strategy Board has given Atout Process a grant to demonstrate their technology, and why there are regular visitors to discuss such potential applica-

That Metso and Valmet split?

Metso and Valmet are now two totally different businesses based in Finland.

Valmet (valmet.com) primarily serves the paper, biofuels, and renewable energy production plant markets. Metso (metso.com) also serves the paper industry with automation systems and instrumentation. The Metso DNA automation system is for steam boiler and energy control/ management systems on CHP power plants using renewable fuels.

So it is Metso who announced a DNA management system for the Kaukas mill for UPM-Kymmene, in SE Finland, using model predictive control to balance steam consumption and generation, following spot prices to provide electricity generation at the most favourable times – from a biomass-fired power plant. Valmet has announced it is to be the boiler and flue gas cleaning equipment supplier for a new power plant in Naantali, Finland, which will also serve Turku city. This will be a multi-fuel plant, using biofuel, primarily local wood chips, replacing the existing coal fired power plant. This is a major project win for Valmet, important in its first three months of trading, valued at around Euro90m ($125m).

Atout continued...

tions.
A major achievement has been that Atout Process is a participant in one of the latest European projects run by NEL in East Kilbride, which aims to establish a reference measurement network and standards aimed at improving the accuracy of subsea multiphase flow measurement for the oil and gas industry. Atout Process will work alongside National Measurement Institutes with industrial and academic partners from the UK, Czech Republic, Germany, the Netherlands and France.

Andy Hunt commented, "This is a fantastic opportunity for Atout to show what we can do with our advanced flow imaging technologies. We believe that flow imaging systems will become a fundamental part of new multiphase flow measurement standards".

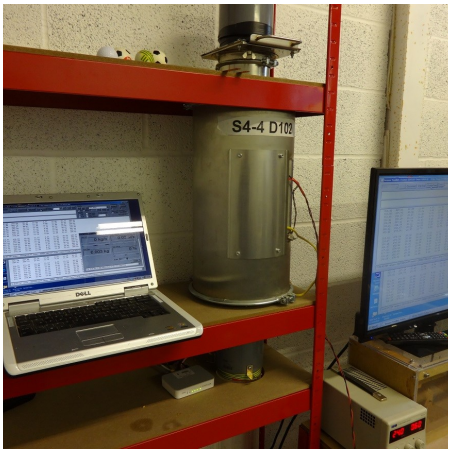
Atout has built the sensor packaging needed to fit their capacitance imaging device and flowmeter onto the NEL test lines, as seen in the picture.

As Hunt also commented, if the Atout meter is what is used to establish the industry measurement standard, then this will bode well for future applications. Indeed, there is very little else that the researchers can use to get any picture of what is happening in the pipe, to define the flow structure. Atout forecast that one of their prototype multi-phase flowmeters will be installed offshore inside two years.

> "We believe that flow imaging systems will become a fundamental part of new multiphase flow measurement standards."

The processing technology …..

People often have a bias against a technology, and both correlation and capacitance have their detractors: we all know the history. But what Atout have done is taken the cross correlation technique and used processing power to go deeper into the flows within the pipe, into each little box, splitting out different 'clouds' and identifying their mass, and their velocity.



This avoids making some of the base assumptions previously used in cross-correlation, which were not really valid.

The processing technique can work in other formats too, for example the same flow visualization tools could be used on a multi-electrode electromagnetic flowmeter, or even a part filled magflo meter: such products have also been considered for multiphase flow.

-Nick Denbow

We are beginning to see the advantages of coupling processing power with sensors, as I have been predicting for a decade. Intelligent sensors with high power computation will yield information not available by other means, and do so at less cost than previously, too.
Couple that to the additional advanced process control algorithms available in the cloud, and we can see the benefit of these technologies.

— Walt Boyes

APICS and APICS Foundation Honor Rockwell Automation

At the APICS 2014 Shanghai conference, Rockwell Automation Asia Pacific Business Center (APBC) was honored with the APICS Corporate Award of Excellence—Asia.
The award recognizes Rockwell Automation APBC's commitment to the training and development of its manufacturing, scheduling and inventory planning professionals. They improved supply chain operations, processes and optimization and elevated the strategic capabilities of their organization.
APICS CEO Abe Eshkenazi, said, "Rockwell Automation APBC recognizes the connection between supply chain excellence and engaged, strategically focused professionals."
Ernest Nicolas, regional director, Asia Pacific Manufacturing and Pit Wee Yeoh, plant manager, Singapore Operations, accepted the award. Singapore is home to Rockwell's Asia Pacific Business Center (APBC) which was established in November 2005 in a market vital to the company's growth. The APBC, which houses Singapore Operations has over 600 employees.

Thales promotes Cybersecurity business line

The Thales Group occupies one of the major office developments on the outskirts of Basingstoke in the UK. The building was known for many years as Thales Missile Systems, from the name on the outside.

It was not a company that immediately sprung to mind as an expert in control systems and information technology.

Last autumn saw the launch of a new 'Cyber Integration and Innovation Centre', and the associated business activity, housed within this building, a GBP2m ($3.2m) facility with fully isolated and screened computing laboratories, designed to allow improved cyber security and testing for critical national infrastructure, governments and companies.

Screened, because the centre has over 6000 pieces of computer malware, that can be used to test mirror copies of client networks, and where managed cyber-attacks from one lab onto an adjacent lab can be used to train staff how to protect systems, spot vulnerabilities and respond to breaches, including mass 'Denial of Service' (DOS) attacks. "We can model networks for clients in a safe environment so we can upgrade, update and change things before they go live. This is particularly important in safety critical industries, such as a nuclear power station," said Sam Keayes, a Thales vp, now presumably within a new business division formed recently known as the Critical Information Systems and Cybersecurity business line. Using equipment and technology from strategic partners like Spirent, Encase, FireEye and Mandiant, Cevn Vibert, the centre manager, commented that Thales experts can pick up and mirror a site computer system, bringing the whole infrastructure back to the lab, to stress test it against cyber-attack, jitter, and other issues.

Cevn Vibert of Thales

This is a very necessary service when Thales systems run the majority of the world's air traffic control, and their encryption is used to protect 80% of the world's bank transactions, which include 3.7Bn transactions per annum via BACS.

Thales is a French owned group, which was originally called Thomson-CSF. The only slight problem with the simpler name is that it is pronounced "Talliss". Their acquisition of the original business of Ferranti Computer Systems allows the claim that they have been providing technical support for the UK fleet of nuclear power stations for the last 25 years, which is a continuing responsibility, as the service life of these stations continues to be extended.

Based on Ferranti expertise

I am not old enough to know the history behind some of the businesses that make up the current Thales Group. For that sort of archival knowledge we have to go back to Wikipedia, and even to Andrew Bond, the Founding Editor of the ***INSIDER***, who remembers the original UK based DCS manufacturers and vendors from the 60s and 70s – Ferranti, Kent and GEC Elliott.
Ferranti was formed in 1882 as Ferranti, Thompson, and Ince. The Thompson in the name is much better known as Lord Kelvin.

Much later the company played a major part in WW2 in the development of radar, and gyro gunsights for the Spitfire. In 1949 they produced their first multi-input battlefield situation information system.

At the same time they started to develop computer systems: eventually the Government under Tony Benn organized an industrial consolidation which

Azbil Telstar Opens New Facility in Bangladesh

The Azbil Telstar subsidiary in Dhaka, Bangladesh, opened on April 2, 2014.

Azbil is the automation company formerly known as Yamatake. Telstar is its system integration arm, one of the 10 largest suppliers to Asian pharma companies.

Azbil Telstar's Chairman, Ton Capella

The new center is specifically focused on reinforcing a professional and specialized service in the Asia-Pacific region's pharmaceutical market, and is in response to a requirement to promote growth in a region where the company has been active over the past 10 years. At the same time, Azbil Telstar is reinforcing its global activities in engineering, construction and manufacturing processes for development of turnkey plants and installations for local and multinational pharmaceutical companies with high growth potential.

Azbil Telstar operates in over a hundred countries and has 7 production plants, 7 technology centers and 13 consulting and engineering services centers all over the world.

Thales continued...

led to the set-up of ICL, International Computers Ltd, in 1968. This deal restricted Ferranti to the industrial computing market, rather than the commercial, and Ferranti developed the Argus range. In 1987 Ferranti purchased International Signal and Control (ISC) in the USA, a defence contractor, whose business turned out to have been based on illegal arms sales. ISC was prosecuted for fraud, and this forced Ferranti into bankruptcy in 1993.

In 1987 Ferranti purchased International Signal and Control (ISC) in the USA, a defence contractor, whose business turned out to have been based on illegal arms sales.

The Ferranti Computer Systems operations were acquired out of bankruptcy by Syseca, the IT arm of the French Group Thomson-CSF. Thomson then changed its name to Thales, and Syseca became Thales Information Systems.

The other UK producers

Andrew Bond sees the rest of the UK history of DCS manufacturers as intertwined with the career of the late Tony Benn MP, who became Minister of Technology in the Labour Government of 1964-70, and secretary of State for Industry from in the 1974-79 administration. George Kent needed rescuing in 1974, possibly because of the strains of the investment in their new DCS, the P4000, and Benn wanted Arnie Weinstock's GEC to take them over, out of the two options available: but his worker democracy approach backfired, and the workers voted to opt for Brown Boveri, as a better choice for their new owners. Following the Brown Boveri merger with ASEA in 1988, the P4000 became just another of the original control systems within the ABB group.

Meanwhile GEC under Arnie Weinstock was not enthusiastic about process instrumentation or automation, and already had business links with Fisher valves, so with Benn's encouragement put all the GEC automation interests into a joint venture with Fisher, which included their own DCS and the systems made under license from ICI, Imperial Chemical Industries, which they had developed for their own plants. GEC had acquired the Elliott Brothers business within English Electric in 1968. Monsanto had acquired Fisher Controls in 1969, and much later sold the business to Emerson in 1992: at some time in this period Weinstock backed out of the JV and sold out from any involvement in process automation.

Ferranti Argus computers

The Argus was first developed for military duties – in 1958 used for the ground-based control of Bristol Bloodhound missiles – and were also offered as industrial control computers from the 1960s into the 1980s, for factory and plant automation.

They were widely used across Europe and in the UK: typical installations for the Argus 500 were in chemical plants for process control - and nuclear power stations, for process monitoring.

The first such Argus sale in 1962 was to ICI, for a soda ash and ammonia plant in Lancashire.

Another significant application was for Police command and control installations, where one of the most famous was in Strathclyde: here maps were provided by using a 35mm slide projected onto a VDU screen.

The Argus 500 was one of Ferranti's best-selling products, particularly to oil platforms in the North Sea in the 1970s.

The Argus 600 was an 8-bit machine, and the Argus 700 used 16-bit architecture, whose design started in 1968, and they were in production until the mid-1980s: these are still operational at several British nuclear power stations in control and data processing applications.

Current declared activity

Thales do not mention a significant part of their business activity - a necessary culture, developed over the years

MTConnect and Beckhoff on Google Glass

Joel Neidig, an engineer at Indiana Gear has been awarded a $75,000 prize for "Expanding Manufacturing's Vision: MTConnect and Google Glass." Mr. Neidig coupled MTConnect functionality with Google Glass — a camera, touchpad, microphone, email and Internet connection built into a spectacle frame. The MTConnect Glassware app, will reveal a view of the manufacturing process that has never been seen before: liberated from laptops and hand-held smart devices. The app benefits every department, from the shop floor to the management suite. Getting and sharing information is as intuitive as using a smartphone, but glasses do not distract from a task like handheld devices.

Beckhoff Automation presented Google Glass as a new concept for machine operation at the SPS IPC Drives. The glasses were primarily developed for the consumer sector; however, Google Glass can also be used in the industrial environment as a supplement for operation and observation in production. Andreas Thome, Product Manager PC Control, said, "Google Glass has the potential to change or at least to supplement the operating philosophy on the machine. The Google glasses could represent a good example of the fusion of Internet technology and automation technology within the framework of Industry 4.0."

Thales continued...

since WW2, because of involvement with military projects. This ethos remains, in particular in not declaring where security, cyber-security, and emergency management resources might be deployed, whether military or commercial. However, there is an interesting parallel between Thales and EDF, of France, who now owns all the operational nuclear power plants in the UK. Thales is quoted as a long term delivery service partner with EDF.

Following the Fukushima event in Japan, EDF-Energy NGL undertook a rigorous assessment of the resilience of its fleet of UK nuclear power stations, against the highly unlikely occurrence of an extreme weather or other natural event.

Part of a suite of safety enhancements resulting is the provision of a mobile emergency response capability that could be deployed should such an event occur.

Thales committed to provide 5 sets of a containerised DCIS (Deployable Communication and Information Systems) for this duty by 31st March 2014.

As a nuclear emergency response capability, each DCIS provides a transportable and deployable containerised unit to monitor critical plant systems and relay essential data through a resilient communications network, to provide emergency response decision makers with the information that they need to make the best possible decisions.

Separately, Thales has a co-operation agreement with Schneider Electric for the development of cybersecurity solutions and services to protect command-and-control systems from cyber-attack in customer installations in France. This includes computer attacks launched from plant management systems, unauthorised access across wireless networks and malware introduced via USB memory sticks.

While we are becoming familiar with the iOps concept from Emerson, and the Honeywell Collaboration station, the Thales Command and Control Centre is maybe a couple of grades more advanced.

Critical national infrastructure protection also includes work with oil and gas installations, petrochemical plants and pipeline systems. Thales quotes their integrated security protection systems with perimeter and access control, using CCTV etc, for twelve of the SABIC sites, and advise that Aramco refineries have similar high technology systems, supplemented by video motion detectors – the Ras Tanura complex is another site where there is such a perimeter security system.

Crisis management systems

The authorities and forces responsible for public safety and security must contend with increasingly frequent and wide-ranging incidents, from crime and accidents to natural disasters and crisis situations.

This is one of the areas Thales sees as a major activity area and strength of their capability. Thales has developed a new solution incorporating the key conventional functions — situation awareness, management of command information and crisis management system resources — combined with new modules, such as advanced decision support and asset coordination.

These systems are quoted as deployed in the Ciudad Segura (secure city) project in Mexico, the crowd flow and density monitoring systems in Mecca, and the BDSP public security database for the Gendarmerie Nationale in France, with systems that incorporate the deployment of sensors in UAVs. There are many more examples that cannot be quoted.

Whilst in the process industry we are becoming familiar with the iOps concept from Emerson, and the Honeywell Collaboration station, the Thales Command and Control Centre is maybe a couple of grades more advanced.

Multivac uses mGuard for Remote Service

Multivac, a provider of packaging solutions, chose mGuard from Innominate, a Phoenix Contact company for edge firewalls.

Secure Technology, Easily Administered

mGuard

"The Innominate mGuard appliances convinced us due to their security features, good configurability, convenient rollout using the mGuard Device Manager, and compact design," said Multivac's Christopher Kleinert.

"As a serial machine manufacturer, we equip a wide range of machines with the IP/VPN remote service technology. We use the mGuard Device Manager to prevent application errors and manual input mistakes during rollout and to transmit the configuration in the most automated way possible," said Kleinert.

The Device Manager takes over the configuration, rollout, and operational management of the mGuard devices. Christopher Kleinert praises the collaboration with Innominate: "We were never left to configure the technology alone. We developed the settings together with Innominate and the finished version was tested by Innominate experts several times and certified as our ideal rollout basis."

Thales continued...

Part of the suite of labs in the Critical Infrastructure Protection Facility in Basingstoke featured a combined system for perimeter security, CCTV, process control – including a DCS and a PLC (both from well known names) with valves in control loops, fire and gas alarms and access control, which enabled demonstration of the possible effects of a cyber-attack.

This has been used to show legislators and management - and train operators—about the vulnerability of such systems. Vibert explained "Our customers manage mission critical infrastructures and benefit from our holistic integrated security solutions. The market has evolved from discrete bespoke islanded systems to multi-site networked control rooms which require our integrated security techniques. These solutions cover people, operations, security, process, maintenance, business and cyber security for holistic situational awareness. This facility enables Thales to test, educate, demonstrate and explore these innovative approaches to our customer's real needs." It is no coincidence that Thales is exhibiting this part of their technology at International Security and Resilience exhibitions across the Middle East, and are targeting Governments and operators of critical infrastructure projects worldwide.

* * *

Kristian Dubbick Dies

KROHNE, Inc. has announced, "with deep sadness the death of Kristian Rademacher-Dubbick, former managing director and owner of KROHNE, who passed away at the age of 92. Mr. Rademacher-Dubbick, grandson of founder Ludwig Krohne, took over the company in 1949, leading the company's growth and developing innovations that helped it survive the ups and downs of the post-war economy. He developed four key concepts that have continued to guide KROHNE as it rose into the ranks of the leading measuring instrument producers: preservation of the company's independence, continual growth of its measurement program, loyalty to its customers, and extension of its activities beyond Germany's borders. KROHNE was one of the first measuring instrument companies to be present on all continents, and was only the second German company after Volkswagen to establish a joint venture company in Shanghai in 1986.

Kristian Rademacher-Dubbick

I was the first rep hired by Krohne America when they moved into the US market, and I was privileged to meet and get to know Mr. Rademacher-Dubbick. He was an amazing individual, and he has been one of my automation heroes since I met him in the late 1970s and early 1980s. I remember standing on a street corner in Duisberg arguing with him and trying to get him to agree to provide ultrasonic cleaning electrodes for a job I was bidding magmeters on. "Ultrasonic cleaning," he told me gently, "is like prayer, Walter. You have to believe it is working." I was astounded to see that his world class collection of Expressionist and other modern art was hung in the factory. "The workers helped me buy

> **"Ultrasonic cleaning," he told me gently, "is like prayer, Walter. You have to believe it is working."**

Growth Brings Change—HIMA Adds New Senior Management

Over the past 10 years, safety automation expert HIMA has doubled its sales, tripled its workforce and increased its number of Group companies worldwide from two to 16. To ensure continued growth and success, the company has created the new positions of chief executive officer (CEO) and chief financial officer (CFO).

New HIMA Team

Steffen Philipp, Managing Partner since 1999, continues to oversee the company's strategic alignment while taking on more duties as a partner and investor. Philipp, who took the company into its fourth generation, will drive structural and overall economic development of the firm while preserving the character of the financially independent, family-run organization. Additionally, Philipp will act as HIMA Group ambassador to key customers and representatives from government, science and business.

Sankar Ramakrishnan, Head of Marketing since October 2012, was appointed CEO in October 2013. Reinhard Seibold, who assumed the newly created function of CFO on May 1, completes the new management team.

Dubbick continued...

them with their labor," Rademacher-Dubbick said to me, "so why shouldn't they get to see them as they work?"

A world-class artist himself, he surrounded the company headquarters with art, not just painting, but a Japanese garden as well.

Richard Gessner
Ruhr-Industrielandschaft from the Krohne collection

Aside from his achievements in expanding the company's global presence, Mr. Rademacher-Dubbick also had immense influence on the development of the company. He insisted on developing a ceramic measuring tube for electromagnetic flow meters as well as straight tube Coriolis mass flow meters even though the industry thought that it would be technically impossible. To convince his employees, he tested prototypes of ceramic measuring tubes in his kitchen at home by throwing frozen tubes into boiling water to test their ability to withstand the type of temperature shock they would encounter in food and beverage industry steam-cleaning applications. I installed them in a tomato cannery in Northern California, where they performed exactly as he said they would. "Mr. Kristian Rademacher-Dubbick will be missed greatly by all members of his personal family and the entire KROHNE family," said Stephan Neuburger, managing director of the KROHNE Group. "Since handing over management responsibilities in 1979, he has continued to actively follow the outstanding development of his company in recent years, and was known for warmly engaging with employees at company events."

> **"The workers helped me buy them with their labor," Rademacher-Dubbick said to me, "so why shouldn't they get to see them as they work?"**

Kristian Rademacher-Dubbick was one of a kind. He was an artist, a leader, a man who believed in the dignity of the worker, and who never forgot who brought him his income. I learned a great deal from watching him, and I am very glad to have known him.

„Was man tief in seinem Herzen besitzt,
kann man nicht durch den Tod verlieren."
J. W. v. Goethe

Kristian Rademacher-Dubbick
* 30. Juni 1921 † 7. April 2014

Ein langes, erfülltes Leben ging zu Ende.
In Liebe und Dankbarkeit nehmen wir Abschied.

Nils Dubbick und Susanne Selbeck-Dubbick
mit Sophie und Julian
Kristian Dubbick und Eva Sjödahl-Essén
mit Katharina, Cissel und Lili
Michael und Akiko Rademacher-Dubbick
mit Salomé
Hilde Mercurol-Dubbick und Yves Mercurol
mit Léa und Louis
Ghislaine Dubbick und Denis Solvay
mit Laurelle, Moritz und Odile
Jeannette und Christian zu Fürstenberg
mit Tassilo
Matthias und Brigitte Dubbick

47058 Duisburg, Waldsteige 14

Das Auferstehungsamt wird gehalten am Montag, den 14. April 2014, um 11.00 Uhr in der Karmelkirche am Innenhafen, Duisburg-Stadtmitte, Karmelplatz.
Daran anschließend erfolgt die Beisetzung auf dem Waldfriedhof, 47055 Duisburg-Wanheimerort Düsseldorfer Straße 601.

ABB Tries a Virtual Automation & Power World

Complete with Keynote Speaker and technology sessions, ABB has created a new online Automation and Power World (APW) education series. The first **SmartStream Digital Conference**, *Optimizing technology for the changing face of industry*, will take place live online on June 4 from 11 a.m. – 4 p.m. EDT. This is certainly less expensive than holding an Automation and Power World user group meeting every year. ABB has already moved it to an every-two-years event, but this may be an experiment to see if they can do away with it entirely.

The conference will feature 25 sessions and 60 speakers organized around six learning tracks with industry or discipline focus. All sessions will be archived and available for on-demand viewing. Registration is free for industry professionals.

Online presentations will cover the most pressing business and operational issues in automation and manufacturing: an aging workforce, cost pressures and infrastructure.

Just like the real A&P World, there are networking opportunities with ABB subject matter experts and industry peers, as well as an opportunity to earn Professional Development Hours (PDHs).

Keynote speaker, Richard Worzel, best-selling author of "Who Owns Tomorrow?" will address how the world is changing and what to do about it.

June's event will focus on automation, with a second power-focused SmartStream Digital Conference scheduled for November 2014.

End of XP Support to Affect Thousands of Industrial Systems…or Maybe Not

Recently, IHS issued a report about the issues for industrial systems at the end of XP Support. Support for Windows XP officially ceased on April 8, 2014, with the exception of a one-time-only fix for the Heartbleed malware. After that, Microsoft will no longer provide Windows XP users with security updates or technical support for the 12 year-old operating system. Microsoft has stated that "PCs running Windows XP after April 8, 2014, should not be considered to be protected, and it is important that you migrate to a current supported operating system."

Issue will impact industrial automation

IHS' report says that the discontinued support impacts millions of both personal and professional users worldwide As the longest-supported Windows operating system, XP is most widely used in industrial automation.

According to the authors, Andrew Orbison and George Dickinson, cyber security is the largest concern related to the continued use of Windows XP in industrial automation.

Industrial automation's market response

Since the original announcement in 2007 that XP support will end in April 2014, many end users have upgraded to more modern operating systems. Because a large number of end users have migrated in recent years and there is a requirement for many more to follow during the next 12 months, IHS believes that the overall impact on the industrial automation equipment market will be fairly modest. To be sure, a large stock of older equipment with basic flaws in its security architecture remains.

George Dickinson said, "IHS has not conducted a specific analysis on how widely XP is still deployed; there are still a large number of people using XP however. The more security conscious companies, have switched, however a large number of users, particularly in smaller firms, have not switched."

He went on to say, "In 2012 for example, despite the end of XP support fast approaching, nearly 25% of operating systems shipped with IPCs were XP. And while this number declined in 2013, XP was still one of the most popular operating systems. Given that a large number of people were still buying XP, I think it's safe to assume that a large number of existing XP users did not convert."

A spokesperson from embedded IPC and PAC vendor Advantech noted that Windows XP Embedded is still supported until January 12, 2016, and its end of license schedule is January 30, 2017. "So a recommended route is to transit to XP Embedded or Windows Embedded Standard 2009 if available, or upgrade to Windows 7 or a newer operating system."

The INSIDER asked about security issues. The Advantech spokesperson said, "The termination of the support for XP also stops the patch that can stop the security issue from the outside world. If the system is connected to an outside internet, it is possible that the industrial computer will be exposed to a security risk."

Both the Advantech spokesperson and George Dickinson discussed the potential of virtualization over rip-and-replace.

Converting to a virtual machine is one good option, according to Advantech. As far as upgrading is concerned, "It depends. If the current system is equipped with hardware better than Microsoft recommend hardware requirement then upgrade will be a good idea. It is always a good idea for a long term project to consider replacing with a better performance offering from Advantech."

The Advantech spokesperson went on, "Like I said in the beginning, switch to XP Embedded or Windows Embedded Standard will be a good way. Those two operating systems have the same hardware requirement with no compatibility issue."

"I'm sure suppliers are hoping that these IPCs will need to be upgraded," Dickinson said. "There are other options; some companies are offering their own support for XP. This support is going to be more expensive and less trusted than Microsoft's own support, but, this could be the next best thing."

Dickinson went on, "Other users may very well try and continue using XP, either limiting networking, or just hoping for the best. While larger companies tend to be very aware of security issues some smaller firms are still not very security conscious."

He continued, "There are a large number of systems still out there using customized software. Changing the software will be a substantial cost both due to the direct costs of the software itself, but also the costs of having to retrain your staff, costs of reduced productivity while employees learn the new software.

"Some may be tempted to continue using their old software and hope for the best. But it will only be a matter of time until they are targeted."

"In some cases virtualization is a great way to allow XP to continue to be used. Using a virtualized version of XP within a safer operating system will improve security, compared to just using XP."

There's a "but" here, though.

"However virtualization doesn't always support software fully and device support may be limited," Dickinson pointed out.

"Additionally some software licenses prohibit use of software in virtualized environments. Virtualization also generally requires users to have some knowledge of the operating system running the virtualization. So in many cases it will be simpler for users to simply switch to newer operating systems."

Peter Reynolds of ARC provided a kind of voice of reason: "It will be interesting to see this play out. We see many XP operating systems that support plant and factory automation are actually buried deep within the security architectures of the enterprise. This means most XP machines are not internet facing and therefore not exposed to the same vulnerabilities as enterprise business computer assets. An automation practitioner may be quite equipped to mitigate any risk without rushing out to upgrade systems."

THE WAY I SEE IT
Editorial

It Takes More than Numbers to Make an Engineer

In the Frost and Sullivan Perspectives webinar I moderated on May 14, Dr. Tom Edgar from the University of Texas at Austin noted that the situation regarding enrollments and graduation of engineering students, especially in chemical engineering had shifted dramatically and there were now many more enrollments than there were five or ten years ago.

That's great, and will help the huge skills shortage we face in manufacturing and the process industries. But it won't fill the pipeline and keep it full. As near as I can tell, that job is being done to a great extent by Dean Kamen's FIRST organization.

On page 11 in this issue, we profiled the FIRST Robotics Championships, held in St. Louis just down the street from my house. The competition brought together 12,000 of the over 68,000 students from more than 17 countries for the championships.

We have heard over and over that the Millenial Generation doesn't want to do hard work, and engineering is too hard. Kamen's organization seems to be finding the key to what makes them tick.

So, too, are the "how things work" shows on television. There is even an entire cable channel devoted to shows about how things are made.

So, should we leave things to Kamen? Of course not, and we aren't. ABB, Honeywell, Siemens, and many others are doing their bit with internships, scholarships, and just plain encouragement to entice young people into the manufacturing industries.

"...you get to work on a team with highly competent people who are doing important things both for their own company, and for the world."

Once we have them, it's like the Hotel California— you can check out, but you can never leave. The engineering disciplines, particularly the multi-disciplinary field of automation, are sticky, and they tend to capture and keep people who get stuck there.

But it is up to each of us to help bring on new automation professionals, and we need to make sure that, as we get nearer to retirement age (I'm going to be 62 on May 28) we are training our replacements so they can slot right in as we go out the door.

What are you doing to entice the younger generations into a life of manufacturing?

Here's some things you could be doing. Volunteer for FIRST Robotics and help lead a team. You can work with every age from Kindergarten to Seniors in High School.

Once a student has been through the FIRST program, and done four years of it in High School, they probably can get a job as a professional programmer. They've been exposed to LabView for years, and they can pick up other programming languages for PLCs and PACs quickly. Keith Nosbusch, CEO of Rockwell Automation, once introduced me to a young woman they'd hired right out of her Rockwell-sponsored FIRST Robotics team, given her a job as a quality tech, and a scholarship to engineering school. That's called building your own company's pipeline.

There are lots of things we can all do to assist in filling the STEM pipeline. But we have to remember that we need good teachers, good materials, and more interest than just demanding testing, testing, testing. We need to share the fascination of the life in automation and manufacturing with our younger proto-engineers.

It's not just the numbers that make an automation engineer. It's the knowledge that you get to work on a team with highly competent people who are doing important things both for their own company, and for the world.

Go help fill the pipeline.

INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Profile

A Conversation With Chris Lyden

by Joy Ward

Joy: Well, thank you for being here. And I'm here with Chris Lyden, Senior Vice President at Schneider Electric (in the division previously known as Invensys). Chris has had a fascinating life and he's done a lot of things.

Joy: How long have you been in engineering?

Lyden: I got out of school in 1975, and was recruited right away by Honeywell. I began in the production engineering in the factory at Honeywell.

Then I moved into the development engineering group. I held various positions in engineering, training, projects, sales, and marketing with Honeywell. I ended up as a vice president and general manager there before I left and went to Invensys in 2003.

At Invensys I've been head of global marketing, I've been head of strategy, and right now I have a number of the functions that cross the various lines of business at Invensys.

Joy: Obviously you've been around at a lot of different areas and done a lot of different things. What are some trends that you've seen that you are either happy to see or not so happy to see?

Lyden: Well, I think one of the trends that I'm not happy to see is the sort of increased commoditization that's occurring in the industry.

I understand that the purpose of purchasing organizations is to get the best price and to drive commoditization as a tool to do that and I understand the job but what it's kind of resulted in is skinny margins and less innovation in many cases than there have been in the past. So that's one I'm not happy to see.

On the other hand, there is a lot of really great stuff going on with software. There's a lot of really great stuff that has been driven by the closer association with business, with the actual running of the process. So a better understanding of how we make money in this industry. And when I say this I mean the customers, how they make money in this industry, and how we as vendors can help them.

Joy: And as you're looking back over your life in engineering what are some high points; things that you really had either fun doing or have been exciting for you in your career?

Lyden: Ha. I have fun doing everything I do. That's one of my problems. I have too much fun.

Well, when we launched InFusion in 2006 with Invensys-- that was an incredible moment. I've been involved in a number of product launches in my career but I think that one was just amazing. We launched it at the Kennedy Library in Boston. It was just a phenomenal event. Phenomenal technology and it was just a very memorable moment in my long career.

The event was really a demonstration of the value of using compelling collaborative software to integrate an enterprise; to bring people together around work processes and capabilities that had not, at that point in time at least, been very highly collaborative.

They worked together but they had their silos and what we were trying to do was break down those silos and drive collaboration

Lyden continued…

through technology. And I think it worked. We've had tremendous success with that.

We call it an Enterprise Control System because we wanted to not just control process loops but control major business problems in an enterprise. Control profitability.

The only way you could do that was to bring a lot of disparate disciplines together in collaborative fashion because some of it could be done algorithmically but some of it had to be done by humans still, with the help of systems.

Joy: What's important about that, about bringing that collaboration together and breaking down those silos?

Lyden: Well because the organizations tended to have suboptimal approaches to the various pieces of running the business. So rather than having an overall fully optimal approach, each organization would do the very best according to its own measures. Without bringing those guys together, you ended up with a suboptimal overall product and what we endeavored to do (and I think have done successfully) is to enable organizations to bring all the individual optimums together and then optimize them overall, and it's worked out quite well.

Joy: What is important about that for you, that you are a part of that?

Lyden: Everybody wants to be part of something that is ground breaking and different. I kind of grew up at the time in this industry when process control was the compelling mantra and it was very interesting to be part of that, especially at Honeywell in those ages because Honeywell was a pioneer in that space. But as it became more commonly understood, it became sort of taken for granted and less interesting in the marketing place.
What we came out with in terms of controlling the bigger business loop was maybe the next iteration of using those control technologies and capabilities to do something that hadn't been done before. It was unique at that point in time. Now others are starting to do it and do it well but we were really the leaders of that and that's why it was so interesting.

"Everybody wants to be part of something that is ground breaking and different."

Joy: How does it make you feel to have been the leader of that?

Lyden: It was awesome. It was definitely one of the high points of my career.
It's the feeling of being part of something bigger than yourself. It's the feelings of being part of something that you know makes the world better. It doesn't just make money for our company, which it did do, but it made our customers more productive, more profitable, and it made the world better. It enabled them to be environmentally perhaps a little better. It enabled them to run their businesses perhaps a little more efficiently, perhaps use less energy, and so the outcomes that come from something like that make the world a better place, not just my career a better career, if you know what I mean.

Joy: What else do you want to do in your career that you haven't done now?

Lyden: I've got a few things on my bucket list.

Joy: Okay, like what?

Lyden: You know I think I've got a few years left in me but I want be sure that when I go out that what's left behind is enduring.

Joy: Enduring, what's important about that? That you leave behind something that's enduring?

Lyden: Everyone wants to be able to look back and say, I did that or I was part of that. And so much

Lyden continued…

of what happens, especially in the technology world, is fleeting. Technology has a diminishing half-life because it's changing so rapidly.

There's so much technology turnover; so much new innovation going on.

So I'm trying to do things in the job that I have right now that will make sure that I leave a company behind that is a much stronger company than it is today and customers behind that are delighted with the way we innovated and helped them, and colleagues behind that will remember when we did things together fondly. That sort of thing.

Joy: What about Chris the person? What else do you want to do?

Lyden: That's a question I ask myself. All I've ever done my whole life is work. I love my work. It's not been a job; it's been more of a passion so I'm scared to death of retirement. I don't know what I'll do.

If I had to retire I think I'd go crazy so I've got to find something that I can do. But you know, I have great kids, a great wife, beautiful grandchildren, so I have to spend more time with them. Beyond that I have no idea.

Joy: So what's on your bucket list, that's not business related?

Lyden: I don't have a lot of non-business bucket things. I should probably work on that.

Joy: Earlier you were saying you do read for fun.

Lyden: I do. I read a lot. I'm a voracious reader. And ah, one thing on my bucket list that we are planning on doing is I want to go to Londolozi Park in South Africa and just enjoy that, enjoy the African wildlife for a couple of weeks. Other than that, I'm not planning a lot of vacationing. I travel so much that the last thing I want to do is get on a plane or stay in a hotel. I love being home. We do a lot of gardening and landscaping and that stuff.

"When you're my age and you're not getting dirty anymore, if people know you spent a lot of time getting dirty as a younger person then they understand that you have the context."

Joy: Where would you like to see engineering go, and particularly your version, your brand of engineering, so to speak, in dealing with automation?

Lyden: I think that there are some interesting opportunities around process control again, which doesn't seem to be in vogue today. It seems to be sort of matter-of-factly taken for granted.

I think there's some, there should be probably a little bit more emphasis on control technologies and potentially new algorithms and new approaches to control.

I think some of the technology will enable some of that, in that the technologies that we rely on today came from an era that was pneumatic and pretty state of the art for the era in which it came from but today is very rudimentary.

We can do much more definitive things leveraging some of the technology that exists today and some of the mathematical techniques that exist and getting those privatized.

Joy: Any advice for young engineers coming along?

Lyden: Um, get dirty.

Joy: Get dirty?

Lyden: Get dirty. Everybody likes a nice cushy job where you're important and you sit in a cool office but if you really want to be valuable you need to go out there and get some oil on your shoes and get some dirt under your fingernails.

Joy: What's important about that?

Lyden continued…

Lyden: It gives you a sense of context that you wouldn't have otherwise. It gives you an understanding of what people do every day. It helps you have more credibility.

When you're my age and you're not getting dirty anymore if people know you spent a lot of time getting dirty as a younger person then they understand that you have the context. This is not, the process industries and the automation industries, are not fast moving process industries and there is still a lot of value in the history that one brings with them. This may not be there in other industries that move faster but it is definitely there in this industry.

Joy: What's bad about not having a sense of history?

Lyden: Context is so important. When people want to do things, if they don't understand what has been done before, if they don't understand the environment that the work actually happens in, they may not make the right decisions.

I think there is a significant problem facing industry right now that has to do with critical talent leaving the industry because they're baby boomers and they are reaching retirement age.

So much of what we take for granted in the operation of a plant is between the ears of somebody that's been there a lot of years and hasn't been captured in any meaningful way for subsequent generations to benefit from.

So the more you get dirty the more you get to touch those things that aren't documented, the more you get to understand how plants really work and not how they're theoretically supposed to work, and how organizations function in those plants, how operators think and how instrumentation people think. You just get a different set of perspectives.

Joy: What does that bode for the future of the industry that you've got more people maybe not getting dirty like this?

"...certainly in the vendor ranks we have a lot of people that haven't gotten dirty, and yet they're in positions of deciding on directions for product lines and that sort of thing."

Lyden: I don't know if we have more people not getting dirty but certainly in the vendor ranks we have a lot of people that haven't gotten dirty, and yet they're in positions of deciding on directions for product lines and that sort of thing.

You can compensate for that to some point with things like rules for the customer, that sort of thing, but having been out there and gotten a little dirt under your fingernails yourself, if you get some input that seems logical but is contrary to what your own experience says, it causes you to dig a little deeper. I think people that haven't gotten dirty don't necessarily know when to dig, if you know what I mean.

Joy: What's bad about that-- that they don't know when to dig?

Lyden: Then you may have insufficient or even erroneous product requirements, decisions that they make that affect the business based on less than complete understanding of the input.

Joy: Do you have any other advice?

Lyden: Yeah. I think you should be inquisitive. You should always, if you don't understand something, you should take the time to go learn about it.

It's gotten easier than ever with the Internet. It drives my wife crazy. A topic will come up at dinner with friends or something and I'll whip out the IPhone and Google what we're talking about so that I understand it.

That sort of inquisitiveness. If you

Lyden continued…

come across something you haven't seen before, dig deeper because most people don't and you'll differentiate yourself that way.

Joy: What's important about that, about being the person who differentiates himself by digging deeper?

Lyden: It's not so much important about differentiating yourself but it's important about having richer ideas and richer context around your ideas, being more eloquent in the conveyance of your ideas to others.

It has to do with being more rounded, more credible, more compelling.

At least in the world I've lived in, I've been fortunate enough that ideas, the weight of the ideas generally carried over the force of the person presenting the idea. But that came because I worked in an environment where people could listen to an idea, sort out its value and make decisions based on its merit.

The best way to continue that tradition is to be very convincing and compelling in the way you convey our idea. The more you understand everything that goes around an idea the more likely that is to be the case.

Joy: let's say, the engineers of the future one hundred years, two hundred years look back and they're looking at your record, what do you want them to say about you?

Lyden: (laughs) I hope they don't laugh. Or maybe I hope they do laugh because I try to make people laugh a lot.

I think I'd like them to just recognize that I was fortunate enough to be part of something that was bigger than me.

I think I'd like them to just recognize that I was fortunate enough to be part of something that was bigger than me.

I had involvement in some very cool things, some innovations in the industry.

I've seen a lot and done a lot. I've been all over the world. I never dreamed as a kid getting out of school that I would go to so many places.

You know I think I've been in close to seventy countries now and have friends in all those places. That was an amazing thing that I didn't even dream of, to be honest with you.

Joy: What was the most exciting or most surprising country you've gone to?

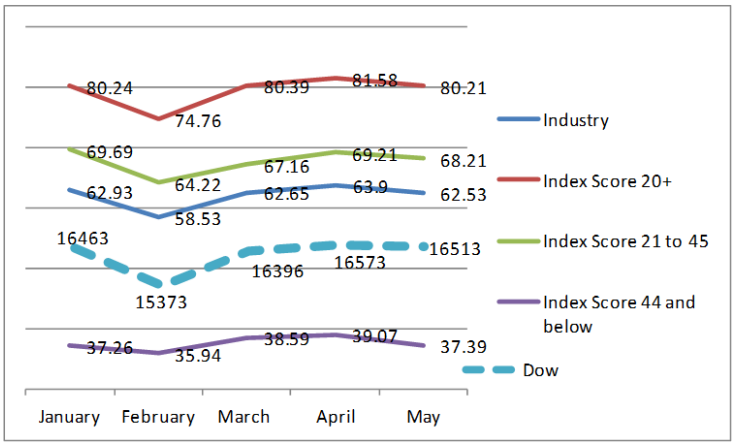
Lyden: Oh wow. I don't know. I've been to so many cool places. I went into China around 1990 or so when it was just beginning to open up to the West and it was a very, very different place than it is today.

When you go to China today you see western hotels and western restaurants. Heck, there's a Starbucks in the Forbidden City, right?

But back then you stayed in friendship hotels where foreigners had to stay. They had a separate currency for non-Chinese people so you could buy things with it and they would give you change in their own currency, which you could not turn back into dollars again. So it was a different world back then. It was very interesting and exotic and cool. So that was awesome.

I've spent a lot of time in a lot of really interesting countries.

Joy: Thanks for being with us, Chris.



INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

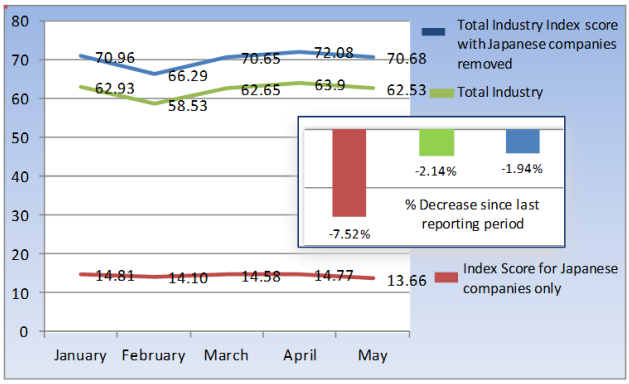
By Mary Samuelson

Several of you have asked how we calculate our index, so here is a brief overview of the process.

First, the top 150 automation control companies in the world are identified based on annual sales. Once a company is identified as part of the top 150, weighting is applied based on annual return on investment, Dun and Bradstreet data, and other contributing factors such as other industry ratings, to obtain a weighted ranking score.

Using the weighted information, the top 78 companies, all with adjusted sales of over $25M, are then tracked using world market data. Markets include US, Asian, and European markets as well as a few others. Foreign currencies are converted to US dollars using the most current conversion rate. A mean of all company's scores is calculated, and those means are then used to produce the index graphs you see in the report.

We made some changes to the index this month, revising where the index breaks are between the three company groups. This was done partially because Invensys had to be removed from the index after its acquisition by Schneider Electric, which caused some movement in the index numbers. Another reason for the change has to do with our belief that the new breaks more closely reflect the differences in the industry in general, in areas such as R&D and ROI.



Now, on to the latest industry changes. Overall, the automation control industry again closely mirrors the DJIA.

This is good news because it verifies the accuracy of our data tracking manipulations. The industry took a slight downward turn this month, falling 2.14% from the same time last month. Where the findings get interesting comes with differences that are seen when the automation control companies in the index are broken into segments.

For example, last month we saw that smaller companies took less of a hit when the stock market took a sharp downward dip in February.

This month, we took a look at Japanese companies versus all others, and discovered that the Japanese automation control industry index fell 7.52% compared to last month, a significantly higher drop than the industry in general (-2.14). (Insert Japanese chart here.)

There could be several reasons for the drop, including but not limited to new government regulations and an increased sales tax from 5% to 8% that just went into effect.

While Prime Minister Shinzo Abe promised tax cuts and other measures to help boost corporate investment, those cuts are not yet forthcoming and the country continues to struggle to overcome a deflationary slump with wages stagnating while the cost of living increases.

E+H Adding On Again

Endress + Hauser has added on to their enormous Greenwood, Ind., campus once again. This time they've built a brand new customer center, with classrooms, hands-on training rooms, and a brand new PTU.

The PTU has two trains, one industrial (flanged) and the other aseptic (TriClamp) and both trains controlled by a Rockwell Automation Plant PAx DCS. Students can operate the plant, test and calibrate field devices, and learn why sometimes things go wrong. Tanks have internal

structures that can interfere with radar and ultrasonic levels, piping has bends that affect flow meters. Mmm. Good Training!

And in keeping with E+H's reputation as an excellent place to work, their brand new cafeteria has a no-kidding Starbucks in it— and I got latte #2 that had ever been served in it!

But Didn't Schneider Just Buy a DCS Company?

Schneider Electric, the global specialist in energy management, has announced PlantStruxure™ Process Expert System (PES). This next generation Distributed Control System (DCS) combines the ease-of-use and openness of Programmable Logic Controllers (PLC) and Supervisory Control and Data Acquisition (SCADA) with the integration, single database and powerful diagnostic capabilities of a traditional DCS, to form an innovative and energy-aware DCS.

But wait! Didn't Schneider just buy Foxboro as part of the Invensys deal? Doesn't Foxboro have one of the most advanced DCS and Enterprise Control Systems around?

According to Schneider Electric, PlantStruxure™ PES leverages integrated software, open Ethernet architectures and powerful object libraries to create a holistically optimised production process. By combining energy and process data in a single integrated platform, plant operation teams are provided with a real-time control and operational interface to help them make informed decisions that will reduce energy consumption and increase process efficiency.

Schneider's Jez Palmer

The new solution, Schneider says, also supports plant digitisation as it puts key process data at the fingertips of operator and maintenance teams. Through unique navigation services, the right person can get the right information at the right time, speeding up diagnostics, cutting downtime and bringing productivity to a whole new level.

Furthermore, PlantStruxure™ PES captures and presents data on one easy-to-use interface, adding intelligence by giving operators a complete picture of the production process.

The system also gives new insight into plant efficiency, enabling plant operators to meet production and energy KPIs by presenting process and power information together. By actively automating energy management, it is easier to eliminate energy waste at the source of overconsumption, delivering savings of up to 30 per cent.

Jez Palmer, business development manager, at Schneider Electric, comments: "PlantStruxure™ PES is a leading-edge offer in the field of process automation systems, bringing the best from the PLC, SCADA and DCS worlds and combining them with integrated energy management features which deliver superior value throughout the lifecycle of a plant. "The system's tight integration ensures efficiency from design engineering through operation. Engineers can develop the configuration faster and more accurately and maintenance teams can diagnose and solve problems faster to reduce downtime at a facility."

One wonders how well the integration of Invensys into Schneider is going. Recently, Schneider Electric announced a global partnership with Indian software producer, RAMCO, to use RAMCO's advanced process control product in the cement industry.

SimSci's APC2014

The INSIDER, though, is puzzled about this. Why would Schneider partner with RAMCO when it just acquired, in the Invensys deal, one of the largest global APC solution vendors in the world, SimSci Esscor, whose brand new APC2014 product was introduced in February at ARC Advisory Group's Forum. So why not use this one? And having just acquired the still shiny and new Foxboro EVO, why have competing DCS products?

GE Buys Wurldtech to get Achilles

GE apparently has a definitive agreement to acquire privately held Wurldtech, a Vancouver, British Columbia-based company and recognized leader in cyber security solutions. This move is one of several by GE to help protect critical infrastructure and advance cyber security efforts globally for key industries. Wurldtech solutions and services are used in complex environments such as oil refineries, power transmission grids or for individual assets like medical devices or smart meters.

Nate Kube, Founder

Traditional information technology (IT) approaches for securing systems and data are challenging when applied to the operations technology (OT) world. According to GE and Wurldtech, their solutions offer a strategic approach to cyber security that help to better protect the OT that connects people, data and machines - maximizing system uptime and mitigating exposure to vulnerabilities. This acquisition will help to enhance the reliability of Industrial Internet operations.

Wurldtech Technology & Professional Services

According to the company, Wurldtech's technology and professional services are designed to "Assess, Protect and Certify." This strategic approach to cyber security is performed using:

- Achilles®Test products to discover operational vulnerabilities in products and critical infrastructure and then assess the root cause,
- Achilles Threat Intelligence product to secure OT networks with an industrial firewall, and
- Achilles Communications and Practices Certifications to evaluate device communications and best practices.

Wurldtech will retain its name and operate as a wholly owned subsidiary to continue providing the necessary focus on services to its broader customer base. Financial terms were not disclosed.

So it seems that cyber security firms are growing up and being acquired. Belden bagged Byres Security a couple of years ago. Innominate was snapped up by Phoenix Contact, and now Wurldtech by GE.

There is still lots of room in both the hardware (Tofino, et al) and software space. But there is also considerable room for companies who can provide complete system integration for cyber security in the critical infrastructure industries. Too much of this kind of consulting is still being provided by people who were doing banks and supermarket cyber security yesterday. It is extremely important for the manufacturers of firewalls and devices, as well as the cyber security consultants who specify and install them to be able to understand what they are doing because they've worked in power plants, distribution grids, substations, oil refineries and upstream platforms, chemical plants and all the other heavy manufacturing plants where the "strategic approach to cyber security" can actually be applied to OT, and not be simply IT with a new coat of paint.

—Walt Boyes

Traditional information technology (IT) approaches for securing systems and data are challenging when applied to the operations technology (OT) world.

Toyota Goes Human

According to an article from Sourceable.net, Toyota is removing robots from some processes in its Japanese factories.

From the article: "Over the past three years, the company has replaced the robots at some of its Japanese plants with 100 manual-intensive workspaces staffed by human beings. Young workers are now entrusted with the crafting of crankshafts, axle beams and chassis parts in lieu of long-standing automated processes."

Sources at Toyota said that this has produced a 10 per cent reduction in material wastage arising from crankshaft production at its Honsha plant, as well as reduced the length of the production line by a stunning 96 per cent.

Architect of this new policy is Mitsuru Kawai, who has been charged with creating a new culture of craftsmanship within Toyota. The withdrawal of robots from some of Toyota's production processes runs completely contrary to the overwhelming drive toward automation in the modern manufacturing.

Kawai envisions a symbiotic system in which the keen and inquiring intellects of human workers are used to enhance production processes which continue to remain largely automated. The Toyota veteran points out that humans will only ever be able to truly improve automated production processes by acquiring a first-hand understanding of them on the work floor.

"We cannot simply depend on the machines that only repeat the same task over and over again," Kawai said.

GE Buys Alstom…maybe, and then again, maybe

GE takes a huge whack at Siemens and ABB by acquiring Alstom's Power and Grid businesses. But it isn't over until the soprano sings, so hold on to your hat.

+$13.5B enterprise value, all-cash transaction valued at 7.9x pro forma EBITDA (12 months ending September '13)
+Immediately accretive to GE earnings; incremental $.08-$.10 of earnings in 2016; expect approximately 75% of operating earnings from GE Industrial by 2016
+Integration will yield efficiencies in supply chain, service infrastructure, commercial reach, and new product development to generate more than $1.2B in annual cost synergies by year five
+Strong operating assets that bring complementary technology, global capability, a large installed base and talent to GE
+Enhances GE's long-term growth opportunities in growing global power market
+Improves customer productivity through total power plant & integrated grid solutions
+HQs & global COEs for steam turbines, hydro, offshore wind, and grid businesses in France; COE for 50Hz gas turbines in Belfort
+Net growth in jobs in acquired businesses in France with remix to more engineering and manufacturing

PARIS, FRANCE, April 30, 2014 – GE (NYSE: GE) and Alstom announced here today that GE has submitted a binding offer to acquire the Thermal, Renewables ("Power") and Grid businesses of Alstom (ALO.PA) consisting of $13.5 billion (€9.9 billion) enterprise value and $3.4 billion (€2.5 billion) of net cash, totaling $16.9 billion (€12.35 billion). The Alstom board of directors has positively received GE's offer and has appointed a committee of independent directors led by Jean-Martin Folz to review the transaction by June 2. If this review concludes positively, an exclusivity period beginning no later than June 2 will be granted and the next steps will include Works Councils consultation, Alstom shareholder approval in a shareholder meeting, and customary regulatory approvals. Bouygues S.A., a 29% non-controlling shareholder of Alstom, supports the transaction. Although the transaction involves the acquisition of Alstom's Power and Grid businesses, GE's offer, typical of a public company transaction, permits the board of Alstom to consider unsolicited alternative proposals for the acquisition of Alstom, or of the Power and Grid businesses. The deal is expected to close in 2015.

> Wednesday, May 14th, the French Government blocked the deal, leaving GE looking just a bit more than foolish. "We appreciate the importance of the energy sector to France, and we will continue to have open and productive discussions with the government." -GE spokesperson

Transaction details
The all-cash transaction is valued at 7.9 times pro forma earnings before interest, taxes, depreciation and amortization (EBITDA) of Alstom's Thermal, Renewables, and Grid business units. GE expects the acquisition to be accretive to earnings in the first year; it is expected to add $.08-$.10 of earnings in 2016; and approximately 75% of operating earnings is expected to come from GE Industrial by 2016.

Creating investor value
Jeff Immelt, GE Chairman and CEO, said, "This is a strategic transaction that furthers GE's portfolio strategy. Power & Water is one of our higher growth and margin industrial segments and is core to the future of GE. Alstom, like GE, is a company built on engineering, innovation and technology. We respect and value the deep industry and technology expertise of Alstom employees and expect them to add to our proven track record of developing talent and leadership in France and globally."

Immelt continued, "Alstom not only advances our strategic priorities and industrial growth, but is also expected to provide an excellent return on capital. Alstom's businesses are very complementary in technology, operations, and geography to our power and grid businesses. We expect a collaborative and prompt integration that will yield efficiencies in supply chain, service infrastructure, commercial reach, and new product development. We expect these actions will generate more than $1.2B in annual cost synergies by year five and the transaction will be immediately accretive for GE shareholders."

Hans-Peter Endress, Thomas Kraus and Antonietta Pedrazzetti join Supervisory Board at Endress+Hauser Group

Klaus Endress, President of the Supervisory Board of Endress+Hauser AG since the beginning of 2014, announced the appointments of Hans-Peter Endress, Thomas Kraus and Antonietta Pedrazzetti to the board. Dr George A Endress, Dr Hans Fünfschilling and Willi Ruesch have duly retired from the board.

Hans-Peter Endress (67), is the eldest son of company founder Dr Georg H Endress. Thomas Kraus (47) is an internationally experienced CEO. Antonietta Pedrazzetti (51) majored in finance at the University of San Diego. Since 1992 she has worked for F. Hoffmann-La Roche Ltd and has been responsible for business development with a focus on mergers and acquisitions as well as strategic projects since 2003.

Additional members of the Supervisory Board are Dr. Georg Bretthauer, professor of applied IT and automation engineering, the finance expert Dr Klaus Eisele, as well as the former CFO of the Endress+Hauser Group, Fernando Fuenzalida. Dr Heiner Zehntner, a member of the Group's Executive Board, is the Secretary of the Supervisory Board.

SmartAmerica Challenge on the Internet of Things

The SmartAmerica Challenge is bringing together organizations with Cyber-Physical Systems (CPS) technology, programs, and test beds to demonstrate the potential to improve safety, sustainability, efficiency, mobility, and overall quality of life.

Cyber-Physical Systems-- what some have called an Internet of Things-- involves connecting devices and systems in diverse sectors like transportation, energy, manufacturing, and healthcare in fundamentally new ways.

The SmartAmerica Challenge aims to accelerate advances in the field by providing a venue for innovators to present concepts for interconnected CPS technology, programs, and test beds to demonstrate the potential of improving the economy, fueling job creation, creating new business opportunities, and saving lives.

Currently more than 100 organizations from industry, academia, and government are participating in the Challenge, including the Smart Manufacturing Leadership Coalition (SMLC).

The Presidential Innovation Fellows are planning a SmartAmerica Challenge Summit in June 2014. In this culminating event, attendees will be able to interact with the teams, watch the demonstrations, and participate in the discussions on how these interconnected smart systems can provide tangible benefits to our everyday life.
More information about the SmartAmerica Challenge can be found at www.smartamerica.org, and on the Challenge wiki at www.smartamerica.org/challenge/wiki

GE Buys Alstom...continued
Immelt concluded, "GE has an excellent track record of creating shareholder value from investments in Europe. In France, this includes our longstanding CFM aircraft engine joint venture with Snecma (Safran); our acquisition of Thomson-CGR, a healthcare center of excellence for GE; and our 1999 acquisition of Alstom's gas turbine business in Belfort, which today is GE's technology center of excellence for 50 Hz gas turbines. Across Europe, we have built strong global competitors from European champions in Oil & Gas, Aviation and Healthcare."

Patrick Kron, Chairman and CEO of Alstom, commented: "The combination of the very complementary energy businesses of Alstom and GE would create a more competitive entity to better service customer needs. Alstom's employees would join a well-known, major global player, with the means to invest in people and technology to support worldwide energy customers over the long term. The proposed transaction would allow Alstom to develop its Transport business as a standalone company, with a strong balance sheet to capitalize on opportunities in the dynamic rail transport market."

Creating customer value
Alstom's Power business provides equipment and services for integrated power plant solutions for a variety of energy sources, including steam, hydro, coal, gas, nuclear steam, wind, and other forms of renewable energy. In fiscal year 2013, the business had €11 billion ($15 billion) in sales and €1.05 billion ($1.4 billion) in income from operations, and 46,000 employees.

Steve Bolze, CEO of GE Power & Water, said, "As we continue to benefit from rising global demand for power generation in key growth regions, we see power generation customers increasingly buying total power plant solutions, maximizing their efficiency. By combining our complementary gas and steam turbine technologies, GE will help customers achieve better performance from their existing and new power plants, enabling more accessible, affordable and sustainable power for people everywhere."

Alstom's Grid business offers Transmission & Distribution solutions to support the build-out of the power grid in emerging economies and replacement of aging electrical infrastructure. Alstom's Grid business generated €3.8 billion ($5.2 billion) in sales and €0.2 billion ($0.3 billion) in income from operations in fiscal year 2013, with 18,000 employees.

"The combination of the very complementary energy businesses of Alstom and GE would create a more competitive entity to better service customer needs. Alstom's employees would join a well-known, major global player, with the means to invest in people and technology to support worldwide energy customers over the long term.

Investing in France
GE said today that France will be the center of its European power business with headquarters and centers of excellence here for its steam turbine, hydro, offshore wind and grid businesses. GE plans that its Belfort site would remain the center of excellence for 50 Hz gas turbines. GE also anticipates net growth in jobs in acquired businesses in France, with the employee mix moving toward high-value manufacturing and engineering jobs.

But hold on there!

As we go to press, the whole deal has not only been fouled up by Siemens' monkey wrench counter offer, but the French Government has blocked the deal.
The French Economy Minister touted the move as one worthy of nationalistic pride and economic shrewdness. "This is a decree we should have adopted a long time ago," he said, "you can't ask a country to give up on the interests it considers strategic and essential."

The ***Insider*** thinks, "It's dead, Jim."

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University of Fairfax Partners With Cyber Security Forum Initiative

Employees and clients who have completed the Cyber Security Forum Initiative (CSFI) coursework may now be able to receive graduate credit towards a master's or doctoral degree in cybersecurity from the University of Fairfax (UoF). Under an agreement signed by the two institutions last week, the UoF has conducted a prior learning assessment for a variety of CSFI courses and assigned appropriate academic credit toward one of their accredited graduate degrees.

The MOU was signed by UoF President, Dr. Christopher V. Feudo, and CSFI President, Paul de Souza. The MOU is designed to facilitate the award of Prior Learning Assessment (PLA) credit to CSFI employees who seek admission to UoF, as well as those applicants who have successfully completed certain courses offered by CSFI.

> "As the nation's first graduate institution focused exclusively on the field of cybersecurity, the University of Fairfax recognizes the need for cybersecurity professionals in all fields, but particularly in national defense."

As malicious cyber activity continues to grow at an unprecedented rate, severely threatening the nation's public and private information infrastructure, the need for qualified and certified cybersecurity professionals becomes even more critical. Cybersecurity professionals must mitigate such attacks which continue to increase in complexity, frequency and severity. As a result, the UoF and CSFI Academic Partnership will facilitate the opportunity to earn critical cybersecurity certifications, master's and doctoral degrees in cybersecurity at UoF by applying applicable work, educational, and training experience as credits toward UoF programs of study.

The University of Fairfax is the only accredited graduate university in the nation exclusively dedicated to cybersecurity.

As a result, UoF is a leading provider of senior cybersecurity professionals to both the public and private sectors. Major employers hire and promote UoF students and alumni as cybersecurity specialists, managers, and executives.

The University's online, practitioner-oriented cybersecurity graduate degree and certification programs are taught by expert cybersecurity professionals, who become an integral part of the professional network throughout the student's career.

"This Academic Partnership will help the CSFI employees and clients to advance their careers within their chosen cybersecurity field, and enhance cybersecurity thought leadership with the support of the University of Fairfax," said CSFI President Paul de Souza.

"As the nation's first graduate institution focused exclusively on the field of cybersecurity, the University of Fairfax recognizes the need for cybersecurity professionals in all fields, but particularly in national defense," said Christopher V. Feudo, Ph.D., president of the University of Fairfax.

"Through this partnership, the University will enhance its mission to fill the critical shortage in high-level cybersecurity practitioners in this vital area."

The University of Fairfax offers online graduate programs with curricula exclusively focused on cybersecurity.

The Cyber Security Forum Initiative (CSFI) is a non-profit organization headquartered in Omaha, NE, and Washington, DC, to provide Cyber Warfare awareness, guidance, and security solutions through collaboration, education, volunteer work, and training to assist the United States government, United States military, commercial interests, and international partners.