

# Read-out



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Ireland's journal of instrumentation, control, and automation

## Conquering complexity

### A solution to paradoxical problem presented

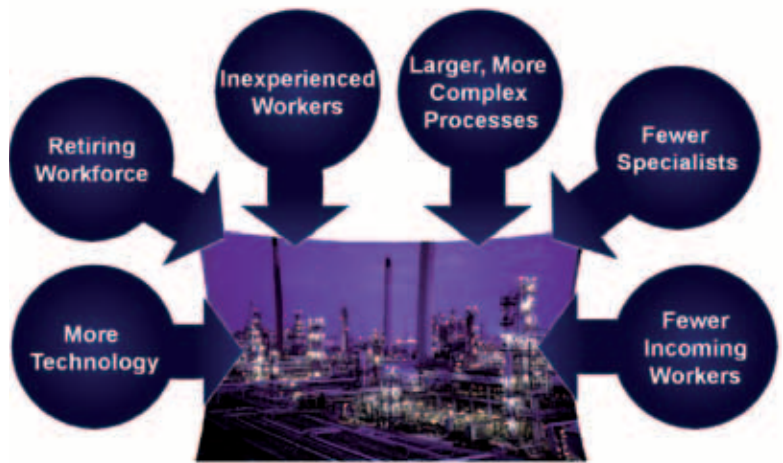
**E**merson **Process Management** held a press conference at Rijswijk, their Netherlands' headquarters in mid November. It preceded their user meeting held on the 19th November. **Complexity**

The meeting started with a focus on customer usability. They introduced a new technology to improve the usability of automation systems products helping to increase operator productivity.

**Bob Sharp**, Emerson Project Managements new President in Europe made a presentation on a topic troubling us all in this time of startling change.

Firstly The combination of leaner staffs and loss of experience creates a knowledge void. Two things are happening here. Staff with automation experience are fewer on the ground now and people are being moved out of the plant into the safe area. The figures are stark indeed, as reported recently in InTech, the American Petroleum Society estimates that 40% of their workforce will have reached retirement age by next year (2010). As this destaffing is occurring plants are becoming larger and ever more complex. For example most transmitters these days have more computing power than the first DCS controllers.

A major plant accident in a Texas (US) petrochemical plant was attributed to "operator error." The investigation into the accident discovered that the unit's engineer



and the operators in the control room at the time of the accident had all been on the job less than one year.

These paradoxical happenings - more complex plants, less experienced and fewer staff, have major implications for companies such as Emerson.

So how is Emerson coping with this dilemma?

Like virtually every organisation they did not have the expertise to understand fully, never mind solve, the problems that the new fast approaching reality was starting to present. So they trawled the various - and few - institutions which study this and finally established a relationship with Carnegie-Mellon Human Computer Interaction Institute (CMU-HCII). Basically and very simply the result of their research and study since 2004 is to concentrate on the HUMAN side of HMI. Since there will be less

### Cables no longer required



**T**he new STAHL 8074 F series position switches and 8040 F series command devices from **Douglas Control & Automation**, are truly, completely wireless solutions for radio signal communication. Requiring neither signal lines nor external energy supply connections, the units can be freely installed in zone 1, 2, 21,

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# Control In The Field Enhances Process Integrity

New white paper from ARC examines business value proposition of FOUNDATION™ technology

The Fieldbus Foundation, at a press briefing at SPS/IPC/DRIVES 2009 in Nuremberg (D), unveiled a new ARC Advisory Group white paper describing the benefits of control in the field (CIF) with FOUNDATION™ fieldbus. According to ARC, the American manufacturing research and advisory firm, CIF strategies supported by FOUNDATION™ technology improve process control performance by allowing for superior reaction to deterministic disturbances in industrial plant operations.

In the white paper, titled “The Business Value Proposition of Control in the Field,” they describe the incorporation of a function block structure and other supporting functions in FOUNDATION fieldbus (FF) providing a complete automation infrastructure for operational excellence. Embedded control functionality in FF devices is one of the key enablers for achieving high availability control and a stepping-stone towards single-loop integrity.

Results from testing and real-world applications demonstrate that control in the field with FF technology has the potential to deliver a 30 percent improvement in control performance with very fast, fast and medium-speed process dynamics. CIF can also provide up to three-times higher control loop availability than conventional analogue control.

FF President and CEO **Rich Timoney** indicated that the new white paper provides valuable insights for automation end users seeking to maximise the benefits of FF technology. “As reported by ARC, FOUNDATION fieldbus provides business value in three key areas—process integrity, business intelligence, and open and scalable integration of information across process manufacturing plants. FOUNDATION fieldbus control in the field ensures tighter control and higher availability. It is a critical element in providing significantly enhanced process integrity for many applications and control loops. This enables process industry end users to increase revenue and profits, which are the drivers for investing in new technologies.”

Timoney added, “Thanks to recent, comprehensive studies of control in the



FOUNDATION fieldbus provides business value in three key areas (ARC)

field, end users now have the first definitive proof that FOUNDATION-based CIF strategies yield significant operational improvements, which result in bottom-line business benefits.”

Shell Global Solutions International (SGSI) has performed extensive evaluation of control in the field. A statement by the company indicated, “Control in the field using FF technology is recommended by SGSI for simple and cascading loops, not for complex loops. Major benefits identified by SGSI are reduced process controller loading, reduced network traffic enabling more loops per segment, as well as very fast loop response.”

With control at the device level, process automation functions are truly distributed and there is no single point of failure in the control system above the H1 (field device) level. If there is a malfunction in the HMI and a loss of visibility into the process, controllers, or any other component in the system and the control loop, including intelligent field devices, actuators and positioners, and the network, remain unaffected.

Field-level control also enables greater flexibility in plant automation strategies. For example, controllers are free to handle higher-level control functions such as advanced control and optimisation. FF allows for “dynamically instantiable function blocks,” meaning that function blocks can be activated in different components of the system as they are required. In addition, there is a large library of different block types that can be used aside from basic PID, such as switches, alarms, etc.

According to ARC Analyst **Larry O’Brien**, principal author of the paper,

control in the field improves control loop performance due to its ability to offer faster sample rates and shorter latencies in the read-execute-write cycle of control loops. While the advantages of increased integrity, flexibility and reliability can be attributed to all control in the field loops, control loop performance benefits can be most significant in fast process loops, including many flow and pressure loops and some temperature, pH, position and speed loops. The improved flow and pressure control provided by control in the field means the performance of slower loops could also be improved because of the complex interactions of control loops in process plants.

Industrial Systems & Control Ltd. (ISC), a specialised control engineering consultancy with close links to the Industrial Control Centre at the University of Strathclyde, recently issued a study titled “Control in the Field: Analysis of Performance Benefits.” In the first of a series of simulation studies, ISC examined the differences in timing and sequencing associated with control in the field with a fieldbus system versus a fieldbus system employing control in the host (DCS) to establish typical latencies and sample rates that limit control performance. Many different scenarios and process dynamics were tested.

As described in this white paper, ISC found that in typical fast process applications, control in the field can provide improved performance over conventional analogue control. Improvements in response time of between 10 and 30 percent were recorded, in addition to improvements in disturbance rejection of up to 20 percent.

The white paper concludes that the performance improvements of control in the field must ultimately be linked to a business value proposition, which is the measure of value for the implementation of any new technology in the plant. Additional benefits above and beyond control performance include reducing product variability, speed of grade changes, reduced time to startup, increased availability, and energy savings.

[www.fieldbus.org](http://www.fieldbus.org)



Process automation just got easier.  
Again.



Introducing the DeltaV S-series. A fresh look on usability down to the smallest detail – from the new, patent-pending hardware that minimises installation complexity and maximises plant availability, to the more intuitive operator displays, to built-for-purpose smart security switches that minimise your lifecycle costs. The re-designed DeltaV system embeds knowledge, reduces complexity, and eliminates work – bringing a new level to the now-familiar DeltaV standard: Easy. [www.EmersonProcess.com/DeltaV](http://www.EmersonProcess.com/DeltaV) or call 021 480 7500.



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EMERSON. CONSIDER IT SOLVED.

Products from page 1

people with the qualifications to run a complex system then the complex system must be capable of operation intuitively.

Signalling an important change in technology trends, they are making process control technology easier to use with its introduction of their Human

Centered Design Institute. This culminates more than five years of customer work-practice analysis, new product development re-engineering and organisational training. The goal is simple: make products that are not only reliable, compatible and cost-effective, but also bring about a

significant improvement in ease-of-use and workforce productivity. In short *"Reversing the Master / Servant relationship between technology and people will reduce product complexity and improve productivity"*

The idea is to concentrate on the customer, the human, the person working the system from early conception, through design, construction, testing, handing over and finally operating. Sometimes it is better to emphasise what something isn't in order to stress how it is different.

**HCD Designs are NOT:**

*Based on traditional customer interviews or focus group research;*

*Feature/function driven;*

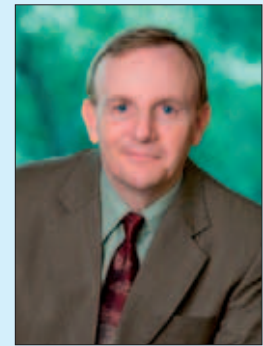
*Just focused on screens.*

So how does HCD manifest itself in our industry? Well according to Bob Sharp and Emerson there are three ways. It eliminates unnecessary work processes, removes the complexity of using technology and embeds specialised knowledge. This embedding enables the system to tell the operator *"There is a problem!, the problem is here and this is how you fix it!"*

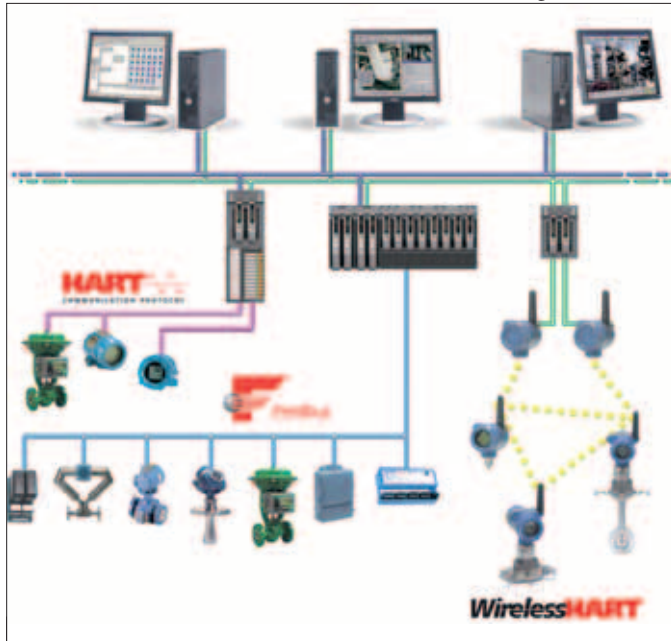
OK! So that's the philosophy done but what do they suggest to exemplify this philosophy and how do they express it practically in their offering?

They have enhanced their PlantWeb architecture with the new DeltaV S-series. A change that essentially eliminates the need for a physical path from signal source to controller. Instead new single channel CHARACTERISATION ModuleS or CHARMS relay I/O information via the Ethernet backbone to any controller and provide single channel integrity and flexibility down to the channel level. (See representation at bottom of page!)

**The table 2 discussion**



**D**uring the group meal prior to the event Peter Zornio (above) on Table 2, took issue with us on our report (in the EtherNet Book see <http://bit.ly/1hZXBJ>), on the ISA Expo'09 where we said that the ISA 100.11a standard did not appear to have any input/co-operation from Emerson. He pointed out, and indeed we can confirm, that Emerson were indeed participants in the discussions and on the committee which eventually came up with this standard. It was however a standard which "owed more to the work undertaken "in-house" by Honeywell than to the more open and non-exclusive formula adopted in practice by Emerson and others, which two years ago culminated in the launching of WireLessHART." There were three words he used to emphasise which standard will be finally accepted. Those words were interoperable , multi-vendor, and, product. WirelessHart has had a two year headstart on ISA 100.11a and has a proven record out on the field. ISA 100.11a is only three months old he continued. Having said that he also maintained that in the event that the ISA 100.11a standard was accepted in the market place then of course Emerson would provide equipment compatible with it.



**The latest on FDI**

*Suppliers unified for field device integration*

**T**o accelerate deployment of the Field Device Integration (FDI) technology, Key Suppliers agreed to enlarge the scope of the EDDL Cooperation Team and will become the FDI Cooperation.

This cooperation will initially consist of the associations: FDT Group, Fieldbus Foundation, HART Communications Foundation, OPC Foundation and **PROFIBUS** Nutzerorganisation, as well as the companies **ABB, Emerson, Endress+Hauser, Honeywell, Invensys, Siemens,** and **Yokogawa.**

The FDI project was kicked-off at 2007 Hanover Fair. At this time ECT welcomed FDT Group with the primary objective of harmonizing EDDL and FDT/DTM technologies. Since then, the project has carefully shaped the technology direction for the converged FDI solution.

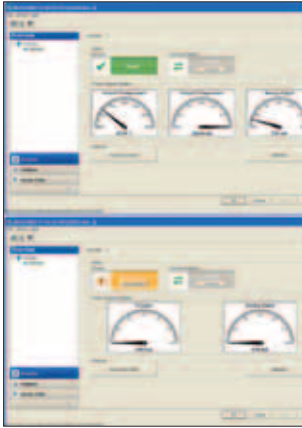
The addition of supplier companies, which have agreed to support FDI packages in their systems and products, will strengthen this effort by providing resources for the completion of this project.

Besides the finalisation of the FDI specification, which is scheduled for mid 2010, the scope of the enlarged EDDL Cooperation Team is covering common design and test tools, common binary format and interpreter across the protocols of HART, FF and PROFIBUS.

The intent is to assure a uniform device integration solution for process industries across all host systems, devices and protocols as required by end users.



Products from page 4



Secondly in their AMS Suite they have introduced what they call Device Dashboards. (See picture above)



THUM (The HARTWireless Upgrade Module; picture above) which converts any HART device to wireless thus enabling new measurement points. They have also introduced the unique Wireless Valve Position Monitors which again delivers previously unavailable equipment data.

**Entertainment**



Travis Hesketh vainly defends the status quo at Emerson's conference!

Because some of us had shared albeit virtually or maybe vicariously some of the Emerson Exchange 2009 presentations earlier in the year (see <http://wp.me/pt7Kv-ft>), the fame of the next presentation, a demonstration of the old versus the new in competition had assumed something of a cult status and so people were most anxious to see this. Basically **Peter Zornio**, Emerson's Chief Strategic Officer pitted the European Director of PlantWeb, **Travis Hesketh** as the champion of the conservative or conventional approach versus **Duncan Schleiss's** modern I/O on demand of the new Delta V Series S (Which Peter claims stands for "sleek and sexy" and who are we to argue?) He set four tasks to each side and despite his best efforts the result in all four competitions saw Travis conventional, and for more than thirty years the only, solution lost out to the new, simpler I/O on demand which has so transformed DeltaV that they have changed it's logo. This was an entertaining and educational way of getting this message across.

A second presentation, moderated by **Dale Perry**, Pressure Marketing Manager with Rosemount, also cleverly demonstrated the simplicity of the new AMS Device Dashboards versus the more conventional systems by pitting two editors against each other one conventional and the other using the newer more simple and intuitive system. The second half of the event featured lots of news about Smart Wireless in use throughout the globe. They

introduced customer applications, sharing their stories of innovation and business value, as well as launching above of significant new technology for even more robust, reliable wireless installations. (see box entitled Table 2 Discussion)

See our blog <http://wp.me/pt7Kv-oy> for more on this and links to other reports)

**Controller/Calibrator**



The DH Instruments Division of Fluke Corporation marketed here by **Irish Power & Process**, has announced a significant enhancement to its PPC4 precision pressure controller/calibrator product line. PPC4 is a high performance pressure calibrator for testing pneumatic pressure instruments. It is designed to provide versatility and ease of use in calibration labs and manufacturing environments. The maximum pressure range of the PPC4 has increased to cover the absolute pressure range of 1 kPa (0.15 psi) to 14 MPa (2,000 psi) and gauge pressure equivalent, including very low differential pressures. The patented dynamic control is further improved, extending the minimum controlled pressure down to 1 kPa. As always, PPC4 offers industry-leading control precision to ensure the lowest total uncertainty on dynamically controlled pressures, and to maximise the range covered by a single controller.

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No cables from Page 1

or 22 hazardous areas. Users therefore need not worry about **any** wiring when retrofitting the command devices into difficult-to-access machines or plants. Since there is no need to route cables around or over joints or bearings, the switches are particularly suitable for reporting positions from movable machine parts. The switching signals are transmitted on the license-free SDR band at 868 MHz. Up to 300 m max radio range outdoors and a 30m range within build-ings ensure that receiving units can usually be placed within safe areas. These may be equipped with flameproof enclosures. The Ex switching devices generate the energy required for sending data messages by means of an integrated induction generator: when the switching element is actuated, the kinetic energy of the switching process is electro-dynamically harvested, and immediately used to feed the radio module. In contrast to battery-supplied wireless switches, these self-supporting units do not need any regular servicing to remain fully functional. With a maximum transmitting power of 10mW and maximum energy quantities of 50 µJ, radio communication according to the EnOcean standard does not amount to a potential ignition source in hazardous areas. Both units are suitable for operation in a wide temperature range from -20 to +60 °C. The IP65-unit is designed to withstand the harshest environments.

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# Big changes at International Society of Automation

The International Society of Automation recently unveiled plans for its new event, ISA Automation Week: Technology and Solutions Event, to be held 4-7 October 2010 in Houston, Texas, USA.



ISA Automation Week will feature intensive educational and applications-based technical conference sessions delivered by subject matter experts. Discrete and process automation professionals will have a chance to learn techniques and solutions

for creating more efficient, productive, and economical manufacturing processes. ISA training courses and standards meetings will also be held concurrently, making ISA Automation Week a one-stop shop for automation and control knowledge and networking opportunities.

The ISA Automation Week conference program will focus on the latest industry developments and standards in key manufacturing disciplines like automation, energy and power, green manufacturing, instrumentation and process control, safety and security, systems and enterprise integration, and wireless, networking, and industrial communications. Conference sessions will include both theory-based and applications-based presentations to appeal to a wide variety of automation and control profes-

sionals. The event will feature a focused exhibition area for a limited number of companies to showcase products and services during scheduled networking and exhibit sessions. Currently, 65% of the space available for the exhibit has been sold.

*“ISA Automation Week is organised around a different model than ISA has used in the past. The new model focuses on the conference as the centre of the event, because we believe that automation and control professionals at every level seek knowledge above all else. By centring the event on the conference, we can help exhibitors create more successful interactions with serious and focused attendees at all levels,”* said ISA Executive Director and CEO **Patrick Gouhin**.

*“ISA is all about knowledge. The conference focus of this*

*event will help us deliver a top-notch technical curriculum to our attendees, and it will benefit our partners and exhibitors as well,”* said ISA Automation Week Program Committee co-chair and 2009 ISA President **Jerry Cockrell** of Indiana State University. *“By drawing on our connections to the academic community to develop presentations in addition to our strong applications-based technical network, we can create a well-rounded program that attracts all levels of automation professionals.”*

The increased focus on the conference aspect of the event is a positive development for automation suppliers as well, said 2010 ISA President **Nelson Ninin**, who is the President of Yokogawa America Do Sul SA. *“We believe that an educated prospect is a qualified prospect. Our attendees will spend three*

To page 9

## Which company should you contact when looking for solenoid valves?

- The one with the broadest range?
- The one with the largest range of ATEX approved products?
- The one with the reputation for quality?
- The one with the necessary certification and approvals?
- The one that has fieldbus devices?
- The one that has been manufacturing in the UK for more than 50 years?
- The one that can deliver product on short lead times?
- All of the above

With the broadest range of products suitable for the process industries, Asco Numatics is the supplier of choice for many of the UK's processing plants. With a range of solenoid and pilot valves, valve islands, filter regulators, actuator control systems and redundant control systems, Asco Numatics has the products you need.

For more information call **01695 713600** or visit [www.asconumatics.co.uk](http://www.asconumatics.co.uk)



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Industrial Automation

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Products from Page 5

PPC4 enables users to select the user interface that best fits their application and budget. Bench top users can select the advanced graphic colour display with point-and-click navigation to streamline pressure calibration and testing tasks. The advanced graphical user interface now supports many different languages.

If PPC4 spends most of its time interfaced with a computer, choose the basic front panel to minimise cost. Both interfaces include a front panel USB connection and free cockpit software for full PC-based 'plug and play' functionality.

DHI's COMPASS for Pressure calibration assistance software provides an advanced off-the-shelf tool to quickly automate your calibration and testing processes and handle a wide array of special requirements.

PPC4 uses DHI's exclusive, individually characterised, quartz reference pressure transducer (Q-RPT) modules for increased precision and reduced measurement uncertainty. The AutoRange™ feature supports infinite ranging, automatically optimising all aspects of operation for the exact range of the device being calibrated. It is rugged enough for mobile applications and standard shipment without special packaging.

[www.irishpowerandprocess.com](http://www.irishpowerandprocess.com)

**Digital Pressure Gauge**



With the Barflex, Baumer offers a robust digital manometer with integrated data memory. In the ATEX version Barflex 4Y, it is also suitable for the use in rough and hazardous surroundings. It can measure the gauge and absolute pressure

of almost all liquid and gaseous media in a range from 500 mbar to up to 1000 bar and with an accuracy of up to 0.1 % of full scale. Used as a barometer, it displays the atmospheric pressure from 200 to 1150 hPa with an accuracy of 1 hPa.

The digital pressure gauge is housed in a splash water-proof Epoxy-coated aluminium case and corresponds to the protection class IP65. It is available in a stationary and portable version and is most suitable for measurements on site. Via a standardised infrared interface, the collected data can be transferred directly to a PC. The device automatically memorises minimum and maximum pressures recallable at the display. The measurement of pressure deviations in a given time interval enables leak tests. In addition, the Barflex allows the calibration and verification of the correct operation of the installed devices as well as the verification of pressure switch and transmitter settings.

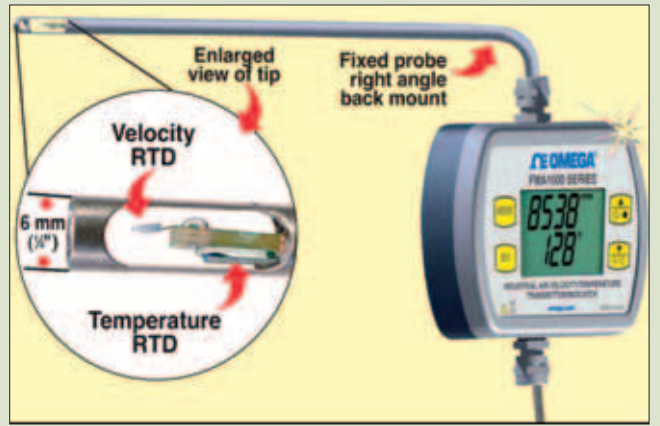
The Barflex is suitable for applications in pneumatic, hydraulic and thermodynamic areas as for example in gas engines, laboratories or maintenance. In its ATEX version, the Barflex can also be used for the petrochemical and gas industry, for example in gas underground stores, gas delivery installations or gas expansion systems.

[www.baumer.com](http://www.baumer.com)

**Isolation Valves**

Gems Sensors & Controls marketed in Ireland by **Manotherm**, have a new K Series of inert isolation solenoid valves. Constructed from chemically inert materials such as: PTFE, ETFE, EPDM, FKM, FFKM, PEEK, PPS and PSU, the K Series of isolation valves is an excellent choice for any application requiring various levels of chemical resistance and/or sample purity.

**Industrial Air Velocity/Temperature Transmitter/Indicator**



The FMA1000 Series industrial air velocity and temperature transmitter/indicator is designed and manufactured by Omega. It displays air velocity as well as air temperature. Applications include research and development labs, HVAC applications, and other manufacturing processes. The sensor design is based on three RTD elements, one measures air temperature and the other two measure air velocity by measuring the heat loss from the RTD sensor as it cools down by the air flow. The FMA1000 series offers many standard features such as back-lit LCD display of air velocity and temperature (can be displayed in different Engineering Units), two analogue outputs corresponding to air velocity and temperature, high and low velocity voltage alarm outputs, USB serial interface, and a Windows based PC interface software. The sensor probe is available in fixed top, right angle mount, and remote probe configurations.

[www.omega.com](http://www.omega.com)

Typical applications include Liquid Chromatography, Gas Analysers and Water Quality Testers.

Offered in multiple body sizes, port configurations, and a choice of wetted body and diaphragm materials, the K Series is a truly modular platform of direct acting round bodied solenoid valves, offering superb power, flow, durability and life optimisation. This range of inert valves is comprised of three groups: the KS Series features 2-way valves with a Maximum Operating Differential Pressure (MOPD) of 20 PSIG; KM/KL Series are available in 2-way and 3-Way Directional configurations, with MOPDs up to 30 PSIG; and the KV/KW Series offer 2-Way and 3-Way Directional configurations, with MOPDs as high as 20 PSIG.

*“Progressive moulding and manufacturing techniques allow Gems to deliver precise, durable orifices and diaphragms in materials that our customers demand,”* said **Jessica Light**, Medical Market Manager, at Gems Sensors & Controls. *“Gems is very excited about how well this critical element of inert fluid control enhances our ability to deliver complete fluidic systems to our medical and life sciences customers.”*

They specialise in providing complete fluid sensing and control solutions to meet exacting customer application requirements—from custom coil windings to highly specialised materials. Each custom made coil and valve is assured of exacting standards, unsurpassed quality and 100 percent tested reliability.

[www.manotherm.ie](http://www.manotherm.ie)



ISA News from page 7  
*intensive days learning about the latest technologies and solutions in the world of automation and control, and they'll be ready to see the products that our partner companies have to offer in those areas. This is a great opportunity for a company to showcase its products as solutions to the technical challenges and developments presented in the conference sessions."*

<http://bit.ly/5k3wMo>

In a separate development ISA announced a new Chief Editor for InTech, one of its periodicals. He is **Bill Lydon**, automation industry writer, analyst, and consultant. Lydon will lead the

InTech editorial team and manage the strategy and content of the print, digital, and online versions of the magazine in collaboration with the InTech Editorial Advisory Board. He will draw from the expertise of ISA's Members and leaders to focus on the most important automation industry news and trends, and provide unbiased coverage of the automation market. Subject-matter experts will develop stories and cover the important industry issues outlined in the 2010 InTech editorial calendar to meet the technical information needs of automation professionals around the world.

[www.isa.org/intech](http://www.isa.org/intech)

## Flood relief!



**M**MeasureIT, who recently continued their support of the **Read-out Instrumentation Signpost**, were quick off the mark with an e-mail message as soon as the extent of the recent floods was known. This stated:  
*"We've been hit by severe floodings again and even more rain is coming this weekend. But there's a proven way to protect our homes and businesses, infrastructure."*

They kept their services open all that first weekend and gave an after hours number. Special post flood pricing and free design advice was

offer and best of all perhaps an ex stock Gorey, delivery.

The Tideflex check valves they market are really a revolutionary design for backflow prevention. The valves elastomer "duckbill" was designed to eliminate the problems associated with flap gates - corrosion, freezing, warping and clogging because of trapped debris. Tideflex requires no routine maintenance or repair due to its all-rubber construction - sliding, rotating, swinging and plunging parts are eliminated.

[www.measurit.com](http://www.measurit.com)

### Fit & Forget Instruments & Controls

Manotherm, 4 Walkinstown Road, Dublin 12.  
 Tel: 01 - 452 2355 Fax: 01 - 451 6919  
 email: [info@manotherm.ie](mailto:info@manotherm.ie)  
 web: [www.manotherm.ie](http://www.manotherm.ie)

# Industrial Communications

## 1 Day Seminar

**Endress+Hauser** **Wireless HART**  
 People for Process Automation **one company • a world of innovation**

**PROCENTEC** **PHOENIX CONTACT** **STAHL** **ELMAR**  
**PEPPERL+FUCHS** **INSPIRING INNOVATIONS**

Start the New Year by attending a practically focused seminar with hands on sessions on Industrial Communications. The seminar will provide a series of technical presentations from a variety of vendor companies. In parallel to the seminar a series of integrated demonstrations will show case some of the technology areas covered in the presentations. These include PROFINET, PROFIBUS DP, HART on PROFIBUS, PROFIBUS PA, PROFIBUS diagnostics with ProfiTrace 2, Wireless HART, OPC, SCADA and many other related areas. Participants will have the opportunity to get hands on experience with all the demos before the start of the presentation, during lunch break, and after presentations.

Hands on sessions provide a one-2-one opportunity to ask questions without fear, and ensures time is spent productively. This is an excellent opportunity to learn and network with other automation professionals in Ireland.

To register visit [www.profibus.ie](http://www.profibus.ie) or email [info@profibus.ie](mailto:info@profibus.ie) or call 061 202544. Places are limited so early booking is advised to avoid disappointment. Register before January 10<sup>th</sup> to receive €20 discount. Limited free places available for Unemployed and students. Please ask for details.

**Schedule**

- 08:30-09:30 Hands on for early arrivals (optional)
- 09:00-09:30 Registration
- 09:30-09:40 RPA Ireland, Introduction
- 09:40-10:00 PI Germany - Present and Future
- 10:00-10:20 ELMAR - HART over PROFIBUS
- 10:20-10:40 Endress+Hauser - Wireless HART
- 10:40-11:00 PROCENTEC - Diagnosing PROFIBUS
- 11:00-11:30 Coffee Break
- 11:30-11:50 Phoenix Contact - Industrial Wireless
- 11:50-12:10 MOLEX - PROFINET
- 12:10-12:30 Pepperl & Fuchs- PROFIBUS PA
- 12:30-12:45 Questions and Wrap-Up
- 12:45-13:45 Buffet Lunch and Hands-On
- 13:45-17:30 Plant Tour - Bulmers (optional)

## Read-out

**Price €70**  
 (To include lunch and refreshments. First 50 participants receive Free PROFINET Book valued at Euro 48)

**09:00 to 17:30 hrs**  
**Wed January 20<sup>th</sup>**  
**University of Limerick**

[www.profibus.ie](http://www.profibus.ie) for details, Registration & updates

Products from page 8

**SIL evaluated Pressure**

WIKA has reacted immediately to the new safety standards within the process and machine-building industries: The Model IS-2X intrinsically safe pressure transmitter is now available with SIL 2 classification.

In order to enable the use of the IS-2X in SIL applications the most important safety-relevant data have been determined and summarised in an additional data sheet for safety-related data. These include the Average Probability of Failure on Demand (PFDA), the Hardware Fault Tolerance (HFT) and the Safe Failure Fraction (SFF). Process industry customers need this information for a SIL evaluation of the complete scope of application. For the requirements of machine building, MTTFD (Mean Time To Dangerous Failure) values are provided in order to be able to determine the Performance Level (PL).

The versatile pressure transmitters of the IS-2X family have been used for many years in the widest range of hazardous areas. Due to its approvals (ATEX, FM and CSA) the intrinsically safe instrument can be used worldwide.

[www.itl.ie](http://www.itl.ie)

### Diaphragm and Peristaltic Pump Liquid Chemical Feed Systems

Blue-White has developed a versatile, lightweight skid system which can be ordered with either FLEX-PRO®

Peristaltic Metering Pumps, or CHEM-PRO® diaphragm metering pumps.

Features of the CHEM-FEED® Skid Systems include: Self-filling calibration cylinder (flooded suction not required); Exclusive flow indicator that visually indicates the pump is delivering solution; Versatile, single and dual pump systems available; Fits any ProSeries® metering pump - diaphragm or peristaltic; Easy access to wiring components from the rear of the system; Drip containment trays that are removable for easy cleaning; Dual side inlets enable connection of multiple skids to the same inlet; Stainless Steel mounting pads; Check valve that protects the operator from back flow during routine maintenance; Efficient, small footprint design; Heavy duty, chemical resistant powder coated 6061-T6 aluminum, welded joint construction; Lightweight, can be shipped via UPS. No forklift required.

[www.blwhite.com](http://www.blwhite.com)

### Rugged pressure transducers

Endevco has announced the debut of the 8511A series, a family of high sensitivity, rugged piezoresistive gage pressure transducers, expressly designed for maximum reliability in extreme measurement environments.

Available in ranges of 5,000; 10,000; and 20,000 psig, with a 3/8 mounting thread, Endevco® 8511A series pressure sensors feature a four-arm piezoresistive strain gage bridge, diffused into a sculpted silicon diaphragm, for maximum sensitivity and wideband frequency response. The transducers also feature self-contained full hybrid temperature compensation, providing stable performance over a wide temperature range of 0°F to +200°F (-18°C to +93°C). In addition, these

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rugged transducers are designed to survive 20,000g shock and minimum 2X burst pressure.

The Endevco® 8511A series also offers excellent linearity, high shock resistance, and high stability during thermal transients, making them ideal for use in studies of structural loading by shock waves resulting from explosive blasts; hydraulic or combustion system pulsation measurements; and automotive airbag testing. For harsh environments where particle impingement is a concern, an optional protective screen and black silicone grease coating is available. This further reduces photoflash sensitivity and provides an effective thermal barrier for short duration high temperature service.

Recommended accessories for use with the Endevco® 8511A series include model 136 three-channel system, model 4430A signal conditioner, or model 4990A (Oasis), as signal conditioner and power supply.

[www.endevco.com](http://www.endevco.com)

### Controller firmware update



GE Intelligent Platforms, now marketed here by **PJ Boner & Co.**, today announced the release of its latest VersaMax® Micro Plus controller firmware revision 4.0. The new release expands the controller's applicability to an even wider range of applications by integrating some exciting new features.

*"With this release GE Fanuc has enabled the VersaMax Micro Plus to improve productivity, substantially expand communications connectivity, add high precision temperature sensing and increase the amount of*

*devices that can be controlled with a low end controller,"* said **Bill Black**, Controllers Product Manager for GE Intelligent Platforms. *"The VersaMax Micro is a surprisingly powerful PLC for its size and price, and the new features add more functionality, keeping it at the forefront of its class of controllers."*

The new OnLine Programming feature enables the user to edit and download logic to the PLC without stopping it. Not requiring a PLC to come off line for changes saves significant downtime and potential expense for lost productivity and scrap. The OnLine programming streamlines debugging during machine commissioning and is ideal for applications that are continuous process.

The unit has been enhanced to support Ethernet Modbus TCP Client and Server protocol. This powerful communication addition enables the Micro to handle a wide range of applications that historically required a more sophisticated control platform. A simple function block enables the Modbus TCP communications commands to be easily integrated into the users logic. Up to eight Modbus TCP channels are supported with one channel configured for Modbus TCP Client and the remaining are used for Modbus TCP servers.

*"The Modbus TCP connectivity enables the Micro Plus controllers to address many complex applications that require the integration of variable frequency drives, motor control centres, SCADA and other Ethernet devices. In addition, security settings have also been added to minimise hacking into the controller,"* continued Black.

The new VersaMax Micro 4.0 firmware release also supports High Accuracy Thermo-



**Products** from page 10 couple/Millivolt and RTD input Modules. The Thermocouple and RTD expansion units can now support the High Accuracy mode with 16-bit resolution. This provides higher precision in temperature monitoring and strain gauge applications. Additionally, there are four new 64-point expansion modules that are compatible with the new Micro Plus controller, so the Micro Plus can support up to 320 I/O points. The high-density expansion modules enable the Micro Plus to be very cost effective for low-end applications.

[www.pjboner.com](http://www.pjboner.com)

**Dynamic Rack Control**



In large data centres most of the inventory is recorded using a spread sheet, a manual process which is subject to human error and also time consuming. **Rittal's** Dynamic Rack Control uses a special 482.6mm (19") rail that incorporates a RFID reader (aerial), mounted within the rack that allows you to not only manage and update the inventory very easily but to also determine capacity issues and manage maintenance schedules.

Identification Device) is a globally standardised technology for the contactless detection of objects in the room. A RFID system is always comprised of 2 components: a reader with an aerial (RFID mounting frame with reader), and a small microchip with an aerial coil on a substrate material (RFID tag).

Rittal use this technology directly inside the rack to log component population completely without contact and in real time. In this way, a current overview of the components installed in the racks, separated according to device category, power consumption or form factor, is possible at any time

Each RFID tag is unique and has its own ID number. An RFID tag can be attached to anything, i.e. patch panel, server, switch etc. When a tag is attached to a piece of equipment, part of the registration procedure is that the installer has to identify the equipment to the receiver. This information includes the physical dimensions, the weight of the equipment, power draw and also the maintenance details.

Data that is associated with the tag helps the IT manager to not only maintain inventory but also "balance" demand by moving equipment around and determining optimum rack load rating in both power and cooling.

With IT resources being further stretched under the current economic challenges, having any solution that saves basic data centre administration and management is essential.

[www.rittal.ie](http://www.rittal.ie)

**New EMI solution**

**Wonderware Ireland** has announced Wonderware® Intelligence Software 1.0 solution. This new, easy-to-use enterprise manufacturing intelligence (EMI) solution enables customers to contextualise, aggregate and report both historian and operational data using role-based dashboards, presenting key performance indicators (KPIs) and real-time operational business metrics that are used to monitor, tune and optimise operations and supply chains.

Wonderware Intelligence software transforms data and information from multiple sources into business intelligence by aggregating process and production data in real time and adding contextual elements, such as equipment, product, work orders, material and personnel. This information context enables end users to gain insights into the root causes of problems and understand how production events are related — another unique benefit.

The formatted information is saved and optimised for fast reporting and analysis, allowing end users to create and publish dashboards using the

Wonderware Intelligence Analytics Client into a wide variety of web portals. Users can also configure customised metrics without programming. Additionally, the solution:

- Acquires data not only from the Wonderware family of products, including MES, InBatch™ and Historian, but also from external systems such as ERP, LIMS, PDM or even other execution systems and historians, to provide plant, multi-plant and corporate-wide views of operations and performance.
  - Utilises best-in-class tools for rapidly creating and publishing dashboards that can be rendered in commonly used web platforms such as Microsoft SharePoint®, mySAP Enterprise Portal and Wonderware Information Server.
  - Furthers investments in the core Wonderware products, leveraging System Platform's Integrated Development Environment and services for configuration and deployment of the data model and allowing customers to incrementally add MES and EMI features and functionality easily and non-invasively.
  - Is a cross-functional product, applicable to any industry or market segment
- "This is a true EMI solution that allows customers to build once, deploy at multiple sites and enjoy corporate-wide visibility of their plant's KPIs, even with disparate data

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Products from page 11

sources. Dashboards can easily be created with drag-and-drop ease, enabling self-service access to information," said Maryanne Steidinger, director of product marketing, Invensys Operations Management.

[www.wonderware.ie](http://www.wonderware.ie)

## Hardware in the loop



**National Instruments** has announced the expansion of its hardware-in-the-loop (HIL) simulation platform, which includes numerous products that optimise embedded system validation. During the past six months alone, NI has released nearly 40 new products targeted at delivering flexible HIL solutions to embedded control system developers within a variety of industries. The portfolio of NI HIL simulation tools helps engineers maintain reliability and time-to-market requirements while reducing costs, even as their products become more complex.

"We continually hear that engineers are struggling with traditional test systems to meet increasing product complexity and performance requirements within tight budgets and timelines," said **Mike Santori**, Business and Technology Fellow at National Instruments. "These engineers need an HIL simulation

platform that is highly productive out of the box but also open and flexible to adapt to fast-changing testing demands. The NI HIL simulation platform provides unprecedented openness and performance for HIL applications. The platform's highly flexible architecture helps engineers address a wide range of applications, from those in automotive and aerospace to new fields such as alternative energy and medical device development."

Recent product releases include VeriStand software for real-time testing and simulation; the TestStand 4.2 automated test management environment including support for Python scripts; a new family of fault insertion units; NI-XNET high-performance CAN and FlexRay bus interfaces optimised for HIL applications; ARINC 429, MIL-STD-1553 and AFDX (ARINC 663) military and aerospace avionics bus interfaces; low-cost and high-performance real-time processor cards; and several other I/O interfaces. To ensure that applications can easily scale and meet evolving requirements, the HIL simulation platform supports third-party hardware interfaces and integrates with C, C++, .NET and Python programming languages. In addition to integrating seamlessly with the NI LabVIEW graphical system design environment, the platform works with a variety of modelling environments

such as The MathWorks, Inc. Simulink® software; ITI SimulationX; Maplesoft MapleSim; and Gamma Technologies GT-POWER.

Engineers can increase their system performance and flexibility while reducing overall costs by taking advantage of the open PXI hardware standard, advanced multicore technology and graphically programmed FPGA interfaces. Additionally, the platform's software-defined instrumentation approach makes it possible for HIL applications created with NI products to scale from low-cost desktop validation systems to multiprocessor distributed simulators, a benefit that provides engineers a flexible and cost-effective toolset for all HIL testing applications.

The platform delivers commercial off-the-shelf (COTS) solutions that offer alternatives to complex proprietary configurations and bulky, inefficient traditional simulation systems. In today's challenging economic climate, NI HIL simulation products are ideal for making projects more efficient and cost-effective for design engineers in multiple industries, from aerospace, alternative energy, automotive and consumer electronics to government, industrial transportation, mechatronics, medical technology and semiconductor manufacturing.

[www.ni.com](http://www.ni.com)

## Split-Range Control



**George Buckbee, P.E.** is a process control industry veteran, and president of PIDTutor. He holds a B.S. and M.S. in Chemical Engineering and has dedicated his entire career to process control, spending decades in hands-on engineering assignments. He has written dozens of articles, and a full-length text "Automation Applications in Biopharmaceuticals" (ISA ISBN 978-1-934394-25-0). He is widely known for his practical approach to process control. George started PIDTutor to help solve common problems in the process industries. In addition to books, PIDTutor offers training, consulting, and project management services. PIDTutor has released a new book covering all aspects of split-range control. The book is designed to help technicians and engineers to implement and troubleshoot split-range control applications.

Split-range control uses a single controller with two control valves to maintain a single process variable. It can be used for a variety of applications, such as heating and cooling of a tank or a room. Split-range control is widely used in the process industries, such as pulp and paper, oil and petrochemicals, and mining.

George Buckbee says: "I wrote this book because split-range control is widely used, but is

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often misunderstood. With split-range control, the devil is in the details. These details and many 'tricks of the trade' are included in the book."

The book covers all aspects of the use of split-range control. Starting with the basics, the book discusses when to use split-range and when not to, costs and benefits, how to configure the control strategy, how to calibrate the valves, how to tune the loops, and even how to train operators and troubleshoot problems.

[www.PIDTutor.com](http://www.PIDTutor.com)

**Newsletter**

PROFIBUS UK has launched a regular e-mailed newsletter for engineers and users of fieldbus networks. Bringing details of planned training sessions and seminars, and news of technical and product developments from suppliers, the newsletter also suggests links to useful technical support centres and advice. PROFIBUS and PROFINET systems are now found in most modern factory and process automation systems, and have become the standard fieldbus system used in water and wastewater treatment plant modernisation and expansion schemes. Engineers and managers working with such schemes will find the newsletter invaluable in providing background and links to similar users, and to the supply of competent services to assist with the development and optimisation of such networks. It also will keep engineers working with PROFIBUS systems up to date with the on-site training and the professional certification opportunities available within the industry. PROFIBUS can easily communicate with most DCS or PLC systems, conveyors, motor controllers and labelling systems, as well as other specialised fieldbus systems, such as ASi-bus, Ethernet, HART, Modbus and DeviceNet. PROFIBUS User

Group meetings provide a forum for discussion of the experience of members in creating and developing the capabilities of automation networks, and the newsletter provides the interface to enable this exchange of knowledge.

[www.profi-bus.co.uk](http://www.profi-bus.co.uk)

**Managing professionals**



Practical Project Management - Learning to Manage the Professional, by last years ISA President, **Gerald W Cockrell**, will sharpen your project management skills by focusing on techniques that are proven to be effective in today's quick-paced, budget-sensitive environment. If you're a project manager in the instrumentation and automation fields, you know the pressures to perform faster, better, and cheaper. Yet, if you're like most technical professionals, you've had little or no training in project management.

Starting with an overview of what every project manager needs to know, this authoritative book defines each unique phase of a project and then provides practical knowledge in areas such as budget and cost estimates, contracts, negotiating, team building, scheduling, and choosing project management software. It even devotes special attention to often-neglected, but important project completion and closeout activities, including tips for how to write and make the

most of final project reports.

[www.isa.org/projectmanage](http://www.isa.org/projectmanage)

**Support for loggers & recorders**

Dickson now has a web publication of online support guides—both in downloadable PDF formats and as videos on YouTube and their web site --- to help its many thousands of worldwide customers to easily monitor temperature, humidity, pressure and other electronic signal "events" important to critical storage.

These support guides cover information such as:

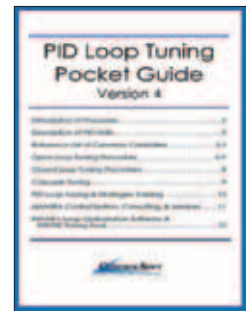
- Product Applications and Useful Features
- Product Specifications
- Getting Started
- DicksonWare Software Specifications
- Product Accessories
- Frequently Asked Questions
- Calibrations
- Troubleshooting
- Warranty / Factory Service & Returns

Dickson (which offers the world's widest selection of data loggers and chart recorders to

monitor temperature, humidity, pressure, or electronic signals) created this service to help organizations with needs to capture critical data get up and running with the least delay throughout the lifetime of the Dickson product.

These video or print support guides can be accessed via the "SUPPORT" tab on each product page at [www.dicksondata.com](http://www.dicksondata.com)

**Tuning guide!**



ControlSoft's internationally acclaimed PID Loop Tuning Pocket Guide was created in 2002, and is now available in its 4th edition.

Providing engineers with a free and concise guide to tuning PID loops, this handy publication now includes tuning instructions for cascade

**ProSeries**  
INNOVATION | FUNCTIONALITY



**SONIC-PRO**  
Ultrasonic Flowmeter

This True Hybrid Flowmeter meets the demands of tough applications with quality engineering, design and components.

**SONIC-PRO® Features Include:**

- Non-invasive clamp-on sensors for accurate fluid measurement without fluid contact.
- It's Portable, so it can be used for checking flows in multiple locations, or dedicated to one application.
- Factory configured for ease of installation. Five, user programmable, password protected configurations for multiple users and portable applications.
- Data is logged to an SD card format.

**Now Shipping in a Tough Hard-Sided Case**

The Sonic-Pro® Package includes: Specially Designed Case; the Flowmeter; a CD with instructional manuals; all necessary pipe sensors and enclosure mounting hardware; two sets of pipe sensor acoustic mounting gaskets, one for temporary installations and one for permanent installations. The case measures 482.6 mm wide, 203.2 mm high, and 355.6 mm deep. The approximate weight, including the flowmeter is 9.6 kg.

**Blue-White**

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loops and an expanded reference section on common controllers. The 12-page guide can easily fit into a jacket or jeans pocket for handy on-the-job access. A free copy of the latest version may be requested from their website!

[www.controlsoftinc.com](http://www.controlsoftinc.com)

**EVENTS**

Industrial Communications Seminar organised by ProfiBus Ireland  
20/1/2010 Limerick

Understanding the new machine directive 2006/42/EG  
Festo training  
20/1/2010 Dublin

FM Ireland  
Facilities Management  
23-24/3/2010 Dublin

Advanced Manufacturing Exhibitions includes mtec  
30-31/03/2010  
Birmingham (GB)

[read-out.net/signpost/expo.html](http://read-out.net/signpost/expo.html)

**Big changes at ABB**

ABB is reorganising its automation divisions to align their activities more closely with those of its customers. These changes will enable ABB to better tap growth opportunities in service, expand its presence in the discrete manufacturing sector and better respond to the increasing demand for energy efficient solutions.

The business units formerly in the Automation Products and Robotics divisions are regrouped into two new divisions – Discrete Automation and Motion, and Low Voltage Products. The Process Automation division will remain unchanged except for the addition of the instrumentation business from the Automation Products division.

“ABB’s automation businesses with their focus on productivity

and energy efficiency have tremendous scope for growth,” said **Joe Hogan**, ABB’s chief executive officer. “We have strengthened the market approach by grouping together businesses with similar customers, technologies and service models, which will help us accelerate the development of solutions for our customers.”

The new divisions are as follows:

The new Low Voltage Products division includes businesses producing mainly low-voltage electrical equipment that is sold to wholesalers, original equipment manufacturers as well as system integrators, and has moderate service requirements. The division had 2008 pro-forma revenue of \$4.8 billion and about 19,000 employees.

The new Discrete Automation and Motion division includes products and systems targeted at discrete manufacturing applications, such as robotics and programmable logic controllers (PLCs), and providing motion in plants, such as motors and drives. These businesses help customers to increase the productivity and energy efficiency of their assets. It also includes a significant offering for the renewable sectors of solar and wind, as well as the rail segment. The businesses sell mainly to original equipment manufacturers, system integrators and directly to end users, and require a more intensive, tailored level of service. The division had 2008 pro-forma revenue of \$6.6 billion and also about 19,000 employees.

Process Automation will remain unchanged except for the addition of ABB’s instrumentation business, currently part of the Automation Products division. The move will strengthen the division’s process automation

platform as instruments measuring temperature, flow, pressure, etc. are key to optimising industrial processes. The division had 2008 pro-forma revenue of \$8.4 billion and about 29,500 employees. The reorganisation of the automation businesses has been accompanied by several related leadership changes.

**Tom Sjökvist**, formerly responsible for Automation Products, is the head of the new Low Voltage Products division. Sjökvist has provided successful leadership for the low-voltage business for many years and has driven the Automation Products division to new levels of profitability.

**Ulrich Spiesshofer**, who was responsible for Corporate Development on the Executive Committee, has been appointed to run the Discrete Automation and Motion division. Spiesshofer, who joined ABB in 2005, has led ABB’s strategic growth initiatives such as its service activities, and has played a key role in managing the company’s global footprint optimisation efforts and its \$2-billion cost take-out program

**Anders Jonsson**, formerly responsible for the Robotics division, has an Executive Committee role with responsibility for continuing the implementation of ABB’s current cost take-out program as well as the company’s Global Footprint program, which aligns ABB’s resources with the company’s growth opportunities. Jonsson has successfully repositioned the robotics business for long-term profitable growth.

**Veli-Matti Reinikkala** remains head of the Process Automation division.

[www.abb.com](http://www.abb.com)

**Unconquered complexity!**



*“Arguably the best entertainment at the Rijswijk press event, even after the Hesketh-Schleiss double act, was to be had by simply observing the cream of the European engineering press corps working out how to use the Yoropen ZII ballpoint pen presented to each newshound as a memento of the event. One colleague, who had better remain nameless, failed to heed the stern warning to “Please Read This Manual First Before Using” and took a full two minutes simply to work out how to remove the cap. Not only did the manual include two easy to follow diagrams showing how to complete that task and one how not to, but a further four showed how to hold the pen and yet another four how to change the refill. With ‘Conquering Complexity’ the theme of the presentation, who says American companies don’t do irony?”*

Andrew Bond, Industrial Automation Insider

[www.iainsider.co.uk](http://www.iainsider.co.uk)





**Peter Keane** of **Instrument Technology** gave a technical talk on Humidity Measurement in late November at Carlow Institute of Technology. Group picture above includes Peter Keane to right of President-Elect **Dave O'Brien** and **Tommy Walker** and **Jim Doyle** both of Carlow IT and the students.

**Peadar Walsh** of **Douglas Calibration (Jones Group)**, and former President of ISA Ireland, made a presentation in December to students of FÁS at their Bishopstown, Cork facility which was followed by a tour around their instrument labs. Picture above right shows the entire attendance with, extreme right, **Patrick McCarthy (FÁS)**, **Dave O'Brien**, President-Elect ISA Ireland (wearing chain) and **Peadar Walsh**, extreme left.

[www.isa.ie](http://www.isa.ie)



**Bob Sharp** has recently been appointed President, Emerson Process Management Europe and is responsible for leading all of the European sales and marketing activities for the company. He has worked for



Emerson for 13 years.

Previously Bob was the President of Emerson's Rosemount Level and Marine division, and was responsible for integrating three recent Emerson acquisitions into a single global Level & Marine division that serves the Marine Tank Management, Process Level and Tank Gauging markets.

Bob has also been the Vice President of Rosemount's Global Temperature business, and before that Vice President Global Marketing for Rosemount. He also spent several years at Emerson Corporate within strategic planning roles, and as the Director of Investor Relations. In his past roles, Bob has been responsible for operating and sales units in a number of countries across Europe, including Sweden, Denmark, the UK, Germany, Finland, Russia and The Netherlands.

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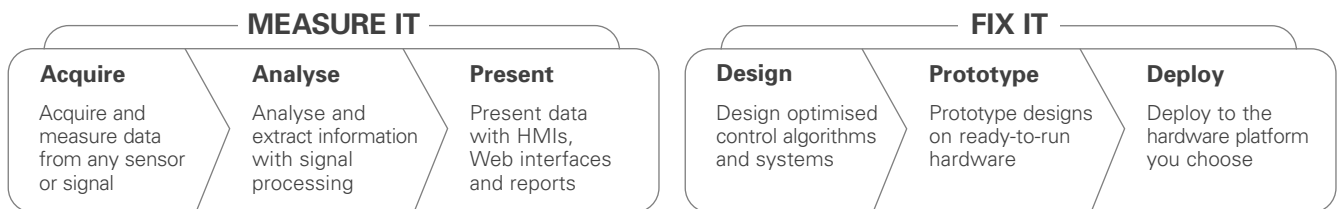
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