

Wake up, it's a new year - GE and Yokogawa are the first to start work: attention turns to worries on cyber crime

After an extended holiday period, taking up the latter weeks of December, with holidays that go on into the start of new year, it was noticeable that the whole industry then seemed to go into total hibernation for the rest of January this year. However, by the end of the month, there were some signs of life returning to the departments responsible for external communications!

First off the blocks really, with a good set of product developments and application stories, was GE Oil & Gas, with their 14th annual User Group meeting held in Florence: see page 3 for a report on their meeting - which hosted around 1000 executives assembled from the industries that seem to have been the prime focus for most automation businesses for at least the past year.

Gloom and doom from Eric Byres

Eric Byres of Tofino Security summed up what seemed to be the mood of the rest of the industry in his blog at the end of the month, discussing rain, grey skies and credit card bills - but the main topic was his prediction for the gloom and disasters coming, in his "SCADA Security Predictions" for the coming year.

His first prediction is that tablets and smart phones will start to make their way onto the plant floor - Byres comments: "This won't be pretty from a security point of view, but we will have to get used to it. Maybe it will drive the industry to deploy holistic security strategies rather than the security band-aids so often seen now."

Byres also sees a growth in the usability and consistency of the emerging international standards on security: and the issue of professional certification for cyber security experts.

Safety and security events

But in his last predictions, Byres sees stronger growth in the combination of industrial safety and security analysis, with companies like TUV and exida pushing further into the SCADA/process secu-



Eric Byres:
"A major event impacting industry in Europe or NA"

ry markets, and with increased attention being paid to studies like the LOGIIC analysis of SIS by the Department of Homeland Security in the USA. This leads onto his last prediction, that following the serious cyber attacks last year in the Middle East, there will be a big security event in Europe or the USA this year, one that will impact on industrial systems. If Byres is right on this one (he hopes he is not) this would ratchet the whole discussion up several notches.

Following this theme, Yokogawa stepped forward to make some interesting business announcements for 2013.

Yokogawa moves forward with McAfee partnership

Yokogawa and McAfee have announced the signing of a partnership agreement to offer holistic and value-added IT security solutions for the industrial automation world.

McAfee, in their recent threats report, quote that cybercrime, "hacktivism" and cyber-warfare are on the rise worldwide, and these are growing ever more sophisticated. While today's process control systems can take advantage of advanced general-purpose IT to reduce costs, improve performance, enable interoperability with APC, MES and other systems, and add other important new capabilities, these very same technologies have made them increasingly vulnerable to security

THEY SAID IT

"Integration of anti-virus software with industrial control systems"
Nobuaki Konishi,
Vice President,
Yokogawa IA Systems
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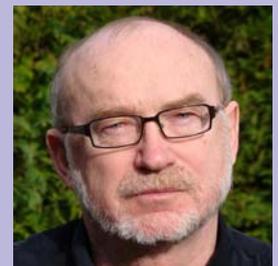
"Full year order intake of over \$18Bn"
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InduSoft, whose products are distributed and supported in the UK and Ireland by AdProSys, has announced the launch of a SCADA Visualization App for Windows 8 and Windows RT, the new version of the Microsoft Windows operating system. This App offers mobile access to your InduSoft Web Studio application on Windows 8 devices, allowing you to develop attractive interfaces with easily customizable widgets that display alarms and trend history in an easy-to-read format.

“It is an exciting time” said Mike Bradshaw, Director at AdProSys, “InduSoft Web Studio was already a fantastic product with excellent web and thin client offerings. The launch of the Visualization Manager app for Windows 8 confirms our place in this market and provides our existing and future customers with an exceptional toolset on which to build their next generation operator and management information systems”.

More than 125,000 InduSoft Operator Interface, SCADA, control and data acquisition systems are operating worldwide through direct and partner sales.

intrusions – malicious or otherwise – from both within and outside the plant. This means that organizations tasked with running critical infrastructure such as oil and gas pipelines, chemical plants, power stations, and water treatment facilities must look at holistic security systems across two disparate, yet interconnected zones: enterprise IT and industrial control systems.

Control systems operate longer

The partnership between Yokogawa and McAfee, using the Yokogawa domain knowledge with McAfee real-time intelligence for changing threat environments with resilient and efficient compliance measures, addresses the issue that industrial process control systems typically have a three to five times longer lifecycle than typical commercial systems - so have needed more patches, and have more known vulnerabilities.

“Security measures for control systems are indispensable. Yokogawa is continually making stringent efforts to provide our customers with control system security solutions, starting with the development of highly secure instruments and systems and extending to the provision of operational support services”, said Nobuaki Konishi, vice president of Yokogawa’s IA systems business division.

He continued: “This partnership will allow us to combine our technology and plant security knowhow with McAfee’s technology to enhance the security of our products and our line-up of security solution services covering the entire lifecycle of our customers’ plants. This will include the integration of anti-virus software with industrial control systems used in the process industries”.

Expanding McAfee interest

Wahab Yusoff, vp for McAfee South Asia, added: “Businesses are looking for integrated security solutions, moving from simply securing components to understanding and measuring the security of a business system as a whole. That is why we feel strongly about this opportunity to work with Yokogawa as a leading global supplier of industrial control systems.”

Success for the Yokogawa Evolution 2015 first year

The structural reforms carried out by Yokogawa in fiscal years 2009 and 2010, in order to modify their business structure and make the operations more efficient, have been implemented, and the first year of the Evolution 2015 plan, announced in November 2011, has been a success. To move forward with this plan the decision has been made to reorganize the management team, to set the stage for the continued implementation of this growth plan.



*Takashi Nishijima:
Incoming president at
Yokogawa Electric*

Consequently, on April 1st, Takashi Nishijima, director and senior vice president for Industrial Automation in Yokogawa Electric, will be promoted to the position of representative director and president. The current incumbent of this position, Mr Shuzo Kaihori, will be appointed as representative director and chairman.

Background in Yokogawa

Born on August 12, 1957, Nishijima joined Yokogawa in April 1981 and held a series of senior product development and marketing positions in the field instruments business. From April 2010 he served as president of Yokogawa Meters and Instruments for a year. In June 2011, he was made a director of Yokogawa Electric, and took up his current role.

● The Yokogawa manufacturing facilities were not directly impacted by the March 2011 earthquake and tsunami in

Japan, as they are distant from the quake epicenter, and sales and service offices and facilities located closer suffered only slight damage. The mainstay IA product ranges, such as the Centum DCS and the industrial instrumentation, are primarily manufactured by Yokogawa Electric Asia in Singapore and by Yokogawa Electric China in Suzhou, China.

New Yokogawa offshore control system project

Yokogawa integrated control and safety systems (ICSS) are to be supplied to the Cygnus Offshore Development Project in the North Sea, in a contract signed with GDF Suez E&P UK. Upstream oil and gas is a major focus area for Yokogawa within its current Evolution 2015 mid-term business plan.

Yokogawa will supply their Centum VP systems for process control, ProSafe-RS safety systems for process shutdown, emergency shutdown, fire and gas detection (complete with associated field devices), Exaquantum production management and process data historian, and their PRM field device asset management.

Cygnus complex installation

The ICSS will be distributed across the Cygnus complex, which currently consists of a total of four greenfield offshore platforms. Three platforms are bridge linked (Alpha WHP, PU, and UQ) and a second remote drilling centre is located on the fourth platform (Bravo WHP).

The ICSS will provide a single interface allowing operators to start, control, and monitor all facilities from a single central control room. Yokogawa will also supply an operator training system (OTS) utilizing the OmegaLand advanced operator simulation environment. This can also be used as an engineering tool, to confirm changes in control strategy.

- The increased workload for Yokogawa in the North Sea currently has enabled further expansion of the company's Aberdeen based North Sea business unit, which is to move into larger premises.

Large gathering for GE oil and gas user meeting

More than 1000 oil and gas industry executives attended the 14th annual GE oil and gas user group meeting in Florence, Italy, the original home for Nuovo Pignone, and still the centre of GE compressor production, at the end of January. Over two days this record number of delegates met to learn about GE and share ideas on how their advanced technology is helping to meet the world's growing demand for oil and gas.

Expanding business

Dan Heintzelman, president and ceo of GE Oil & Gas, advised that as a standalone segment within GE, fourth quarter revenues had been \$4.5Bn, and full year sales were \$15.2Bn, with over \$18Bn in orders received. Now employing 37,000 people worldwide, investment over the last year had exceeded \$1Bn (some of which was reported last month, page 12), and Heintzelman said that spend on R+D and technology over the next three years would be twice that of the last three, in their bases in Italy, Brazil, Houston, the North Sea and Australia. The emphasis was on this spend being on their internally generated ideas for business development, rather than on acquisitions.



Dan Heintzelman:
"Energy megatrends are changing our industry"

New product developments

While press releases issued during the meeting concentrated on developments with gas compressor technologies, reducing the weight and footprint to meet the customer requirements, for example by designing out the use of lube oil systems

These days, Offshore Europe is perhaps the only really busy exhibition that takes place in the UK, in Scotland, for the process and control industry – obviously concentrating on offshore oil and gas. Located in Aberdeen, it takes place every two years, in September, with around 1500 exhibitor stands – and there will be another show this year.

Organized by the Society of Petroleum Engineers (SPE) one of the ways to remind people about the show is to produce a year planner, with the exhibition dates suitably highlighted. Add advertising around the edges from suitable exhibitor suppliers, and this will pay the costs of printing and mailing out in December, to most of the 31,500 visitors listed from 2011.

The only trouble is, when the enthusiasm runs away, and in typesetting September with the dates of 3-6 highlighted for the show dates, the actual days get misplaced on the planner, and somehow the dates don't correspond with the days of the week that they should! Slightly worrying when people might rely on that calendar to book their travel plans! So the answer is to swallow hard, reprint the calendar and post out the corrected copy to all the previous mailing list.

But which copy have you got on your office wall? A clue: 3-6 September is Tuesday to Friday this year.

Emerson Process Management has successfully replaced the existing controls on the GE Frame 6B gas turbine at the Nikiski Generation Plant in Anchorage, Alaska, with its Ovation control technology. This marks one of the few times an outside vendor has been chosen to retrofit Mark VI controls. The project is part of an initiative to convert the 40-MW, simple-cycle power plant to a 60-MW, combined-cycle facility. The resulting 45% increase in generation capacity with a minimal increase in fuel consumption will enable the plant to cost-effectively meet the electricity needs of the Kenai Peninsula. An additional 20-MW capacity is then available through the use of the duct-firing capability built into the existing heat recovery steam generator. This brings the total plant capacity to 80-MW, but requires additional fuel consumption.

Yokogawa will supply their Centum VP integrated production control system for controlling and operating the facilities of two new 950MW combined cycle power plants being built at Dongducheon in South Korea, including gas turbines, exhaust gas heat recovery steam generators (HRSG), and steam turbines. The project was awarded by the Samsung C&T Corporation, an old established part of the Samsung Group, based on previous experience with Yokogawa, in providing close technical support to Samsung C&T.

and gearboxes, Heintzelman stressed their interest in measurement and control technologies, particularly using ‘big data’ to monitor machinery diagnostics for asset management, thereby making the benefits of the potential business efficiency improvements available to their equipment users.

“These announcements underscore GE Oil & Gas’ commitment to unlock value for our customers, whether it is providing advanced technology to help them improve performance, solving complex challenges in harsh environments or making oil fields more productive,” said Dan Heintzelman: “Global energy megatrends such as the acceleration of subsea exploration, the growth of unconventional fuels, the evolution and expansion of LNG and the impact of monitoring and diagnostics are fundamentally changing our industry.”

Recent projects and developments

GE announced a \$175m JV investment in a manufacturing facility in Soyo, on the mouth of the Congo River in the north of Angola, to produce subsea equipment for the local oil and gas industry – Angola is one of the largest producers of crude oil in Africa. In China, the last section of the China National Petroleum Corporation West-to-East pipeline started operations at the end of 2012: this 5400 mile gas pipeline is the world’s longest, and GE was a primary supplier of compression equipment for the project.

Subsea installations

The GE Blue-C compressor development project is currently in the finalizing phase of the qualification tests and has accumulated more than 2,300 running hours while installed in a pool. Blue-C is designed to be capable of continuous, maintenance-free sub-sea operation for years, and products to this design are destined for installations on the Ormen Lange project, executed by Aker Subsea for Statoil and Norske Shell. This requires unattended operation at over 2,950 feet below sea level, with a power of up to 12.5 MW: installation on the seabed off Norway is expected in 2019.

The outlook for 2013 - the BP energy forecasts

Last month the **INSIDER** reported that the IEA felt the massive increase in shale gas use in the USA had reduced world coal prices, increasing the use of coal for power in Europe as well as in the Far East, and illustrating the global implications of such a development. The IEA also forecast that world coal consumption would rise to equal that of oil by 2017.



*Christof Rühl:
“Shale gas production is not expected in Europe”*

Subsequently Christof Rühl, chief economist at BP, published their third annual energy outlook, covering the period to 2030. They see a 40% rise in global energy consumption between 2010-30, lower than the economic growth at 97% because of a 31% increase in energy efficiency. But the major part of this growth will be in the BRIC countries, with only 6% growth in the OECD countries, which is actually a fall in per capita terms.

North American independence

The BP forecasts make a much more important point, that North America will be energy independent as a result of the new developments with shale gas and tight oil (shale oil). Even in 2013 the USA will probably equal or overtake Saudi Arabia in terms of the volume of liquid fuels production, after taking account of biofuels and natural gas liquids. With half the US trade deficit today represented by energy imports, their rapid move towards self-sufficiency will transform their trading position.

The implications of this are that the whole configuration of the global oil market will change. The EU, India and China

will become increasingly dependent on oil imports. OPEC's share of the oil market is expected to fall, reflecting growing non-OPEC production (in Brazil, North America) together with slowing demand growth due to high prices and increasingly efficient transport technologies. Christof Rühl commented: "As OPEC cuts production over the coming decade, by 2015 we expect spare capacity to reach the highest levels since the late 1980s. While this will be a key oil market uncertainty over the next decade, we believe OPEC members will be able to manage the challenge of maintaining production discipline despite high spare capacity."

LNG and shale gas

Natural gas is expected to be the fastest growing of the fossil fuels, with LNG accounting for 27% of the growth in gas supply to 2030. Even in 2030, North America (now a net exporter of natural gas) will account for 73% of world shale gas production, with China coming next at 8%. Rühl commented: "Vast unconventional reserves have been unlocked in the US, with oil production following gas. This delivery has been made possible not only by the resources and technology, but also by 'above-ground' factors such as a strong and competitive service sector, land access facilitated by private ownership, liquid markets and favourable regulatory terms. No other country outside the US and Canada has yet succeeded in combining these factors to support production growth." For these reasons a significant boom in shale gas production in Europe is not expected, but China and Russia will be significant.

The balance of power

By 2030 the fossil fuels supply will be split evenly, with coal 28%, oil 27% and natural gas 26%, plus nuclear, hydro and renewables around 6/7% each. This means above average growth for nuclear, significantly in Russia, China and India, but significantly higher growth for renewables. Including biofuels, renewables will provide more primary energy than nuclear power by 2030. Hydro-electric power will grow in China and

India, and in Brazil will grow to account for 72% of power demand, or 32% of total energy.

The HPI view for the future of hydrocarbons in 2013

A few days later the journal *Hydrocarbon Processing* presented their market outlook for 2013, a processing activity that they see as an \$89Bn total market, \$26Bn in capital and \$27Bn in maintenance, plus \$36Bn in operational costs. The main comment about crude oil supplies was that the newer supply sources are all the heavier, higher sulphur crude oils: in 2011 the total world crude production averaged at 93mbpd - and tight oil was estimated to have averaged 1mbpd total in 2012, mainly from Bakken in North Dakota and Eagle Ford in Texas.

LNG business

The main comments on processing and projects related to LNG developments came from Adrienne Blume, the process editor, and Lee Nichols their director of data products. The LNG export market was characterized by over-supply, with 32% from Qatar, 8% from Australia (mainly going to Japan), 10% from Malaysia and 9% from Indonesia - these percentages were apparently for 2011. Their main comment was that demand would catch up with production, when current and new projects for building receiver terminals are completed (but see below for a different view from BG the next day!).

New projects planned

China has five receiver terminals currently, with another 11 being built, and India has some terminals in the planning stages. The list of new and potential LNG export terminals and facilities was longer, with three in progress in Canada and 12 proposed in the USA: Russia plans a terminal at Vladivostok, and Mozambique plans a terminal for export of offshore gas by 2018. The major future areas of interest in terms of new production are offshore from East Africa, and from the important new Eastern Mediterranean area,

ABB has won a \$40m contract to extend the export terminal of the eni refinery in Taranto, located in the Mar Grande bay, on the Ionian Sea in southern Italy. ABB will be the EPC contractor for the new installation, including project management and pre-commissioning. The eni plan is to improve the refinery infrastructure and to ensure a reliable connection with the onshore Tempa Rossa oil plant.

The refinery is located at the export terminal and is connected to the oil field through an underground pipeline.

"This new project will help to improve the local oil transportation infrastructure for eni," said Veli-Matti Reinikkala, head of the ABB Process Automation division. "It underscores ABB's industry expertise, capabilities, and local resources to successfully manage, supply and execute these comprehensive projects for the oil and gas industry."

The new pier will have five loading arms, with a capacity of 3,000m3 per hour. To ensure the secure mooring of the vessels and the loading of crude oil, ABB will provide new electrical systems as well as the necessary mechanical equipment and automation systems. ABB will also supply all the electrical equipment including low and medium-voltage systems, control room, mechanical and process equipment, fire-fighting system and diesel generator.

Kepware saw 20% YOY growth in the oil and gas market in 2012. This results from business development efforts surrounding new, industry-specific communications solutions across the upstream, midstream, and downstream markets. The new solutions from Kepware include Electronic Flow Measurement (EFM) capabilities including drivers for ABB TotalFlow, Fisher ROC and ROC Plus, Enron Modbus, and OMNI Flow Computers. In addition Kepware's WITS Level O Drivers provide fast and easy access to real-time drilling and mud logging data across multiple sites, including offshore drilling platforms, onshore rigs, and well sites. The drivers also provide connectivity to numerous types of drilling equipment, such as Measurement While Drilling down-hole systems. Tony Paine, president and ceo of Kepware said: "Companies need to better manage drilling operations, well production, and pipeline infrastructures, while also staying compliant with multiple regulatory mandates. Our new oil and gas offerings ensure greater asset visibility across multiple geographic areas, while streamlining data collection and consolidating tasks. We bring experience in connecting disparate automated devices and systems, to the oil & gas industry." Kepware grew 155% during the 5-year period to 2011. In 2012 new distributor partnerships were signed in Brazil, Italy, Spain and Southeast Asia: China, Japan, Australia, and Germany will follow.

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covering the offshore fields shared between Israel and Southern Cyprus.

Canada has been actively courting Japan to offer LNG, and minister of natural resources Joe Oliver quotes that if all export terminal projects in Canada are approved they will have a capacity of 66mtpy. The latest project is a JV between Idemitsu and AltaGas for a 2mtpy terminal at Kitimat, British Columbia. US LNG export projects have various legislative hurdles to overcome as yet: currently exports are restricted to countries with US free trade agreements, which does not include Japan. But such a rubber stamp will not be a problem.

A different view - from BG

Embarrassingly, *Hydrocarbon Processing* itself sent out a report the very next day, on a presentation by Steve Hill, vp of global LNG and oil marketing at BG Group, at the 'LNG Supplies for Asian Markets' conference in Singapore. In this they suggest that BG believe "Gas producers will focus on meeting a supply shortfall for the next couple of years".



Steve Hill: "LNG supply shortfall for next few years"

The presentation gave 2012 data, showing that LNG trade actually declined 2.5mt last year, a decline for the first time in history. Bank of America and Merrill Lynch analysts said "In total, we see global LNG capacity growing by 8.4mt to 277mt in 2013, and see even less growth of 4.4mt in 2014." New production from Asia and Australia will come online in 2015.

Analysts consider actual global LNG trade is currently 240mt: increased demand from the Pacific basin, including Japan, led to around 22.4mt of LNG being diverted from the Atlantic basin, to meet surging demand in the Pacific last year. BG Group actually diverted a third of this tonnage itself. Separate reports said that Japan imported 8.3mt of LNG

from Russia in 2012 (up 17%); total LNG imports rose 11% to 87mt. Hill commented that higher gas output from some producers was offset by production problems in Indonesia, Algeria, Malaysia, Egypt and Yemen. BG Group expects overall demand to rise with as many as 30 more countries hoping to import LNG.

● Bechtel has been awarded the FEED project for the new LNG liquefaction facility to be built in Mozambique. "The Mozambique LNG FEED award builds on Bechtel's extensive experience in LNG and in Africa, where we have worked for more than 50 years," said Jack Futcher, president of Bechtel's oil, gas and chemicals business unit. Bechtel is currently building four LNG facilities in Australia and an export facility in the US, through its collaboration with ConocoPhillips. The Mozambique facility will export 5mtpy initially and be operational by 2018.

Twenty years of the Profibus User Groups

Cast your mind back 20 plus years, to the early 1990s in the UK/Europe: the modern instrumentation in use was working on 4-20mA analogue transmission, with Rosemount from the USA pioneering HART communications on top. There were fieldbuses emerging with the ISA SP50 in the USA and Profibus in Europe. Colleagues Geoff Hodgkinson and Bob Squirrell were PR writers and media promoters working for the electronics industry, particularly for some companies that were using 16 and 32 bit electronics backplane buses, and producing boards with STE and VME bus interfaces.

PEP Modular Computers of Shoreham then produced a unit that introduced a Profibus interface, and were looking for ways to get this into an (as then) non-existent market. Bob Squirrell says that he had to think of a good way to promote this new feature! Drawing on his experience of User Groups – having chaired the UK's VMEbus, STEbus and Futurebus user groups during the 1980s – he suggested forming a user group for Profibus.

PEP agreed, and approval was obtained from the Profibus NutzerOrganization (PNO) – which translated is the Profibus User Organization - to form a UK Group. The decision was taken – and what better place to launch the UK Profibus group than the major “Control and Instrumentation” (C+I) exhibition that was to take place at the NEC in May 1993.

With a little bit of combined pressure, the C+I people agreed to a slot in the conference at the exhibition for Squirrel, Hodgkinson and PEP to present the plan to launch the group. The presentation was to be chaired by the editor of a prominent UK electronics publication.

The day of the event came along, and a one day strike called by the National Union of Journalists meant that the impartial journalist chairman was unable to perform his rôle – so Bob Squirrel was appointed chairman, a rôle you could say he has held ever since! Seven companies in the meeting, manufacturers of systems or products with Profibus interfaces, agreed that a user group should be formed, and financed, to publicize the products available that would interface together, using Profibus - as available from these suppliers.

While it was defined as a User Group, there were few actual industrial ‘users’ at the time! The major parties involved in founding Profibus UK were Siemens, PEP Modular Computers, Danfoss, Omron and Klockner-Moeller.

Profibus UK takes off!

The PNO in Germany had originated in 1989, when VDE had completed the technical development of the Profibus con-



*Bob Squirrel:
Twenty years spent
heading Profibus UK*

cept and needed an organization to promote the technology. The organization had started its international expansion with the establishment of the first Regional Profibus Association in Switzerland in 1993, swiftly followed by other local groups with the UK, Austria, Sweden and France later in 1993, and in the USA, with Michael Bryant, in 1994.

Current situation in UK

Over the last 20 years the membership of Profibus UK has grown, servicing the needs of its members - who now include many manufacturers, suppliers, integrators, service providers and users of Profibus and Profinet. In co-operation with the Profibus Competence Centre at Manchester Metropolitan University many training events are organized, including certified Profibus and Profinet engineer and installer courses, commissioning and maintenance courses, and process and factory automation seminars around the UK. The 20th anniversary will be celebrated at a special dinner prior to the one day Profibus conference and user group teaching workshops, which return again to Stratford-on-Avon on 26th June. For more info see www.profibusgroup.com.

The conference will concentrate on the real issues of implementation, maintenance and management of Profibus and Profinet systems for users, and will also include presentations from Brian Holliday of Siemens, one of the co-founders of the Profibus UK user group, and Karsten Schneider, current chairman of PI, Profibus International.

Promotion newsletter - ProfiNews

Soon after the formation of Profibus user groups in the UK and USA, Geoff Hodgkinson, Michael Bryant from Profibus USA, and Michael Volz of PNO, met together and decided that promotion of Profibus required a newsletter, as the official publication of the global Profibus International user organization, and ProfiNews was born. Hodgkinson from his experience in PR took on the rôle of editor of the new publication, from the start. As Volz, Director of PNO 1994-2000, but now with HMS Industrial Networks, comments:

Honeywell has been awarded four contracts worth a combined total of \$40m, for further work at the Borouge petrochemicals complex in Ruwais, Abu Dhabi. Honeywell will be the main automation contractor (MAC) for the Borouge 3 project, providing Linde and other EPC contractors involved in the project with integrated control and safety systems. Honeywell say that the installation of their control and safety systems, such as Experion PKS, Safety Manager, and Advanced Process Control will allow for operational integration, improved production, increased safety and reliability, and maximum operability and profitability. To achieve this, the Honeywell Real Time Information Management System will provide Borouge 3 with business solutions that streamline, centralize and optimize operations, allowing for increases in profitability and productivity. Borouge 3 is the latest expansion of Borouge's polyolefins plant. It aims to manufacture ethylene, polyethylene, polypropylene, and LDPE, alongside associated butane, utilities and offsite facilities. Honeywell technologies were implemented in the Borouge 1 project in 1999 and the Borouge 2 project in 2010, and will continue to help Borouge meet its goal of expanding capacity at the plant, making it the largest integrated polyolefins site in the world.

Emerson Process Management is expanding its AMS Suite preventive maintenance software to include connectivity for Profibus PA devices. Profibus describe this as further evidence of the unabated growth of Profibus solutions into all sectors of process automation. Emerson say this shows their DeltaV platform offers a complete solution, and that AMS Suite now supports both Electronic Device Description Language (EDDL) and FDT/DTM, to provide users with support for all their devices.

Emerson Network Power advise that their Chloride industrial UPS systems now generate and broadcast self-diagnostic data for transmission via the Profibus DP protocol for analysis by the Emerson Process Management AMS Suite intelligent device manager software, enabling the continuous monitoring of critical systems for predictive maintenance in process industry plants, as well as offshore facilities, oil and gas terminals and power generation systems.

“ProfiNews played a major part in the internationalization of Profibus, and helped to establish it as the leading plant-wide, worldwide fieldbus. Thank you ProfiNews and editor in chief, Geoff Hodgkinson!” While a little partisan, the sentiments are well expressed, and after all, the fieldbus wars were raging throughout the 1990s.

Standing firmly in place

Klaus-Peter Lindner of Endress+Hauser, and also a PNO Board member, carefully summarized the situation as he saw it: “The ‘Fieldbus War’ was reaching fever pitch [in 1997] and any promotion of any fieldbus was seen as a threat to someone’s interests! Rivals stood eyeball to eyeball as the standards committees tried to find a common solution. By this time, ProfiNews was already the most read newsletter in the fieldbus community. Editor Geoff Hodgkinson had done a tremendous job, somehow not abusing any party but nevertheless making excellent promotion for Profibus. Sometimes emotions boiled over! But everyone survived!”

ProfiNews started with a frequency of around three issues a year, but accelerated to at least twice as many after 2002: the latest issue hits the major milestone of number 100, all edited and produced by Hodgkinson over 20 years. During his tenure, ProfiNews has seen the rise of Profibus PA alongside DP, and the introduction of ProfiSafe, ProfiEnergy and ProfiNet – quite a lot to talk about but enabling ProfiNews to always maintain a fresh approach! See www.profinews.com

The international view - and battles

While the UK celebrates their 20th anniversary at the user conference in June, PNO in Germany (founded in 1989) had their 20 year celebrations for PNO in 2009, and produced ‘Milestones’ a coffee table book to mark the event, back then. In his introduction, Michael Bryant comments on the strategic marketing guidance provided by Geoff Hodgkinson, and his editing of the ProfiNews newsletter.

During the period known as the fieldbus wars, Hodgkinson was even threatened with legal action for describing the (then) proposed fieldbus standard as ‘intrinsic-

ally unsafe’. It seems use of the English language is just something that always has struggled to transfer properly between European and American cultures! Bryant comments that “Geoff insists that this marked the exact moment when common sense finally prevailed!” The rest, as they say, is history...

Endress + Hauser 60th anniversary this year

Endress + Hauser is this year celebrating its 60th year as a specialist in measurement and automation. They attribute their success to the continuity of a prudently run family-owned business whose first and foremost principle is to satisfy customers’ needs and requirements. ‘First serve, then earn’ was one of the mottoes of company founder Georg H Endress (1924-2008) – and it has lost none of its validity to this day!

A company, and a family

The company’s independence, fully owned by the founder’s family, has been laid down in a charter and is bound to be upheld in future. So there is no potential for any acquisition on the horizon, whether friendly or not!

Almost coinciding with the 60th anniversary, another remarkable landmark has been reached – the company welcomed its 10,000th employee. Around 500 new jobs have been created worldwide in the last 12 months alone. Continuity is held high in the family-owned business: in spite of the finance and public debt crisis in 2009, no employees were laid off – with the result that a new sales record was promptly accomplished in the following year after the economy had begun to recover.

Outlook for 2012 FY

With sales totalling Euro1.5Bn (\$1.9Bn), the Endress+Hauser Group marked up another record year in 2011 (**INSIDER**, June 2012 page 4) – in spite of a strong Swiss franc and a flagging economy in Europe.

“Although the market is extremely vola-



George H Endress with E+H staff in 1955

tile today, 2012 will be an excellent year for us,” says ceo Klaus Endress. “We trust in our strength and look ahead with confidence, but we must stay alert.” With well-targeted acquisitions in biotechnology, gas analysis and energy management, Endress+Hauser has recently rounded off its product portfolio. With an equity ratio of over 70%, the company is largely independent of lenders and is well equipped to meet the challenges of the future.

Westinghouse commits to Czech steel for Temelin

Danny Roderick, Westinghouse president and ceo, announced that after evaluation of the capabilities, quality and cost, “Westinghouse, Toshiba and our Czech partners are committed to sourcing a significant portion of all steel requirements for the Temelin AP1000s through Czech firms.” This is a part of the on-going localization efforts in preparation for the potential construction of Westinghouse AP1000 nuclear power plants in the Czech Republic, and regionally.

Westinghouse’s Czech partners Metrostav and Vitkovice would be responsible for procuring a total of nearly 80,000 metric tons of structural building steel, reinforcing steel bar, as well as the steel needed for AP1000 structural and mechanical modules. This is the equivalent of three Eiffel towers.

Westinghouse, a group company of the Toshiba Corporation, is a leading supplier of nuclear plant products and technologies to utilities throughout the world. To-

day, Westinghouse technology is the basis for approximately one-half of the world’s operating nuclear plants, including more than 50% of those in Europe.

Progress made at their Chinese nuclear plants

Westinghouse currently have contracts for four AP1000 reactors in China, at Sanmen and Haiyang. The first containment top vessel head was set at Sanmen on 29 January, in a major step towards completion.

AP1000 plant simulators have also been installed at both nuclear power plant sites: 34 reactor operators and senior reactor operators have already been trained and qualified at the Sanmen site. Another 36 Sanmen students are scheduled to complete training in February 2013, and a new class of potential operators will commence simulator training at Haiyang in the spring of 2013.

The AP1000 simulators translate and integrate the plant operations and process control systems with simulated plant dynamic models on a multiprocessor computer. The actual plant instrumentation and controls are used on the operator workstations to achieve the highest level of fidelity. It is in this replica control room that students are trained to become plant operators, studying directly on the control consoles, control panels and displays of the AP1000 nuclear power plant control room.

The first unit at Sanmen is due to start to produce electricity in 2014.

- In the UK the Centrica group has decided not to take up its option to join EDF in the project to build nuclear reactors at Hinckley Point in Somerset (see **INSIDER** September 2012 page 6). Centrica owns British Gas, and possibly sees more profitable investments in this area. The major obstacle to the Hinckley Point go-ahead appears to be the failure of the UK Government to agree a premium price for the electricity that will eventually be produced – EDF may now turn to China for a partner in the venture.

The new Vacon 100 Flow range of AC variable speed drives have been optimized for efficient flow control with pumps and fans, and offer dedicated application menus for typical applications, using two zone PID control and multi-motor facilities as standard.

The two zone PID control allows two process parameters to be controlled simultaneously, and include frost protection, soft pipe filling, and anti-ragging functions. A real time clock allows pump duties to be rotated or scheduled, and logged diagnostic information to be time stamped. Multi-motor operation allows a single drive to control and rotate up to eight pumps, without the need of contactors. Ethernet and RS485 ports are available, allowing communications to building management systems using Modbus RTU or TCP, Profinet IO, Profibus DP, Lonworks or BACnet.

IMS Research says that Compact AC drive average selling prices declined by nearly 4% in EMEA and Japan. Compact AC drives are those rated less than 25 kW, used primarily in fan and pump applications. In 2012, demand for low-end drives remained strong: compact AC drive shipments grew 2.6% over 2011 levels, reaching nearly 11 million units. Numerous Chinese suppliers such as Delta and INVT have been successful, and are entering the EMEA market, capturing market share there over the past year.

Dennis Morin, a leader in the burgeoning Orange County software industry in the 1980s, sadly passed away after a battle with cancer at the end of 2012, at the age of 66.

In 1987 he started Wonderware, in Irvine, California, with a long-time technology executive and software engineer Phil Huber. Wonderware was a pioneer in utilizing the then-new Microsoft Windows software to monitor machine activity on the factory floor. It was also one of the earliest companies to develop the human machine interface software, that is still widely used today. Listed by InTech as one of the 50 most important people in the history of industrial automation, along with Thomas Edison, the Wright Brothers, and Bill Gates, Morin also made millions when Wonderware went public in 1993, raising \$32m in its initial public offering.

He left the company in 1995: a day of 'extremely ambivalent' feelings. In 2001 he told the Orange County Journal: "I wanted to leave....I wanted to stay....but after nine years of busting my hump I really wanted a break".

Three years later, Wonderware was acquired by the predecessors of Invensys plc, for \$375m. Wonderware still employs around 500 people in Orange County, and has an estimated \$200m in annual sales.

Legacy nuclear clean-ups planned across the UK

The NDA, the Nuclear Decommissioning Authority, is responsible for the safe clean-up of the UK's civil nuclear legacy, in a 'safe and cost-effective manner'. The NDA owns 19 sites previously under the control of UKAEA and BNFL: this includes 39 reactors, 5 fuel reprocessing plants, 3 fuel fabrication plants, a Uranium enrichment plant and 5 nuclear laboratory complexes.

Negotiations with four consortia are now to commence, over a GBP7Bn (\$11Bn) decommissioning contract to run in two phases over 14 years. This will cover 10 Magnox nuclear power station sites, plus the Harwell and Winfrith nuclear research centres, these two currently being owned by Babcock International.

Competition is central to the NDA's strategy for securing world-class skills and experience to drive forward decommissioning across its estate. The NDA's Competition Manager, Steve Dixon, said: "We are pleased to be entering this critical phase of the competition, which is vital in helping the prospective bidders to understand our requirements and to put their proposals together." Following the dialogue phase, designed to assist bidders in the preparation of detailed proposals, the NDA will issue an invitation to submit final tenders. The competition will take two years, and be completed in 2014.

The bidding consortia are: Reactor Site Solutions (Bechtel, EnergySolutions); the Babcock Fluor Partnership; CAS Restoration Partnership (CH2M Hill, Areva, Serco); UK Nuclear Restoration Ltd (AMEC/Atkins).

Algerian attack raises security questions

The terrorist attack on the In Amenas gas facility in Algeria on Wednesday 16 January no doubt triggered significant vulnerability reviews and assessments at other sites.

In Amenas is a joint venture gas project, owned and managed by a joint venture

that includes the Algerian state oil and gas company Sonatrach, Statoil of Norway, and BP. It is located in the eastern central region of Algeria, about 60 km west of the Libyan border. At any one time there were quoted to be 500-700 staff and contractors on site.

BP had 18 of their employees involved in the incident at In Amenas, and 14 were brought home safely: four others are believed to have died or are unaccounted for. It is believed that at least 37 foreign workers died in the incident. Since the attack, a total of 43 BP staff from various locations across Algeria have left the country. The incident has forced a broad re-appraisal of energy industry security in Algeria and in other countries.

Public pronouncements

In the Norwegian Parliament, Ola Borten Moe, minister of petroleum and energy, told *Dow Jones Newswires* in an interview, that their Norwegian on-shore but coastal facilities like the Sture oil terminal, the Kollsnes and Karsto gas processing plants, the Statoil Mongstad refinery and terminal, and the Snohvit LNG plant, are protected only by fences and unarmed guards. The Prime Minister, Mr Stoltenberg, has said the country would strengthen its police and emergency response units, and undertake a review of the security of critical infrastructure sites.

The conclusions of a report by Frost & Sullivan seemed fatuous: "a technologically advanced security strategy is required to tackle issues including terrorism against oil and gas infrastructures around the world to ensure continuity of supplies". However, one sensible observation they made was that "Being situated in remote locations should be a cause to invest in securing these infrastructures rather than an excuse for not having adequate security".

● The strong growth achieved by the Honeywell Experion PKS based perimeter security business currently based in Dubai to serve customers and installations in the Gulf and Middle Eastern locations, was featured in the **INSIDER** for December, page 10.

Specialist valves contract for Indian Navy carrier

Wolseley plc is the world's largest specialist trade distributor of plumbing and heating products to professional contractors and a leading supplier of building materials in North America, the UK and Continental Europe. Total group sales last year were \$20Bn, with a profit of \$1Bn, so this is quite a significant business. In the UK their stockist network Pipe Center (sic - yes even spelled like that) is a leading supplier of heating, pipe and related products to the commercial and industrial building services industry. Focusing down further, within Pipe Center, Valvestock is their business brand for specialist valves and actuators: the new Valvestock offices in Fareham UK, on the south coast, has an industrial project specification team supplying the power, oil and gas, water and waste, chemicals and pharmaceuticals businesses.



*Marcus Sampson:
Investing to win business
in specialist valve projects*

Specialist valve projects

Marcus Sampson, who heads Valvestock, commented at the beginning of January: "We have been very successful in this area in the past, and won some major projects due to our unrivalled experience. We are now investing in additional resource to enable us to be proactive and win new business in specialist valve and actuator projects, both in the UK and in a growing overseas business. We recently won a major supply contract for a new hospital in St Lucia."

By the end of the month news came of another major contract win, with an order to supply Johnson Controls with valves

and ancillary equipment for the fit-out of a new aircraft carrier for the Indian Navy. Working with this UK based engineering contractor, Valvestock is to supply stainless steel butterfly valves in 316L, nickel aluminium bronze butterfly valves, high performance stainless steel fire safe valves, and gate, globe and check valves in nickel aluminium bronze - plus also safety relief and pressure regulating valves.

Sampson commented: "Given the application, strict performance specifications apply to the equipment and conformity testing is required prior to delivery. Shock testing has already been carried out on the stainless steel butterfly valve and it has been successfully passed for use in naval marine environments."

The ship is expected to enter service in 2018, and is one of two Vikrant-class aircraft carriers currently being built in India.

Process Management Q1 shines, in Emerson gloom

For the Emerson Group, David Farr, chairman and ceo, last week presented the 2013 Q1 results. For the whole group, Q1 sales were up around 5% at \$5.6Bn - Farr sees 2013 growth as a whole likely to be 2-5%, mainly achieved in the first half.

The detail by division was more interesting. Process Management Q1 sales were up 24% on Q1 last year, which was affected by the supply disruption from the Thailand factory flooding. But there was continued growth in oil and gas, chemical and power industry sectors. All areas geographically were up on last year, with the best results from Latin America (up 44%) and MEA/Africa (up 36%): Europe was up 11%. The pie charts shown overleaf for Process Management FY2012 sales were hidden away on the Emerson.com website. For 2013 Q1 the order growth in Asia was quoted as robust, at 11%.

Process Management earnings compared to Q1 last year were boosted, with EBIT up 75% at \$333m, and margin rising back up to 17.6%, on the back of strong volume leverage and benefits from cost reductions. There was also a shift of the

Metso is to supply 300 on-off ball valves and control butterfly valves with both soft and metal seats in sizes from 0.5" to 18" to the Shaanxi Yanchang ChinaCoal Yulin Energy & Chemical Company, in the Shaanxi province in China. These valves are for a UN project that is intended to utilize the abundant resources, including oil, gas, coal and salt, found in the Jingbian region, to realize its economic transformation.

The soft seated valves will be used in Stage 1 and 2 polypropylene production units. The metal seated valves, with HVOF (high velocity oxygen fuel) coatings will be used in the low and high density polypropylene and the catalytic cracking applications, where high temperatures and heavy wear conditions are experienced. Then 33 valves will be supplied for the product discharge systems (PDS) on the LDPE installations: soft-seated PDS valves are considered to be a weak link in processes seeking to improve output by using high-productivity catalysts. Metso's experience and valve selection knowledge in PDS application provide a competitive edge to chemical companies seeking to improve output for processes using a high-productivity catalyst with these superior metal seated PDS valves.

To ensure successful start up, Metso will deploy a technical service team on-site to assist with installation and training.

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business mix towards larger projects: in fact high-margin maintenance sales were lower, especially in such MRO sales in the USA.

Other divisions compared poorly to last year: Industrial Automation was down 7% in sales, with 'anaemic' global demand for industrial goods, particularly elec-

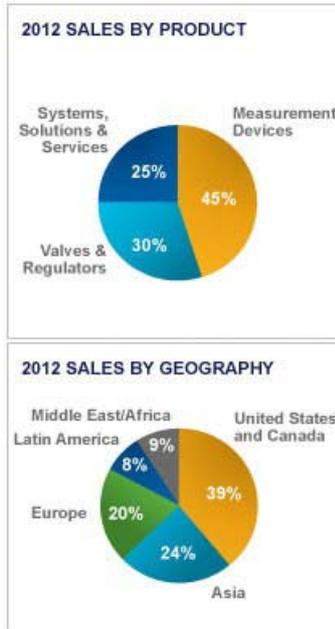
trical drives and motors, and power generating alternators. Network Power was down 2%, with embedded computing sales flat – this business is up for sale. These were much the same comments as reported for last year's results in the December **INSIDER**, page 11.

● Honeywell group 2012 results were up 3%, at nearly \$38Bn sales, so the Process Solutions business, reporting 3% growth, was not out of line with the rest. Apparently several large new orders were booked in December, but the results were affected by the extended timescales imposed on various projects by customers. HPS is in the Automation and Control Systems business, which was quoted to have done well in North America, up 4% growth, and with 7% growth in China – Europe did not show a decline, it grew 1%.

Bilfinger expands in UK automation and services

Bilfinger Berger Industrial Services Group (BIS Group) has acquired the HG Group, a specialist in system integration and automation in the United Kingdom. HG Group has 100 employees specializing in system integration, automation, functional safety and on-site system support in the nuclear, energy, process, oil and gas sectors for over 40 major customers in the UK and the Middle East: annual sales revenue was Euro15m (\$20m). In 2012 HG Systems were presented with the Siemens Best Factory Automation Solution

Emerson Process Management
Figures for FY2012



Partner Award for their work with Siemens products in 2011.

Dr Rudolf Jürcke, coo of BIS Group, explained: "For the BIS group this builds on our strategy of broadening our control and instrumentation services, in this case through increasing our system design and engineering skills." In the UK BIS Industrial Services and the BIS ATG company serve the onshore market from bases in the north-west, and this acquisition will strengthen the control and instrumentation business within BIS ATG – the HG Group will be integrated into BIS ATG.

UK revenues for the BIS Group amount to more than Euro370m (\$500m), with over 4000 employees mainly serving the chemicals, refining, energy and oil & gas markets across the UK. BIS is a subsidiary of the engineering and services group Bilfinger, based in Germany, which has 60,000 employees, with 30,000 in industrial services: sales for the first 9 months of 2012 were Euro6331m (\$8.5Bn).

Bilfinger also acquired the Minnesota based water technology specialists Johnson Screens in January 2013, which supply screens to the water and waste water industries. Johnson Screens has 1200 employees and Euro160m (\$216m) of sales, and joins Diemme of Italy, a manufacturer of chamber filter presses, also recently acquired, to create a water industry operation within Bilfinger.

Wireless switches can be used for both EU and USA

From Germany, position and proximity switch manufacturer steute has introduced wireless remote switching systems that operate on 915MHz, as well as the 868MHz systems that are utilized in Europe. This allows machinery manufacturers exporting equipment to the USA and Canada to use the same equipment profiles in the 915MHz band, which is acceptable in North America: the European 868MHz systems are not authorized for use in the USA and Canada.

The sensor range offered by steute includes switches that use energy harvesting techniques to power the radio signals from the mechanical actuation of the switch plunger, whether using a push- or pull-switch or a pull-wire principle. There are also battery driven RF proximity switch models that initiate similar radio signal transmissions, using either 868 or 915MHz transmission.

● Expect the next **INSIDER** on 11 March.