Discover the power of collaboration

Network with 1,000’s of your peers and technology experts
April 29-May 1, 2008 – Houston, Texas

ABB’s Automation World 2008 Conference and Exhibition is designed by people like you. Learn about the latest technology and future trends that will help you stay competitive by increasing productivity, safety and energy efficiency while reducing environmental impact. Plus find out how to get more from your existing investment.

Register online: www.abb.com/automationworld

Industry Specific Workshops:
- Cement
- Chemical
- Consumer
- Food & Beverage
- Industrial Steam
- Life Sciences
- Metals & Mining
- Oil & Gas
- Power Generation
- Pulp & Paper
- Water & Wastewater
- Much, much more!

Power and productivity for a better world™
President’s Letter
Fieldbus Foundation: A Year of Achievements

As I look back on the previous year, and take inventory of the Fieldbus Foundation’s activities, I am proud to report many significant achievements. Thanks to the dedication of our members, supporters and staff, we reached a number of important milestones, including new technology developments and growing industry adoption of the open, integrated Foundation™ automation infrastructure.

According to a recent survey by the ARC Advisory Group (Dedham, Massachusetts), tens of thousands of Foundation-compliant control systems, and over a million field devices, are now in service around the world. ARC indicated Foundation fieldbus is now “mainstream,” holding a 68 percent market share in the process industries, and predicted a continued double-digit growth rate for the technology. As I speak to you, the largest gas field project in Europe is under construction and is based on Foundation technology. The world’s largest refinery, under construction in India, also employs Foundation technology.

At our recent 2008 General Assembly, themed “Why Foundation Has Become The Standard,” experts from throughout the global automation industry cited many key fieldbus technology initiatives benefiting the automation industry. For example, the Foundation for Safety Instrumented Functions (SIF) development, which has achieved TÜV Type Approval, will help meet the growing worldwide demand for commercial, standards-based safety instrumentation incorporating Foundation fieldbus.

The Fieldbus Foundation has joined the HART Communication Foundation and Profibus Nutzerorganisation e.V. (PNO) in a cooperative effort that will develop a specification for a common interface to a wireless gateway. The intent of this collaboration is to facilitate full, scalable integration of both wired and wireless technology in industrial automation.

The Foundation accelerated its work defining the structure for interfacing remote I/O over its High Speed Ethernet (HSE) control backbone. The addition of remote I/O further tightens the integration of process instrumentation within the Foundation system solution.

We also announced the availability of new temperature transducer block and H1 cable test specifications. These specifications include features enabling automation equipment suppliers to further improve the interoperability and reliability of their registered Foundation fieldbus products.

The Fieldbus Foundation’s board of directors has mandated rigorous host testing, which will strengthen fieldbus interoperability and system integration. Under the new host registration program, hosts successfully completing the test requirements will be authorized to bear the official Foundation product registration symbol.

Additionally, a new Fieldbus Foundation End User Council (EUC) was launched in India to support the huge demand for fieldbus-based systems. An inaugural Foundation fieldbus seminar held in Mumbai, India, attracted over 300 automation end users. Our organization also established marketing committees in India, Brazil, Mexico, Norway, Commonwealth of Independent States and Baltics (CIS&B), Sweden and South Africa. These groups are made up of representatives of leading process automation companies in the regions.

As we enter 2008, it’s clear that many important tasks lie ahead for suppliers and end users of Foundation technology. Let’s keep up the hard work!

Thank you for your continued support.

Richard J. Timoney
President & CEO
Fieldbus Foundation
Buy a FOUNDATION fieldbus system with proprietary snap-on device diagnostics and get a free matching bracelet.

Break free. Push performance without constraints. Get open, advanced diagnostics with FDT plug-ins. Plus basic and enhanced DD.

There are those who promise advanced diagnostics for their fieldbus systems. Problem is, you have to use their devices—and only their devices to get any benefit. Well forget it. Push performance past the usual threshold with the I/A Series® system. This Foxboro system offers the first and only management application that combines the open, advanced diagnostics of FDT technology with commissioning via today’s Device Descriptors. Plus the simple diagnostics offered by enhanced DD that device vendors will bring to market. Providing truly open, advanced diagnostics for any device, from any vendor.

Combined with ease of engineering and maintenance, plus the industry’s best fault tolerance—you get the most advanced, open solution available.

More importantly, you get a control system with FF that delivers real lifetime economic benefits. More performance. More uptime. Less cost. There’s a reason Foxboro FDT technology is the leader. It’s called Know-How.

To learn more visit ips.invensys.com
Features

2008 General Assembly Reflects Global Fieldbus Growth 6
Automation industry leaders gather to review latest technology developments

Serbia Gas: FOUNDATION Fieldbus Enables System Integration 10
Major plant expansion project harnesses the power of High Speed Ethernet

FOUNDATION™ SIF: Fieldbus Benefits in Plant Safety Systems 15
Interview with the Fieldbus Foundation’s technology director, Dave Glanzer

End Users Complete Review of HSE Remote I/O Use Cases 19
Economic benefits realized by incorporating remote I/O in fieldbus systems

NAMUR Collaboration Results in Fieldbus Diagnostic Profiles 22
New specification builds upon robust Foundation diagnostic features

Registered Product Update 25
Industry benefits from greater selection of tested, interoperable devices

Fieldbus Foundation Launches Host Registration Program 27
Rigorous testing provides extra measure of confidence for end users

Fieldbus End User Seminar Program Expanded 30
Foundation technology training offered in diverse locations worldwide

World’s Largest Alumina Refinery Adopts Fieldbus Solution 31
Alunorte facility optimizes operations with digital automation systems

Regional Roundup: Latin America 32
Foundation technology gains acceptance in fast-growing industrial region

FIELDBUS APPLICATION GUIDES AVAILABLE

The Fieldbus Foundation offers a selection of comprehensive Application Guides that can help end users get on the “Fast Track to Fieldbus.” These documents provide valuable information regarding fieldbus installation procedures, wiring guidelines, network isolation techniques, and more.

To download the Application Guides, visit: www.fieldbus.org/About/FoundationTech/Resources
2008 General Assembly Reflects Global Fieldbus Growth

Automation industry leaders gather to review latest technology developments

Regardless of whether attendees were end users implementing a FOUNDATION fieldbus control architecture, EPCs looking for information about the technology, or suppliers seeking to expand their product market, the Fieldbus Foundation’s 2008 General Assembly was a “can’t miss” event for the global automation industry.

This year’s Fieldbus Foundation General Assembly was held in Antwerp, Belgium, on February 27-29, at the Antwerp Hilton Hotel. Open to foundation members and non-members, the event attracted a record attendance of FOUNDATION technology suppliers, end users, and industry participants from around the world.

The 2008 General Assembly theme, “Why FOUNDATION Has Become The Standard,” reflected the growth of FOUNDATION fieldbus as the global “technology-of-choice” for process automation. FOUNDATION technology now holds a major share of the European chemical, pharmaceutical, and oil & gas markets, as well as many other process industries.

The Fieldbus Foundation’s annual meeting opened on Wednesday, February 27, with an overview of current fieldbus developments across the globe. The foundation also conducted a press briefing, during which its achievements on both a global and EMEA basis were reviewed, together with an update on current technology initiatives.

The General Assembly program was highlighted by end user presentations on process integrity, open scalable integration, and business intelligence. Supporting demonstrations and Q&A sessions allowed attendees to share experiences and technology insights.


The General Assembly keynote address, delivered by Dr. Norbert Kuschnerus, president of the NAMUR Board of Management and senior vice president, Bayer Technology Services GmbH, Leverkusen, Germany, highlighted the opening day’s welcome reception. Dr. Kuschnerus discussed how leading companies like Bayer are using enabling technology to continuously improve plant operations. He described experiences, requirements and expectations of fieldbus technology from an end user perspective. Reflecting upon the last 10 years in the development of fieldbus and its application, he illustrated the dynamic process whereby user requirements have been reconsidered over the decade and how new expectations have emerged.

Dr. Kuschnerus concluded that while fieldbus technology is already usable and reliable, further developments of its functionality will ensure that its full potential will be reached.

The Fieldbus Foundation conducted its annual business meeting for members on Friday, February 29. During this time, end user workshops on topics such as fieldbus engineering, implementation, and maintenance were available to attendees at ACTA (Antwerp Center for Applied Automation), a local academic institution.

A technology showcase was also presented throughout the General Assembly, with major control system and instrumentation suppliers displaying the latest FOUNDATION fieldbus products, solutions, and services.

The 2008 General Assembly, held at the Antwerp Hilton Hotel in Antwerp, Belgium, brought together leading experts in fieldbus control strategies, and offered a wealth of information for individuals who must understand the technology in their work environment.
2008 General Assembly News

ABB Presents Asset Master Software Tool

At the 2008 General Assembly, ABB presented its Asset Master device management software tool. Asset Master is designed to improve asset performance, duration of operation, and uptime. It provides set-up tools for configuration and calibration of FOUNDATION fieldbus, HART and Profinet capable devices. The tool identifies abnormalities quickly, notifies personnel, and directs fault reports to a CMMS to initiate work orders.

Beamex® Unveils New Fieldbus Calibrator

The Beamex® MC5 Fieldbus Calibrator is a combination of a multifunction calibrator and a fieldbus configurator. The fieldbus functionality of the MC5 includes reading the digital output of the fieldbus transmitter, changing the configurations of transmitters, and transmitter trimming. Calibrating fieldbus transmitters with the MC5 requires only one person and the calibration results are automatically documented.

Emerson Demonstrates Predictive Maintenance Management

Emerson Process Management demonstrated how FOUNDATION fieldbus enables predictive maintenance management and improves operations. With this technology, each intelligent device in the automation architecture becomes a “data server,” continuously reporting the health of, or anticipated problems with, a plant’s assets. This predictive data allows plant maintenance to be done more efficiently and minimizes costly downtime.

Continued on page 8
Emerson Displays Field Communicator

Emerson Process Management also displayed the 375 Field Communicator Version 2 for troubleshooting of physical layer problems on FOUNDATION fieldbus segments. These powerful new fieldbus diagnostics provide the ability to display the fieldbus signal level for all devices on a segment. A handy MODE button has been added to many of the fieldbus displays to simplify mode changes when changing a block’s parameter. The ability to instantiate FOUNDATION fieldbus Function Blocks has also been added in Version 2.

Endress+Hauser Displays ControlCare and FieldCare Solutions

Endress+Hauser’s Francois Ichtertz and Eric Jacquemin presented the ControlCare SFC162 Field Controller together with the associated system hardware and devices. In addition to demonstrating control strategy configuration with the ControlCare Application Designer, they also showed FOUNDATION fieldbus DTM’s in action using Endress+Hauser’s FieldCare plant asset management tool.

MooreHawke Showcases TRUNKSAFE Fault-Tolerant Fieldbus System

MooreHawke (a division of Moore Industries-International, Inc.) displayed the TRUNKSAFE™ Fault-Tolerant Fieldbus System. TRUNKSAFE provides a cost-effective, yet highly reliable, strategy to maintain FOUNDATION fieldbus communications between the DCS and field devices without interruption in the event of any single point failure (such as an open-circuit or short-circuit).

Delivering a complete fault-tolerant fieldbus physical layer, TRUNKSAFE is comprised of two redundant fieldbus DC power conditioners and a specially-engineered device coupler that, in combination, provide a secure fieldbus physical layer.

Pepperl+Fuchs Presents FieldConnex® Capabilities

Pepperl+Fuchs displayed its FieldConnex® solution, which helps end users make a reliable connection between the DCS and field instrumentation. The compact R2 FieldConnex element protectors provide a single location for the fieldbus terminator, allowing segments to be expanded without disturbing the trunk or having to shut down the entire system. This inherently prevents over-termination that can cause start-up and commission problems. The segment protectors are designed to eliminate errors that can occur while connecting test leads for system diagnostics work.

Pepperl+Fuchs also showed the FieldConnex Ethernet isolators, enabling users, for the first time ever, to connect high-speed data devices located in hazardous area applications directly to a standard Ethernet line. They also allow for back-to-back “pass through” applications — all without requiring any separate hardware.

Continued on page 17
Reliability + Maintainability = Availability

The Yokogawa FieldMate Versatile Device Management System is a new PC-based integrated software tool that handles parameter setting for intelligent field devices, regardless of their make or field communication protocol. FieldMate speeds up device configuration and problem solving, and automatically stores a work log for a traceable field maintenance database that consolidates the maintenance work flow and facilitates the sharing of maintenance know-how.

“Your clear path to Asset Excellence”

For more information and free trial software, visit promo.us.yokogawa.com and enter key code AD7716.
Serbia Gas: FOUNDATION Fieldbus Enables System Integration

Major plant expansion project harnesses the power of High Speed Ethernet

Serbia Gas is responsible for production, transportation, distribution and storage for Serbia’s natural gas system. As the Serbian state energy company, it seeks to utilize the most advanced process control equipment. When developing strategies to meet customer demand in its region, Serbia Gas determined that one technology — FOUNDATION fieldbus — provided a fully integrated automation solution for its expanding natural gas operations.

Serbia Gas, through its engineering firm WIG, has had experience working with Foundation fieldbus since 2001, so the technology was a natural choice for its Banatski Dvor facility.
Background

Today, end users want to remove the constraints of closed, proprietary control systems and free up their plant’s profit potential. They’re seeking an open automation infrastructure that integrates installed assets and co-exists with legacy systems — all while protecting valuable investments.

Fieldbus technology is now replacing the traditional 4–20 mA platform, and even more recent developments such as the HART Communications Protocol, as the basis for a modern plant automation architecture. A bidirectional, fully digital communication system, fieldbus supports increased intelligence in field devices and enables tighter control of the process.

Fieldbus communications makes it possible to “mine” important information from the plant floor. Delivering information to the right person, at the right time, empowers operators, technicians and process engineers — making plant operation easier, faster and better. Fieldbus also unifies today’s smart instrumentation and analytical highway to provide all-digital access to operational parameters and data at the point of measurement.

Expansion helps meet growing demand

To keep pace with its developing natural gas infrastructure, Serbia Gas undertook construction of an expanded underground gas storage facility. Located in Banatski Dvor in northern Serbia, the facility is used for gas injection, extraction and production. Gas is injected into a bearing enclosure with compressors, and production includes exploitation of gas from stalled wells.

As a result of its ongoing expansion and site improvements, the Banatski Dvor operation will increase its injection capacity from 1 million m³/day to 7 million m³/day. Long-range plans call for a production capacity increase from 1–5 million m³/day to 10 million m³/day. This project will benefit Serbia Gas, and its customers, by reducing excess electrical power consumption during the winter, and lowering gas costs during the summer.

Gas plant seeks advanced technology

As part of the Banatski Dvor project, Serbia Gas wanted to install the latest process control technology to optimize plant efficiency and reduce operating costs. Serbian engineers specified a plant automation solution utilizing standard industry protocols — not specialized software — as well as an open, supplier-independent control system platform.

The Banatski Dvor project involved integrating existing compressor controls and other legacy equipment as part of a unified, plantwide automation architecture. The plant required intrinsically safe (I.S.) technologies with high availability and redundancy as part of the new process control framework. The system needed to support Emergency Shutdown (ESD) and custody transfer systems, as well as integrate ladder logic functions.

The system for gas treatment consists of: wellhead controls and supervision; pipeline gathering and auxiliary equipment; separation vessels; utilities; transformer substation, and compressor cooler; ESD controls; gas custody transfer subsystem; and compressor controls.

HSE enables enterprise integration

Serbia Gas, through its engineering firm WIG, has had experience working with FOUNDATION fieldbus since 2001, so the technology was a natural choice for its Banatski Dvor facility. A modern control platform based on Smar’s SYSTEM302-7 enterprise automation...
solution was implemented to handle Distributed Control System (DCS) functions throughout the gas storage and production plant.

The Fieldbus Foundation’s High Speed Ethernet (HSE) implementation was ideally suited for use as a control backbone at the Banatski Dvor facility. Running at 100 Mbit/s, HSE is designed for device, subsystem and enterprise integration. It supports the entire range of fieldbus capabilities, including standard function blocks and Device Descriptions (DDs), as well as application-specific Flexible Function Blocks (FFBs) for advanced process and discrete/hybrid/batch applications.

HSE provides the same benefits as H1 (31.25 kbit/s) fieldbus, but at the subsystem integration level instead of the field device level. The technology supports interoperability between disparate controllers and gateways in the same way that H1 supports interoperability between transmitters and actuators from different suppliers. FFBs in HSE devices can be set up using programming languages such as those found in the international standard IEC 61131-3.

**How the control system operates**

The Serbia Gas control system integrates H1 fieldbus devices with HSE remote I/O, legacy HART devices, and an ESD subsystem. The system links dedicated compressor controls via ModBUS and ties all Human-Machine Interfaces (HMIs) together using HSE through an OPC server. HSE serves as a data highway for communication between linking devices and operator workstations, as well as a network allowing communications between various controllers.

With FOUNDAHSE, various CPUs can work together as one — providing a powerful backbone for enterprise integration. At the same time, FFB technology enables complete integration of conventional I/O and logic in the fieldbus system. Horizontal communications across the gas plant is achieved using 14 HSE nodes and more than 100 HSE external links. The system design also comprises a number of OPC servers and OPC clients for online diagnostics, maintenance and calibration; third-party HMI integration; and historical trends and reporting.

At the heart of the new control system are multi-functional, high performance, integrated FOUNDAH1 fieldbus controllers. The controllers can work as an H1-H1 bridge or an H1-HSE gateway, allowing wider communication between field devices and greater flexibility in continuous control strategies. Through their I/O cards, the controllers can also execute discrete control via relay diagram logic — supporting a single, integrated system.

For the gas well architecture, remote cabinets are used for local control gas injection and extraction. Each well is equipped with surface and subsurface valves with hydraulic actuators. The fieldbus controllers are programmed so they can independently control the process at wells even if there is a break in connection. The system also employs automatic remote control and manual local override. A local UPS provides the voltage supply for at least one open-close cycle of on/off valves.

In the process control scheme, one fieldbus controller is assigned per well. A HART/H1 fieldbus gateway integrates the legacy HART transmitters, and digital I/O is connected directly to the controller I/O modules. The fieldbus controller supports FFBs for ladder logic, allowing full integration of digital signals to the FOUNDAH1 fieldbus system.

For the gas pipeline and collector architecture, all wells have the same fieldbus equipment. This includes one temperature transmitter, one pressure transmitter, one mass flowmeter, and one valve positioner per well. The devices are connected through four FOUNDAH1 channels to the fieldbus controllers. The automation system processes signals from instrumentation and valves on the separation vessels, as well as mechanical equipment around the vessels. In the second phase of the project, new vessels will be...
opportunity

For greater opportunity we can help you improve your aim.

Honeywell is more than an industry leader in process automation, we also offer cutting-edge technology and the services you need to oversee and optimize your plant’s operation. Our applications go beyond the control system, allowing you to view your plant data in context as well as integrate other relevant intelligence. Our offerings in cyber and physical security, wireless solutions, and advanced applications like process modeling and simulation better optimize your facility while keeping your people safe. At Honeywell, we can help you see the information you need to make better decisions faster for increased production, improved business performance and greater profit.

Honeywell

To get more opportunity out of your business, please call 1-877-466-3993 or visit www.honeywell.com/ps

consistent

ISbus the future-oriented system from R.STAHL contains various field device couplers for connecting both intrinsically safe and non-intrinsically safe field devices to a non-intrinsically safe fieldbus. All the proven ISbus devices, the fieldbus power supply as well as the extensive palette of accessories available for FOUNDATION Fieldbus H1 can now be installed in Zone 1 and Zone 2. R.STAHL offers the optimal spectrum of fieldbus components, accessories and systems for this newest generation of devices. Logically consistent and well thought out, innovative and pathbreaking, R.STAHL continues its tradition to make easy-to-use and efficient products for your solutions.

perfect

Request our Fieldbus Solutions brochure or visit www.fieldbus-solutions.com
R.STAHL, 74638 Waldenburg, Germany, +49 7942 943-0 or www.stahl.de
installed and instruments from these vessels will be connected to a spare controller. A controller located in the transformer substation processes signals from utility meters in the substation, and from the compressor cooler.

An interoperable ESD controller provides emergency shutdown of the process control system. This controller is connected to the host system using the ModBUS TCP/IP Remote Terminal Unit (RTU) protocol.

The gas custody transfer subsystem employs a redundant control configuration consisting of three ultrasonic flowmeters, three pressure transmitters, three temperature transmitters, two flow computers, and a gas chromatograph. Each flow computer is used for all three lines. The ultrasonic meters are set in the same pipeline, one behind the other, in order to measure the same flow.

For the compressor station, dedicated operator panels and controls are connected to the DCS by the Allen-Bradley 5/04 DH+ protocol. The panels are integrated into the control system using an Allen-Bradley to ModBUS TCP/IP converter.

The control system's I.S. interface utilizes a unique "split architecture" design concept. The MooreHawke ROUTE-MASTER solution includes packaged field device couplers with automatic segment termination and fold-back (i.e., non "current limiting") spur protection. This solution allows a full 1,900-meter segment length without any FISCO-type restrictions. It also supports very high plant availability because of integral surge protection, redundant DC power, and passive power conditioning.

Results show improved performance
Thanks to FOUNDATION fieldbus, Serbia Gas has achieved true distributed control across its process automation architecture. Control is completely distributed on different controllers, ensuring better reliability of the entire system. In addition, the fieldbus solution expanded data availability throughout the gas plant. This includes increased opportunities for process supervision; better alarm management, events and trends processing; and improved asset management with remote configuration, diagnostics, predictive maintenance, and calibration of FOUNDATION fieldbus and HART devices.

FOUNDATION fieldbus also helped to improve Serbia Gas’ bottom line: initial cost savings were realized through cable reductions — not to mention simple and quick acceptance testing and commissioning.

Conclusion
Serbia Gas started up its new automation system in June 2007, and the equipment is now under operation. Plans call for continued expansion at the Banatski Dvor site, including an increase from seven to 21 wells and the addition of two more compressor units. The FOUNDATION fieldbus-based control system will grow to keep pace with this progress, including an ESD package expansion and additional enclosures, usage of existing spares for additional signals, and installation of new fieldbus transmitters.
FOUNDATION™ SIF: Fieldbus Benefits in Plant Safety Systems

Interview with the Fieldbus Foundation’s technology director, Dave Glanzer

FOUNDATION fieldbus, with its industry-proven distributed function blocks and open communications protocol, is an ideal platform for advancing standards-based solutions for plant Safety Instrumented Functions (SIF). This technology enables process end users to realize significant reductions in their total cost of ownership by extending fieldbus benefits into plant safety systems.

Continued on next page
In this issue of Fieldbus Report, Dave Glanzer, Director of Technology Development, Fieldbus Foundation, provides an update on the latest development in SIF technology.

Fieldbus Report: Why did the Fieldbus Foundation decide to develop its SIS specifications?
Glanzer: Process industry end users requested the Fieldbus Foundation SIF solution in order to realize the CAPEX and OPEX benefits of open and interoperable fieldbus technology in their plant safety systems. In response to this request, the Fieldbus Foundation developed a SIS protocol approved by TÜV Anlagentechnik GmbH to meet the requirements of IEC 61508 up to, and including, SIL 3.

Fieldbus Report: How will process equipment suppliers utilize this technology?
Glanzer: Completion of the Fieldbus Foundation SIS protocol enables instrumentation suppliers to build fieldbus devices for use in SIFs. Third-party agencies will safety-certify these devices, and the Fieldbus Foundation will test and register them for interoperability. End users can apply the requirements specified in the IEC 61511 standard to determine the SIL needed for their particular application, and then select interoperable, safety-certified SIF fieldbus devices from multiple suppliers to build their safety systems.

Fieldbus Report: Where will Fieldbus Foundation SIF devices be used in a typical process operation?
Glanzer: There are many plant applications for Foundation SIF technology, including overpressure protection, liquid carry-over protection, burner flame-out protection, and emergency isolation valves (EIVs).

Fieldbus Report: What is the next step in this project?
Glanzer: The Fieldbus Foundation’s SIF working group is coordinating a series of technology demonstrations at end user sites around the world. Field demos will be staged at Shell Global Solutions, Amsterdam, The Netherlands; Saudi Aramco, Dhahran, Saudi Arabia; BP, Gelsenkirchen, Germany; and Chevron, Houston, Texas, USA.

Fieldbus Report: What is the scope of the Foundation SIF technology demonstration?
Glanzer: At the Shell Global Solutions technology laboratory, the end user has constructed a Foundation safety shutdown system demonstration rig incorporating logic solvers, safety devices, and SIF functions. The purpose of this demo is to evaluate Foundation fieldbus-enabled safety valves with Partial...
Stroke Testing (PST) capability, as well as various pressure and temperature devices. The end user will evaluate system integration capabilities with asset management and Basic Process Control System (BPCS) platforms.

**FR:** Are major plant automation and safety equipment suppliers supporting these demonstrations?

**Glanzer:** Yes, there is a high level of involvement across the industry. Leading companies participating in the SIF demonstration working group include ABB, BIFFI, BP, Chevron, Dresser-Masonelian, Emerson Process Management, Endress+Hauser, Fieldbus Diagnostics, HIMA, Honeywell, Invensys, Magnetrol, Metso Automation, Moore Industries, MTL, Pepperl+Fuchs, Risknowlogy B.V., RuggedCom, Saudi Aramco, Siemens, Shell Global Solutions, Smar, Softing, TopWorx, TÜV Rheinland, TÜV SÜD, Westlock Controls, Yamatake, and Yokogawa.

---

**2008 General Assembly News**

Continued from page 8

**R. STAHL Shows Ex i Field Device Couplers**

The R. STAHL Ex i field device coupler connects eight intrinsically safe FISCO devices to a fieldbus. The eight-spur variants of the 9411 type couplers have the same size as previously available models. Two eight-spur couplers are sufficient to connect typical fieldbus segments with up to twelve devices. Compared with three conventional four-spur couplers, this requires one-third less space and reduces costs by approximately 10 to 20 percent. With a total of 16 connections, this compact and cost-efficient solution also provides four spare spurs.
From batch to bottle to packaging to sipping. We make sure it’s a totally fluid plant-wide process.

If it sounds simple, it is. One solution, from one company, that uses a single control platform to connect production end-to-end. With one configuration environment for maximum reuse. Link your automation, batching, packaging, and business-level systems. It’s simple.

LISTEN. THINK. SOLVE.

RockwellAutomation.com/think/process.
End Users Complete Review Of HSE Remote I/O Use Cases

Economic benefits realized by incorporating remote I/O in fieldbus systems

The Fieldbus Foundation is moving forward on the development of a specification standardizing the interface of remote I/O into the open, integrated FOUNDATION automation infrastructure. The new High Speed Ethernet Remote I/O (HSE-RIO) specification will define the structure for interfacing remote I/O over the Fieldbus Foundation’s tightly integrated HSE control backbone.

The addition of remote I/O further tightens the integration of process instrumentation within the FOUNDATION fieldbus architecture. The Fieldbus Foundation’s End User Advisory Council (EUAC) recently completed its review of use cases for the HSE-RIO specification and submitted its comments to the foundation’s Technical Steering Committee (TSC). EUAC review, which involves leading process automation end users from around the world, is a vital step in the process of developing new areas of FOUNDATION technology.

Continued on page 21
Simplify Processes

FieldConnex

The best solutions are usually very simple.

Process automation is very much like other aspects of life. Complex systems are driven by astonishingly simple processes. Consider fieldbus. It offers straightforward communication from the control system to each field device. Control commands, closed loop control, and monitoring enable the management of the most complex processes.

FieldConnex® goes one step further. It simplifies the installation and the infrastructure, allowing you to design a fieldbus topology for your specific application. The High-Power Trunk, for example, transmits data and supplies power using only one cable and limits energy at the spur rather than the fieldbus trunk cable. Our Advanced Diagnostic Module in combination with a powerful commissioning wizard continuously monitors the fieldbus physical layer providing precise and detailed analysis. Intelligent components from the specialists who simply know what fieldbus is all about.

Pepperl+Fuchs Inc.
Twinsburg, Ohio
330-266-0022
FieldConnex.info

Pepperl+Fuchs
Protecting Your Process

DataCell Field
The New Foundation in Cable.

- Third-Generation Design—Easy to strip; round, smooth jacket makes installation in cable glands effortless and secure.
- Most Complete Line—16 and 18 AWG, single- and multi-pair cables with alternate color, shielding and grounding options.
- Save Time and Money—ITC-ER (Exposed Run) rating on all versions eliminates the need for conduit in most applications.
- Strong—Northwire ITC/PLTC-ER-rated DataCELL® FOUNDATION fieldbus cables pass the same crush and impact tests for metal-clad cable (under UL 1659) without the difficult metal armor.
- Compliant—Meets or exceeds the new FF-844 specifications for Type A. All DataCELL FOUNDATION fieldbus cables are approved for use in Classes I & II, Div. 2 hazardous locations, are UL Listed ITC/PLTC-ER and CSA CMX-Outdoor-CMG.
- Versatile—New dual-rated ITC and Marine-Shipboard versions are Arctic Grade Extreme—suitable for applications to -60°C.

Shipped Direct.
Largest variety available.
Stock in 15 days for single-pair cable. No minimums.

FREE SAMPLE!
1-877-210-9945
cableinfo@northwire.com
www.northwire.com/bus

© 2008 Northwire, Inc. All rights reserved.
For example, end user feedback led to the development of HSE using COTS (commercial off the shelf) equipment and the Foundation Safety Instrumented Functions (SIF) project.

Fieldbus Foundation President and CEO Rich Timoney termed the HSE-RIO initiative “an important step forward” providing operational and business benefits for automation end users. “Device networks offer communication capabilities, but do not provide a complete automation infrastructure. Foundation fieldbus delivers process integrity, business intelligence, and open scalable integration in a managed environment, making it a true system infrastructure. Users will realize CAPEX and OPEX benefits from incorporating remote I/O in this technology.”


A key player in the HSE-RIO working group, R. STAHL, hosted the group’s inaugural meeting at its headquarters in Waldenburg, Germany, in early 2007. R. STAHL’s IS1 Zone 1 remote I/O solution not only supports conventional and HART devices, but is also suitable for fieldbus environments, and is already optionally available with Modbus TCP capability for Industrial Ethernet communication.
NAMUR Collaboration Results In Fieldbus Diagnostic Profiles

New specification builds upon robust Foundation diagnostic features

The Fieldbus Foundation has begun final validation of a Foundation fieldbus diagnostic profiles specification based on guidelines established by the NAMUR Working Group 2.6. The new specification builds upon the robust diagnostic features already provided by Foundation fieldbus devices. At the same time, it allows end users to harness enhanced Electronic Device Description Language (EDDL) technology to achieve true, actionable diagnostics.

Cooperation between the Fieldbus Foundation and NAMUR enabled all parties to develop a greater understanding of end user requirements during this period of rapid fieldbus adoption.
Headquartered in Germany, NAMUR is an international user association of automation technology in the process industries. The organization is engaged in pooling experiences and compiling aids among its member companies; setting user requirements on new devices, systems and technologies; and participating in national and international standardization bodies. NAMUR is active in the fields of measurement systems, process analytics, process control, communications systems, operations management, operational logistics systems, and electrical engineering.

Since May 2006, the Fieldbus Foundation and NAMUR have collaborated on fieldbus performance issues, such as device diagnostics, which both parties identified as requiring further clarification and guidance for automation end users in global markets. A key objective of this work was to unify the integration of fieldbus self-monitoring data and ensure the availability of valuable diagnostic information to process plant operators, engineers and technicians.

According to the NAMUR NE107 recommendation, Self Monitoring and Diagnosis of Field Devices, fieldbus diagnostic results should be reliable and viewed in the context of a given application. The document recommends categorizing internal diagnostics into four standard status signals. It also stipulates configuration should be free, as reactions to a fault in the device may be very different depending upon the user’s requirements. According to NE107, plant operators should only see status signals, with detailed information viewable by device specialists.

The new diagnostic profiles specification identifies “role-based diagnostics” for fieldbus equipment and defines a consistent set of parameters for diagnostic alarming. This approach supports categorization of diagnostics according to NE107, thus ensuring the right diagnostic information is available to the right person — at the right time. In addition, it allows diagnostics to be applied, as most appropriate, for a particular plant application (such as process control engineering or asset management maintenance).

In September 2007, the Fieldbus Foundation began testing prototype devices and systems in order to validate the diagnostic profiles specification. It also developed test cases allowing the diagnostic profiles to be used with the current Foundation Fieldbus Interoperability Test Kit (ITK). Final release of the specification for implementation by instrumentation and control system suppliers is expected in the second quarter of 2008.
Turn this into a state-of-the-art, 10-plant petrochemical complex. In 27 months. With 10 EPCs. And 1 automation architecture.

You’re kidding, right?

In fact, the automation was so tightly integrated that, when the time came for SECCO to flip the switch, all 10 plants came on-stream simultaneously. Without a hitch. Regardless of how ambitious your project may feel, you can trust Emerson to get it done. Read more about this extraordinary case at EmersonProcess.com/SECCO
Registered Product Update

Industry benefits from greater selection of tested, interoperable devices

With the demand for FOUNDATION technology on the rise, the pace of fieldbus device registration is increasing as well. The Fieldbus Foundation has already registered hundreds of fully interoperable instruments. Registered products range from transmitters and meters, to valve positioners, actuators, controllers and linking devices. These products are available from the world’s leading automation equipment suppliers.

The foundation’s online product catalog (www.fieldbus.org) gives registered device information, including which standard blocks were tested for interoperability, the presence of untested Function Blocks (if any), and additional useful information about the device.

Testing verifies all aspects of a field device

The Fieldbus Foundation’s rigorous Interoperability Test and Registration Procedures thoroughly examine and verify all aspects of the intelligent field device. The registration process is not a simple exercise in paperwork, but a detailed and methodical set of procedures that test all specified functions of the device. In order to fulfill the registration process, manufacturers must submit their devices for independent lab verification performed by the Fieldbus Foundation at its facility in Austin, Texas.

The Fieldbus Foundation’s registration test procedures begin with Physical Layer testing, which validates the electrical characteristics of the field device. Because of the rigorous physical layer requirement, end users can rely on the specified network when designing FOUNDATION fieldbus segments.

In addition to thorough physical layer testing, FOUNDATION-compliant devices must contain registered stack software. Registered field devices communicate in a known, common, specified manner and adhere to the critical timing requirements of the FOUNDATION protocol.

Only after the device has met both physical layer and stack conformance criteria is it eligible for interoperability testing. The goal of this testing is to validate the implementation of the device user layer, or function block application. All aspects of the function block application are meticulously examined, including mode and status behavior, parameter conformance, alert handling, trending, simulation and power failure recovery.

End users purchasing fieldbus products carrying the Fieldbus Foundation’s official registration “checkmark” seal have the assurance that different devices, from different manufacturers, possibly using different physical layers or different stack configurations, will interoperate fully on a given FOUNDATION fieldbus segment.

Choice of registered products now available

Many new types of FOUNDATION fieldbus products have recently achieved Fieldbus Foundation registration. For example, Endress+Hauser has registered the iTEMP® TMT85 temperature transmitter, which fits a connection head of Form B. Thanks to its reliability, long-term stability, high accuracy and advanced diagnostics, the iTEMP TMT85 is suitable for a variety of applications. The device provides a number of diagnosis functions, such as open- and short-circuit detection, incorrect wiring, and corrosion detection of sensor cabling on RTD 4-wire connection or thermocouples. In two-channel operation, a backup function and sensor drift recognition are available.

Endress+Hauser’s Prosonic Flow 92F is a two-wire, in-line, ultrasonic flowmeter comprising a bus-powered transmitter and multi-beam ultrasonic inline sensor. This meter offers high accuracy and cost-effective, non-invasive flow measurement. The Prosonic Flow 92F measures both electrically non-conductive and conductive liquids, including solvent and hydrocarbon derivatives.

In addition, Endress+Hauser’s Liquiline M measures pH/Orp, conductivity, and dissolved oxygen. It features a large, high-contrast display with multilingual user guidance and online sensor status for predictive maintenance. A robust plastic or stainless steel casing is designed to IP67/NEMA 4x. Intrinsically safe versions are available with ATEX, FM or CSA certification as required.

R. STAHL’s explosion-proof digital I/O coupler for the ISbus system ensures direct, consistent integration of basic sensors and actors to a FOUNDATION fieldbus H1 network. The

Endress+Hauser’s Prosonic Flow 92F ultrasonic flowmeter offers high accuracy and cost-effective, non-invasive flow measurement.
device is suitable for use in Zone 1 and Zone 2. Besides eight channels for the NAMUR specification or EN 60947-5-6 compliant Ex i input signals, four high-performance Ex i outputs are available.

Smar has registered a new series of multi-functional, high performance, integrated FOUNDATION fieldbus linking devices ready for the HSE infrastructure. The DF62 is the second generation of Smar HSE linking devices, offering four H1 channels, one 10/100 Mbit/s Ethernet port, and the capability of block execution. The DF62 can work as an H1-H1 bridge or an H1-HSE gateway, allowing wider communication between field devices and greater flexibility in continuous control strategies.

Through its I/O cards, the DF62 can also execute discrete control via relay diagram logic — supporting a single, integrated system.

Turck now offers an innovative Diagnostic Power Conditioner (DPC) system for FOUNDATION fieldbus. The system features an integrated diagnostics module providing end users with vital statistics that ease the task of diagnosing physical layer-related problems. This information also assists in the commissioning and maintenance of a FOUNDATION fieldbus system. The DPC continuously monitors physical layer components to detect anomalies and long term, subtle changes.
The Fieldbus Foundation has announced the establishment of a Host Profile Test & Registration Program — a major step benefiting the global automation industry. Under the new registration process, fieldbus hosts successfully completing the test requirements will be authorized to bear the official FOUNDATION product registration symbol.

The Fieldbus Foundation’s board of directors mandated rigorous host testing, which will strengthen fieldbus interoperability and system integration. Host registration will supersede the existing Host Interoperability Support Test (HIST) program.

In a FOUNDATION fieldbus system, hosts may include configuration tools, recording devices, alarm display panels, Human-Machines Interfaces (HMIs), or systems with a combination of functionality.

Host testing meets market demand

According to Fieldbus Foundation President and CEO Rich Timoney, host testing and registration will provide even greater assurance of FOUNDATION fieldbus system interoperability. “The establishment of a host registration program is another example of our commitment to full interoperability, and seamless integration, within a FOUNDATION fieldbus environment,” said Timoney. “Our technology offers many features ensuring a ‘plug and play’ solution using fieldbus devices and hosts from different manufacturers.”

Within the Fieldbus Foundation’s automation infrastructure, interoperability is made possible by the fact that devices and software must conform to the same standard.

Testing and registration ensures that like the current device registration process, host registration will strengthen fieldbus interoperability and system integration.

The Fieldbus Foundation is the only automation industry organization with a comprehensive host-testing program.
equipment bearing the official FOUNDATION “checkmark” seal can be connected on the same bus or network and exchange information without an extensive integration effort. End users can select the best device for a specific measurement or control task, regardless of the manufacturer.

Test profile specification assists developers

The Fieldbus Foundation recently announced the availability of the FF-569 Version 2.0 Host Interoperability Support Test Profile and Procedures Specification, which is the basis for the Host Profile Test & Registration Program. FF-569 Version 2.0 includes updated FOUNDATION fieldbus host profiles and features defining interoperability requirements and test procedures leading to host registration.

In the FOUNDATION fieldbus automation infrastructure, host profiles are a key to system interoperability. The profiles define required host features for different classes of hosts, including Class 61 Integrated Hosts, Class 62 Visitor Hosts, and Class 63/64 Bench Hosts.

A host profile defines a minimum set of FOUNDATION-specific features that must be implemented by a host to claim compliance to a specific host class. A host may incorporate one or more hardware and software components as defined by the host manufacturer.

Timoney stressed the importance of the new host registration program. He said, "The Fieldbus Foundation is the only industry organization with such a comprehensive host-testing program. This is key, because it gives users an extra measure of confidence that the systems they are buying incorporate the robust functionality of FOUNDATION fieldbus and are able to function as part of an open, interoperable control system.”
Foundation Fieldbus—we put the pieces in place.

The right skills to optimize your projects.

It’s powerful and versatile, but getting the most from your Foundation Fieldbus architecture is a major challenge. At Endress+Hauser, we complement our wide product offering with top industry expertise and experience. This enables you to realize your project’s potential and achieve the return on investment you expect. Independent of the DCS we offer you solutions integration for condition monitoring, asset management and control in the field. We deliver improved plant performance and better business results and reduce hassle and risk. Nothing puzzling about that.

www.automation.endress.com/fieldbus
The Fieldbus Foundation is meeting the growing demand for qualified Foundation fieldbus training by expanding its educational seminar program across the globe. The 2008 seminar program shows attendees how Foundation technology is “Changing the Playing Field” for industrial automation.

Oriented towards end users and engineering firms, the one-day seminars cover all aspects of Foundation automation infrastructure management. Each of the core technology areas — Process Integrity, Business Intelligence and Open Scalable Integration — is discussed in detail for 45 minutes to one hour, followed immediately by a hands-on demonstration of 15-20 minutes to reinforce the subject matter.

Local end user speakers also present case studies about their fieldbus applications. The seminars conclude with a demonstration addressing Electronic Device Description Language (EDDL) technology.

The Fieldbus Foundation provides each seminar attendee with a certificate that can be used for PDH hours, as well as hard copies of all presentation materials.

Fieldbus End User Seminar Program Expanded

Foundation technology training offered in diverse locations worldwide

The Fieldbus Foundation is meeting the growing demand for qualified Foundation fieldbus training by expanding its educational seminar program across the globe. The 2008 seminar program shows attendees how Foundation technology is “Changing the Playing Field” for industrial automation.

Oriented towards end users and engineering firms, the one-day seminars cover all aspects of Foundation automation infrastructure management. Each of the core technology areas — Process Integrity, Business Intelligence and Open Scalable Integration — is discussed in detail for 45 minutes to one hour, followed immediately by a hands-on demonstration of 15-20 minutes to reinforce the subject matter.

Local end user speakers also present case studies about their fieldbus applications. The seminars conclude with a demonstration addressing Electronic Device Description Language (EDDL) technology.

The Fieldbus Foundation provides each seminar attendee with a certificate that can be used for PDH hours, as well as hard copies of all presentation materials.

The 2008 seminar schedule currently includes:

Cardiff, Wales March 4
Wuhan, China March 27
Reading, England April 9
Houston, Texas, USA April 10
Cherry Hill, New Jersey, USA May 8
Jurong, Singapore May 16
Mexico City, Mexico June 10
Qindao June 19
Ho Chi Min City, Vietnam July 22
Vong Tau, Vietnam July 24
Taipei, Taiwan August 19
Kaoshun, Taiwan August 21
Calgary, Alberta, Canada September 11
Manila, Philippines September 23
Pleasanton, California, USA October 2
Guanzhou, China November 6
Savannah, Georgia, USA November 6
Chicago, Illinois, USA November 20
Sunter, Singapore December 2-5

Future seminars to be scheduled in the Asia/Pacific region include:

Thailand North India
Malaysia Osaka, Japan
Jakarta, Indonesia Tokyo, Japan
South India Korea

Dates of the above Asia/Pacific seminars are yet to be determined.
Brazil's Alumina do Norte do Brasil S.A. (Alunorte) is a leading global producer of alumina, the raw material used for primary aluminum production. Alunorte was founded in 1978 following an agreement between the governments of Brazil and Japan. The Alunorte operation is jointly owned by the Rio de Janeiro iron production and exportation mining firm, Companhia Vale do Rio Doce (CVRD), Norsk Hydro, and other partners.

Alumina is the aluminium oxide extracted from bauxite by a refining process. It is the main raw material for aluminum production. The most common alumina refining technique is known as the Bayer Process. Alumina refining involves four basic stages: grinding and digestion, liquor purification, precipitation, and drying and calcining. While most alumina production is calcined alumina for smelting, some alumina hydrate is sold for other uses such as water treatment and chemicals manufacture.

Expansion requires new control technology

A recent expansion project increased the capacity of the Alunorte alumina refinery, located in Barcarena-PA in northern Brazil, by more than 40 percent to approximately 6.5 million annual tons. The refinery is now the largest and most modern alumina production facility in Latin America — and around the world.

As part of the refinery upgrade, Alunorte chose ABB to supply digital automation systems employing FOUNDATION fieldbus. All device interfaces are completely integrated with ABB’s Industrial IT System 800xA Extended Automation solution. Alunorte also uses ABB’s Optimize IT Real-Time Production Intelligence (Real-TPI) product.

The refinery’s Distributed Control System (DCS) architecture now has approximately 18,000 I/O points, including FOUNDATION fieldbus and Profibus interfaces and 13 redundant controllers. All motor control center interfaces with the control system are via Profibus communication, and all instrumentation is done via FOUNDATION fieldbus High Speed Ethernet (HSE). Integration with intelligent devices provides centralized diagnostic information, enabling a wide range of optimization possibilities for refinery operators and engineers.

Wider view of operations provides benefits

With its new process control solution, Alunorte can accurately identify losses — regardless of whether they are maintenance or operational losses, or even losses due to problems in the process. Plant personnel can determine the root causes of the losses, in order to eliminate them, contributing directly to production increases and greater equipment availability.

Continued on next page
Regional Roundup: Latin America

Foundation technology gains acceptance in fast-growing industrial region

From the sugar refineries of Brazil, to the pulp mills of Chile, Foundation technology is improving the business results of industrial end users throughout Latin America — and around the world.

This issue of Fieldbus Report includes a roundup of current Foundation fieldbus installation activity in the fast-growing Latin America region.

Elekeiroz S.A

Throughout Brazil and other countries in Latin America, Foundation technology as well as remote I/O are becoming an accepted solution for asset management and control in the field. R. STAHL recently executed a fieldbus project at the plant of Elekeiroz S.A., a large Brazilian manufacturer of polyester resins. Elekeiroz used R. STAHL’s Foundation fieldbus device couplers in a Zone I production area together with Emerson’s DeltaV™ system. The user-friendly installation of the STAHL couplers, together with the easy start-up and long term reliability, led Elekeiroz to choose Foundation technology.

Petrobras

Another important project R. STAHL is handling with Foundation fieldbus is the large Cacimbas Gas Treatment Unit of Petrobras in the Brazilian state of Espírito Santo. Here, R. STAHL fieldbus couplers were used as interface between the field and Yokogawa’s Centum CS 3000 system.

Celulosa Arauco S.A

Celulosa Arauco S.A. utilized Emerson’s PlantWeb™ digital architecture in one of the largest Foundation fieldbus installations in the pulp & paper industry. Arauco, based in Santiago, Chile, is among the world’s leading producers of bleached and unbleached Kraft pulp. A state-of-the-art process network which included 3,000 fieldbus instruments and the DeltaV control system was installed at Arauco’s Valdivia mill. Emerson’s AMS™ Suite predictive maintenance software was used to communicate with the field instruments installed in the mill to help ensure high plant reliability, availability, and performance.

Repsol YPF

At the Loma la Lata gas field in the Neuquén Province of western Argentina, Repsol YPF has retrofitted its main low-temperature separation complex and much of the associated gathering system with a single DeltaV control system using Emerson’s PlantWeb digital plant architecture. Featuring an Ethernet LAN that includes wireless segments for remote locations, the control system makes heavy use of intelligent field instruments connected by Foundation fieldbus. It replaces “islands of automation” consisting of a conventional DCS, an RTU network, and a SCADA system. The result is state-of-the-art integration of process controls throughout the separation complex with those of associated wells, primary separators, and compressors as far away as 10 kilometers.
Fieldbus Solution Highlights

Industrial IT System 800xA Extended Automation

System 800xA provides a better way to achieve measurable productivity and profitability improvements. It extends the scope of traditional control systems to include all automation functions in a single operation and engineering environment; enabling your plants to perform smarter and better at substantial cost savings.

Integration of FOUNDATION fieldbus into System 800xA utilizes the advanced features offered by the protocol: control of the field into the field, redundant strategies and Asset Optimization applications.

H1 and HSE – The ABB FOUNDATION fieldbus solution utilizes High-Speed Ethernet via the ABB Linking Device connecting H1 segments to the control system in single or redundant configuration. Benefits of this approach are that Linking Devices can be distributed about the plant and usage of High-Speed Ethernet as the network backbone.

System Integrity – The FOUNDATION fieldbus back-up LAS (Link Active Scheduler) function in field devices and redundancy at the high-speed (HSE) bus and supervisory device offer a high degree of system integrity.

Integration of Field Devices – Field devices are integrated by importing the standard DD and CF files as provided by devices that have the Fieldbus Foundation registration “checkmark.”

ABB • www.abb.com/controlsystems

Emerson Introduces DeltaV™ InSight Next-Generation Control Performance Application

Emerson Process Management has announced the availability of the DeltaV™ InSight integrated control performance software. DeltaV InSight utilizes FOUNDATION fieldbus device diagnostics to monitor, analyze, diagnose, and improve control loop performance. The InSight application includes all the basic monitoring and tuning capability of its predecessor products, DeltaV® Tune and DeltaV® Inspect, plus advanced diagnostics and adaptive tuning capabilities made possible with embedded learning algorithms. DeltaV InSight makes it easy to improve process control by monitoring control performance; identifying and diagnosing problem loops; recommending tuning and maintenance improvements; and continuously adapting to changing process conditions.

DeltaV InSight automatically learns users’ processes with embedded learning algorithms running at the controller level and develops process models based on day-to-day operations. These models allow users to identify operational benchmarks, diagnose problems and calculate optimum loop tuning across the entire control system.

Emerson Process Management • www.emersonprocess.com

The World’s First FOUNDATION Fieldbus 2-Wire In-Line Ultrasonic Flowmeter

Endress+Hauser’s new Prosonic Flow 92F FOUNDATION fieldbus 2-wire in-line ultrasonic flowmeter comprises a bus-powered transmitter and multi-beam ultrasonic inline sensor. It offers high accuracy (better than 0.5% optional 0.3%) and cost-effective, non-invasive flow measurement.

The measurement requires no mechanical interaction with the flow, making it virtually maintenance free and without additional pressure drop. The arrangement of the ultrasonic sensors ensures optimal scanning of the flow velocity distribution in the measuring section of the sensor, reducing the requirement for upstream straight pipe to less than five times the pipe diameter.

Prosonic Flow 92F is suitable for service in the chemical industry. It measures both electrically non-conductive and conductive liquids, including solvent and hydrocarbon derivatives, and compliments the application range of electromagnetic flowmeters for both process and utility applications.

For more information, go to: http://www.fieldbus.org/index.php?option=com_mtree&task=viewlink&link_id=1322&fbstatus=Registered&Itemid=324

Endress+Hauser • www.automation.endress.com/fieldbus

Invensys’ InFusion Field Device Manager Supports Both FDT and Enhanced EDDL

A key component of the new InFusion Enterprise Control System from Invensys is the Field Device Manager — an open toolset to configure, commission, maintain and diagnose FOUNDATION fieldbus devices throughout their lifecycle.

Field Device Manager provides a comprehensive, fully integrated engineering and maintenance environment and is the first to offer support for both FDT and Enhanced EDDL technologies.

Invensys • www.foxboro.com

New MTL Fieldbus Components

Whether you are planning your first fieldbus project or your twentieth, it pays to know what is available. And MTL knows a thing or two about fieldbus networks, having been involved in defining the early standards right up to supplying the power supplies, wiring hubs and components for the world’s largest fieldbus projects. So before you commit your hard-won budget check out what’s available from the leading source of:

- Fieldbus power supplies
- Field test equipment
- Fieldbus I/O and displays
- Surge protection devices
- Process junction boxes

For more information, request a copy of the latest product overview by e-mailing fieldbus.info@mtl-inst.com and read up on application stories that outline why MTL is the world’s leading supplier of fieldbus components.

MTL • www.mtl-fieldbus.com
1757-FFLD FOUNDATION Fieldbus Linking Device from Rockwell Automation

The FOUNDATION fieldbus standard provides you the ability to distribute architecture throughout a plant. This enables integrated, seamless distribution of data and the execution of process functions with multi-vendor devices.

Rockwell Automation takes full advantage of the FOUNDATION fieldbus standard with the combination of the linking device and RSFieldbus Software to bring fieldbus devices into the Integrated Architecture™. Control Loops can be run in a Logix Controller or in the FOUNDATION fieldbus devices. This device fully supports all FOUNDATION fieldbus control capabilities through HSE & EtherNet/IP.

The linking device offers you the most flexible FOUNDATION fieldbus device interface available and when used with Integrated Architecture, you can greatly increase the efficiency of your manufacturing. With the 1757 FFLD, you have the flexibility to do process control with any Logix controller while you are using the advanced capabilities of network based process instrumentation. The device also includes the unique ability to bridge both FOUNDATION fieldbus HSE & EtherNet/IP networks to FOUNDATION fieldbus H1 device networks.

Rockwell Automation

Yokogawa’s digitalYEWFLO Vortex Flow Meter Available with a Multi-Variable Option

The digitalYEWFLO Multi-Variable Mass Vortex Flow Meter is based on the field-proven sensor technology of the digitalYEWFLO series of vortex flow meters, which features a unique signal processing technique that extends the features of DSP. The advanced processing algorithms are known as Spectral Signal Processing (SSP). SSP analyzes the vortex waveform into its spectral components to filter noise from the signal for the most stable measurement possible. The meter will provide stable, accurate measurements at low flows, even in noisy environments, without any need for start-up tuning. The user benefits through greater reliability, reduced maintenance and a lower total cost of ownership.

Now, in addition to the benefits of no start-up tuning and low flow stability, the addition of an integral temperature sensor extends the application of digitalYEWFLO to include the mass flow measurement of saturated steam based on steam tables embedded in the software and the mass flow measurement of liquids based on programmed fluid temperature coefficients. The measured temperature can be displayed on the two-line LCD indicator and is also available through fieldbus for process temperature management. Additionally, mass flow rate, total and diagnostic information is also available.

Yokogawa • www.yokogawa.com/fld/FLOW/DVF/fld-dyf-ff-01en.htm

Save Project Time and Expense with Honeywell’s Patented Link Schedule Optimization

Projects utilizing FOUNDATION fieldbus technology have reached tens of thousands of devices, creating the need to improve performance. One method is to optimize the fieldbus link schedules to deliver better control, more devices per link, and less work for the project engineers.

Honeywell’s unique time-saving algorithm optimizes the link function block publication schedule. This prioritizes and optimizes the link by maximizing parallel execution, minimizing loop latency, and maximizing available communications bandwidth, resulting in significant savings.

Honeywell • hpsweb.honeywell.com/Cultures/en-US/Products/Systems/ExperionPKSFoundationFieldbusIntegration/default.htm

New White Paper Gives Fieldbus Basics

MooreHawke, a division of Moore Industries-International, Inc., has released a new white paper called “Introduction to Fieldbus.” This concise 8-page bulletin explains in terms any engineer, technician or operator can understand how fieldbus works. It explains: the advantages of using fieldbus networks; the elements of fieldbus (H1 cards, power conditioners, segments, spurs, device couplers and segment terminators); and much more. To get your copy, go to www.miinet.com/moorehawke.

MooreHawke • www.miinet.com/moorehawke

DataCELL FOUNDATION Fieldbus™ Cable — The Most Complete Line

Northwire’s third-generation designs include 16 and 18 AWG, single- and multi-pair cables with alternate color, shielding and grounding; easy-to-strip, round, smooth jacket for effortless installation in cable glands. All are ITC-ER (no need for conduit), meet/exceed FF-844 for “Type A”, approved for Class I & II, Div. 2 locations, UL-listed ITC/PLTC-ER and CSA CMX-Outdoor-CMG-compliant. Dual-rated ITC and artic-grade marine-shipboard (to –60°C) version offered.

Complementary Sample!
1-877-210-9945

Northwire • www.northwire.com/bus
Pepperl+Fuchs’ Award Winning Advanced Diagnostics Module Now Available in Mobile Configuration for Maximum Flexibility

The Mobile Advanced Diagnostic Module from Pepperl+Fuchs is a comprehensive physical layer measurement tool for Foundation fieldbus H1 and Profibus-PA installations that can be used in Zone 2/Class I, Div. 2 areas. The Mobile ADM creates a visual picture of the fieldbus communication signal to facilitate faster commissioning work and easy, efficient troubleshooting.

For more information, call (330) 486-0002 or e-mail sales@us.pepperl-fuchs.com.

Pepperl+Fuchs • www.fieldconnex.info

1 x 8 Instead of 2 x 4: More Compact, Cost-Efficient Couplers

Introducing a new Ex i coupler which connects eight instead of the usual four intrinsically safe FISCO devices to a fieldbus, R. STAHL has extended its ISbus product range which consists of Foundation fieldbus H1 and Profibus-PA components and systems. The new 8-spur variants of the 9411 type couplers have the same size as previously available models. Two 8-spur couplers are sufficient to connect typical fieldbus segments with up to twelve devices. Compared with three conventional 4-spur couplers, this requires 1/3 less space and saves approximately 10 to 20% of expenses. With a total of 16 connections, this compact and cost-efficient solution also provides four spare spurs.

The new coupler models retain all proven functions and features of R. STAHL’s couplers. They allow users to choose between different grounding and shielding concepts, such as Single Point, Multi Point and capacitive grounding. The units feature an integrated, switchable terminator. They come with a power management which is unique on the market, reducing starting currents in the trunk and, in case of short-circuits in several spurs, minimizing fault currents in the bus. Signal and error status are signalized via clearly laid-out, multi-colored LEDs.

The 9411 couplers are suitable for use in Zone 1, Zone 2 and US Division 2. They are available with plastic or stainless steel housings which can be tailored to customer requirements.

R. STAHL • www.stahl.de

Smar’s SYSTEM302 Remote Controllers Connect to High Speed Ethernet (HSE)

Smar offers a series of advanced remote I/O and controllers that are all connected to Foundation High Speed Ethernet (HSE). Unique to SYSTEM302 are the gateway connections of your choice (Foundation fieldbus, Profibus, DeviceNet, and AS-I). All remote I/O can access conventional signals from a variety of discrete and analog I/O cards, also having a Modbus connection for legacy equipment integration. Other capabilities include Function Block Programming and Ladder Logic via FFB (Flexible Function Block) and EDDL.

SYSTEM302 is the “all-in-one” structure that supports the use of many different technologies in a single, integrated and transparent environment for engineering, operation and maintenance of your plant.

Smar • www.smar.com

Softing’s FG-100 FF/M — New Features for a Field-Proven Product

Softing has updated its field-proven Foundation fieldbus to Modbus/TCP gateway FG-100 FF/M with its new field-device stack to enhance the product with the latest technology Foundation fieldbus has to offer. The Modbus/TCP gateway represents an efficient, yet economical solution for control system manufacturers that want to avoid developing a dedicated H1 interface for their control devices.

The certified FG-100 FF/M offers one Modbus/TCP port that is connected to the control or visualization device (e.g., PLC or HMI) and four H1 ports that connect to H1 field devices. The gateway is configured like any other H1 field device by using a standard configuration tool and transparently maps the process data to standard Modbus holding registers (4x Registers). A PLC controls H1 devices simply by accessing the holding registers in the FG-100 FF/M.

For more information, please visit us online or call (978) 499-9650.


TURCK’s New Diagnostic Power Conditioner for Foundation Fieldbus H1

Ease installation with TURCK’s open-style DIN-rail mountable IP 20 rated 12-port JRBS junction box. JRBS removable terminals let you avoid hard wiring in tight spaces, making installation and replacement a breeze.

JRBS junction boxes can be wired from either side of the box, and incorporate short circuit protection with LED indication on each spur. A pluggable terminating resistor is available and may be used with the three pole terminal blocks.

TURCK • www.turck-usa.com/Press_Room/DPC.htm

Yamatake Delivers Hybrid Smart Positioner, SVP3000 Alphaplus

Yamatake’s SVP3000 Alphaplus Model AVP304/204 (Model 204: remote type positioner) obtains a unique function that is realized by hybrid technology. The Model AVP304/204 adopts two signals — analog and Foundation fieldbus. Users need not worry about positioner selection, since the

Yamatake • www.azbil.com

Model AVP304/204 can control a valve both by analog signal and Foundation fieldbus signal. The Foundation fieldbus signal is for diagnostic purposes. The SVP3000 Alphaplus and control valve maintenance support system “Valstaff” provide Stick Slip detection which is a dynamic diagnostic.

Yamatake • www.azbil.com
Automation Infrastructure For Operational Excellence.

The Fieldbus Foundation is “Changing the Playing Field” in industrial automation. The scope of Foundation™ technology makes it a process automation infrastructure—one of the most advanced and scalable solutions available.

This infrastructure is supplier-neutral and standards-based, providing end users with a common framework to implement and manage strategies for operational excellence and continuous improvement in process manufacturing.

Today, Foundation fieldbus dominates the worldwide process automation market—and is a growing solution for the hybrid industries. It’s the “technology of choice” for both early adopters and new end users around the globe, especially in developing markets such as Asia-Pacific, Latin America and Eastern Europe.