Automation Infrastructure For Operational Excellence.

In This Issue:
- General Assembly Recap
- First Host Registrations
- Understanding FDI
- FOUNDATION for SIF Update
- WIO Demonstrations
- 2009 Seminar Program
- FISCO Solution Benefits
- Diagnostic Profiles Specification
- Asia-Pacific Roundup
- Fieldbus Product Highlights

PROCESS INTEGRITY
BUSINESS INTELLIGENCE
OPEN SCALABLE INTEGRATION
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
President’s Letter

In a tough economy, fieldbus makes good business sense

For companies in the processing industries, business conditions have never been tougher. Economic uncertainty, as reflected in bank failures, stock market declines and corporate bailouts, as well as rising raw material costs and tighter government regulations, all challenge the bottom line. Expanding global markets also mean greater competition from a broader spectrum of industry participants.

As industrial operations cope with an aging plant infrastructure, they must find ways to improve process efficiency and extend asset life. Many facets of the current industrial infrastructure need replacing, and much of what needs to be replaced is at the control-system layer.

In this difficult environment, process plants need technology with a purpose — matching their automation initiatives to strategic business objectives. They’re seeking real opportunities to minimize downtime, increase throughput, reduce capital equipment costs, and lower operating expenses.

Anyone familiar with process automation knows that a revolutionary control technology — FOUNDATION™ fieldbus — is changing the way plants do business. Fieldbus is a digital network architecture that uses the power of field intelligence to improve plant performance. This enabling technology has been proven in installations around the world, with major automation end users choosing it for the most demanding production applications.

For the typical CEO, COO or plant manager, the financial incentives for adopting FOUNDATION fieldbus are many. Consider the following: 20 to 40 percent of control loops currently run in manual control, 80 percent of loops demonstrate excessive process variability, and outdated control strategies cause many potential benefits of Advanced Process Control (APC) to go unrealized.

The results from major fieldbus projects in many different markets — oil & gas, petrochemicals, paper, power and pharmaceuticals, just to name a few — show that FOUNDATION technology enables significantly improved plant economic results. End users are realizing higher returns for shareholders, improved environmental safety for local communities, and increased efficiency for customers served.

From a performance standpoint, leading end users indicate that FOUNDATION fieldbus enables 10 percent higher throughput, 30 percent greater capacity (without adding personnel), and 20 percent better efficiency. Plant automation projects also benefit from significant reductions in selection, engineering, construction, startup and overhead costs.

The ability of FOUNDATION technology to reduce maintenance costs, specifically operator performance of routine repairs and predictive maintenance of control valves, can have a direct bearing on meeting corporate objectives for uptime, quality and profitability. In addition, predictive and preventative maintenance strategies add value by tracking and optimizing the useful life of the unit. These concrete savings often times go unmeasured when planning for upgrades involving fieldbus-based control systems.

FOUNDATION fieldbus is a powerful change agent enabling industrial companies to significantly improve their business outlook. Indeed, fieldbus represents a different way of thinking (integrating predictive intelligence in the automation architecture) and a better way of working (improving plant efficiency, capacity and throughput).

FOUNDATION technology is well suited for today’s demanding business model, which not only requires improvements in product quality, regulatory compliance and time-to-market, but also ongoing reductions in capital expenditures and operating costs.

All the best,

Richard J. Timoney
President & CEO
Fieldbus Foundation
Redundant FISCO... get higher levels of **system availability**

MTL has made a major enhancement to its class-leading range of Fieldbus Intrinsically Safe Concept (FISCO) power supplies for **FOUNDATION™** Fieldbus networks.

With the introduction of power supply redundancy, FISCO can now be specified for even the most critical hazardous area applications, while retaining the key benefits of intrinsic safety such as the ability to conduct ‘live maintenance’ on the entire field network. The redundancy scheme eliminates the risk of network failure in the event of the loss of a single power supply unit. Such redundancy is routinely specified by end users and engineering companies where failure could result in down-time and lost production.

To find out how MTL can help you with your next Fieldbus project, visit our website at: [www.mtl-fieldbus.com](http://www.mtl-fieldbus.com) or email: enquiry@mtl-inst.com

Highest levels of system availability
Fully live-workable trunk and spurs
Compliant with IEC 60079-27 FISCO standard

---

SEAMLESS INTEGRATION.

Smart Wireless lets you start anywhere and go everywhere.

Whether you start with a handful of nodes or hundreds, Emerson Smart Wireless gives you the first truly scalable wireless network that seamlessly integrates with your wired one. Thanks to open, interoperable WirelessHART™ and Industrial Wi-Fi standards, Emerson Smart Wireless incorporates directly into your existing automation architecture — without any need for upfront engineering, site surveys or special commissioning. And to your operators and maintenance staff, each Smart Wireless device looks and behaves like a wired one, no matter how many you install. So not only is it self-organizing, Emerson Smart Wireless plays well with others too.

WirelessHART

Discover your plant’s limitless potential at [EmersonSmartWireless.com](http://EmersonSmartWireless.com)

EMERSON. CONSIDER IT SOLVED.
Avoid the number one pitfall of FOUNDATION fieldbus™ networks: All power and communications are vulnerable to a single broken twisted wire pair.

Designed for plant-critical fieldbus segments, TRUNKSAFE™ maintains all process communications without interruption, even if the network cable is broken or shorted.

With TRUNKSAFE, now you can take full advantage of fieldbus technology without worrying about simple cable failures.

FISCO — The Proven Live Working Environment
Technology is reliable, economical to install, and cost-effective to operate

Final Diagnostic Profiles Specification Completed
New specification builds upon robust fieldbus diagnostic features

Regional Roundup: Asia-Pacific
FOUNDATION fieldbus is recognized as the technology-of-choice
The Fieldbus Foundation conducted its 2009 General Assembly on March 4–5 in Yokohama, Japan. Held at the Pan Pacific Hotel, the event attracted a capacity crowd of FOUNDATION fieldbus end users, suppliers, system integrators, engineering firms and other industry stakeholders from around the world.
Leading engineering executive delivers keynote

Mr. Hideaki Miura, senior executive officer and general manager, Engineering Division, JGC Corporation, was the keynote speaker at the General Assembly. JGC Corporation first applied fieldbus technology in a pilot plant at its own laboratory in the late 1990s. Then, in 2000, JGC completed a small-scale FOUNDATION fieldbus application, as the first Japanese commercial installation, in a pharmaceutical facility. Since then, it has implemented a number of major FOUNDATION projects in the process industries, such as petrochemical, gas processing, refining, and alternative energy.

Mr. Miura’s keynote address offered valuable insights into the adoption of FOUNDATION technology and provided an authoritative perspective on the growth in operational intelligence.

Speakers describe current fieldbus installations

The General Assembly program included an overview of Fieldbus Foundation activities worldwide. The event was highlighted by presentations from FOUNDATION technology experts focused on process integrity, business intelligence, and open scalable integration. It also featured presentations by major end users who have installed FOUNDATION fieldbus in their industrial operations. The roster of end user speakers included: John Rezabek, ISP Corporation; Jasbir Singh, Essar Refinery Ltd.; Takuo Suzuki, Mitsubishi Chemical Engineering; and Bindert Douma, Shell Global Solutions.

The foundation conducted a press briefing for the automation industry media in attendance at the General Assembly. Fieldbus Foundation President and CEO Rich Timoney described the General Assembly as “an important global event supporting our technology.” He said, “FOUNDATION fieldbus has gained significant market share over the last several years and continues to grow at a very rapid pace. In these difficult economic times, leading-edge technologies such as FOUNDATION fieldbus provide a platform for reducing both CAPEX and OPEX. Reductions in time to calibrate, commission and startup are essential during the build phase of projects. Improved asset utilization, lower maintenance costs and tighter control translate into improved operating performance and enhanced competitiveness.”

Fieldbus Foundation staff members also provided updates on current FOUNDATION technology developments such as wireless implementation, safety solutions, field device integration, Electronic Device Description Language (EDDL) and field diagnostics.

Suppliers display latest product offerings

Fieldbus Foundation members showcased a wide range of FOUNDATION fieldbus products and services at the 2009 General Assembly. Companies took part in a tabletop exhibition, where they met one-on-one with end users interested in learning more about fieldbus technology.
2009 GENERAL ASSEMBLY . . . CONTINUED FROM PAGE 7

**Emerson Process Management**

Emerson Process Management demonstrated how Foundation fieldbus enables predictive maintenance and improves operations. With Foundation fieldbus 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. EDDL technology provides expanded visualization capabilities that are independent of specific device and host supplier’s implementations.

**MTL**

MTL generated a high level of interest in its groundbreaking redundant FISCO product. Based on the company’s existing products and large installed base, the FISCO solution is fully compliant with IEC 60079-27. It enables end users to take advantage of the benefits of a live-workable field network without the restrictions on segment loading and maximum cable length imposed by earlier IS techniques, including the ability to be used as a repeater. A mechanically linked Supply Arbitration Module and Power Conditioner unit ensures reliable operation of the H1 signal and allows for “hot” replacement of the unit at any time.

**Northwire**

Northwire showed its third-generation fieldbus cable designs, including 16 and 18 AWG, single- and multi-pair cables with alternate color, shielding and grounding; as well as easy-to-strip, round, smooth jackets for effortless installation in cable glands. All cables are ITC-ER (no need for conduit), meet/exceed FF-844 for “Type A,” Ex I, IS or nonincendive, to the same High Power Trunk and protect against short circuits; Advanced Diagnostic Modules, the only tool available today delivering automatic commissioning and report generation; and the industry’s only Remote IO system for Foundation fieldbus H1.

**R. STAHL**

R. STAHL displayed its unique 8-spur intrinsically-safe (IS) fieldbus barrier, which significantly reduces installation costs and space requirements. The company’s approved for Class I & II, Div. 2 locations, UL-listed ITC/PLTC-ER and CSA CMX-Outdoor-CMG-compliant. A dual-rated ITC and arctic-grade marine-shipboard (to -60° C) version is also offered.

**Pepperl+Fuchs**

Pepperl+Fuchs presented its complete range of FieldConnex solutions at the 2009 General Assembly. This included the PowerHub with redundant power supplies, which energizes the High Power Trunk; segment protectors and FieldBarriers, which connect instruments, whether Ex d, digital I/O coupler is an easy solution for integrating simple IS discrete input signals and IS solenoid valves into Foundation fieldbus H1 segments. Also, R. STAHL displayed the first HSE-RIO prototype system for explosive atmospheres.
Your Fieldbus Partner

FOUNDATION™ Technology for Devices and Host Systems

Exceptional quality and outstanding collaboration has convinced the majority of field device manufacturers to rely on Softing as their exclusive technology partner.

Flexible Solutions that Meet your Needs

- **Protocol Stacks**
  - Proven and certified
  - Modular and scalable architecture
  - Accelerates your time-to-market
- **Fieldbus ASIC UFC100-F1**
  - Executes time-critical operations directly
  - Low power consumption
  - Very high noise immunity
  - Economical option to replace existing silicon
- **Fieldbus Integration Board**
  - Flexible design assures easy integration
  - ATEX certified
  - On-board support for HART or serial

Contact us.

Softing AG  
Phone: +49 (89) 4 56 56 340  
info.automation@softing.com  
www.softing.com

Softing North America, Inc.  
Phone: +1 (978) 499 9650  
info.usa@softing.com  
www.softing.us

Truly integrated Control and Instrumentation... only from ABB

Only ABB delivers the extended automation functionality that gives you the visibility and control that you need to run your plant more efficiently—saving you precious time, resources and money.

Find out how truly integrated control and instrumentation can save you money...  
get your free copy of our white paper at www.abb.com/systrumentation
Fieldbus Host Registration Gains Momentum
First FOUNDATION fieldbus hosts complete registration process

The Fieldbus Foundation’s new Host Registration Program continues to gain momentum, with the first FOUNDATION fieldbus host systems passing its Host Profile Registration Process. The registered hosts include Yokogawa’s Stardom™ Network-based Control System and CENTUM® VP Integrated Production Control System, ABB’s System 800xA Extended Automation Product, and Emerson Process Management’s DeltaV™ Digital Automation System using AMS™ Suite Intelligent Device Manager.

The Fieldbus Foundation is one of the only automation industry organizations with a registration program requiring mandatory testing of critical elements of its technology. This effort now encompasses FOUNDATION fieldbus host systems and field devices, as well as physical layer components such as power supplies and device couplers.

Benefits for manufacturers and end users
The Fieldbus Foundation established its Host Registration Program as a key initiative benefiting the global automation industry. Under the registration process, fieldbus hosts successfully completing the test requirements are authorized to bear the official FOUNDATION product registration symbol. Hosts may include configuration tools, recording devices, alarm display panels, Human-Machines Interfaces (HMIs), or systems with a combination of functionality.

The foundation’s Host Registration Program benefits both automation suppliers and end users by providing a new level of consistency in a multi-vendor FOUNDATION fieldbus environment. Host registration advances the same robust interoperability and integration between different manufacturers’ host systems, and multiple devices, that the industry has enjoyed since 1998 in terms of device-to-device interoperability.

In addition, automation suppliers are now implementing host applications that employ enhanced Electronic Device Description Language (EDDL) features. EDDL is a universal interface to diagnostic, real-time and asset management information contained in millions of field instruments from the world’s leading automation manufacturers.

Enhanced EDDL allows users to interact with their devices in new ways, including improved data visualization and display capabilities like waveforms and valve signatures, a standardized method to access historic measurement or device performance information and enhanced tools for high-level information (such as algorithmic relationships for complex device parameters) display and use in control systems.
Understanding the registration process

The Fieldbus Foundation’s previous Host Interoperability Support Test (HIST) provided a host test protocol, and the host vendor chose the implementation. This program has evolved to a comprehensive Host Profile Registration Process, in which the foundation conducts functional testing with a test device and specialized Device Descriptions (DDs) and Capabilities Files (CFs). The host profile under test must support a clear set of required features.

Thanks to the host registration program, host suppliers now have access to standardized test requirements and test cases for all hosts within a profile tested to the same requirements; standardized DD and CF files assuring hosts can parse files; and standardized test devices for all basic I/O function blocks and specialized test transducer blocks.

Fieldbus Foundation President and CEO Rich Timoney called the initial host registrations an “important milestone” in the growth and implementation of FOUNDATION fieldbus. He said, “Host registration provides an extra measure of confidence that fieldbus systems incorporate the robust functionality of FOUNDATION technology and are able to function as part of an open, interoperable control system. The Host Profile Registration Process is another example of the Fieldbus Foundation’s commitment to full interoperability, and seamless integration, within a fieldbus environment.”

Within the Fieldbus Foundation’s automation infrastructure, interoperability is made possible by the fact that devices and software must conform to the same standard. Products bearing the FOUNDATION Product Registration symbol have undergone a series of common tests audited by the Fieldbus Foundation. End users can select the best device for a specific measurement or control task, regardless of the manufacturer.

Host suppliers praise registration effort

Both the Yokogawa Stardom and CENTUM VP hosts were tested as Class 61a (Integrated Host) defined in FF-569 Rev. 2 (Host Interoperability Support Test and Procedures Revision 2.0), and audited to comply with all requirements for registration. Yokogawa will offer interoperability testing for third-party devices with its registered hosts to improve confidence of interoperability for end users.

Amit Ajmeri, consultant – FF & Asset Management Solutions, Yokogawa Corporation of America, commented, “Yokogawa is very pleased to be one of the first companies to complete the host profile registration process for the CENTUM VP Integrated Control System and Stardom Network-based Control System. Yokogawa continues its commitment to support FOUNDATION fieldbus technology and promote the solution by demonstrating interoperability and compliance to the updated FOUNDATION requirements.”

In addition to being among the first to have a registered host system for FOUNDATION fieldbus in 2009, this year is also the 30th anniversary for ABB in safety. The same controller platform that provides integrated FOUNDATION fieldbus solutions, also now provides a SIL3 (TÜV) dual/quad configuration offering for integrated safety solutions. One platform and system can now provide a complete solution integrating conventional process control, FOUNDATION fieldbus, and SIL safety control.

Mark Taft, ABB’s group vice president, Global Sales & Marketing, Control Systems Business, Process Automation Division, said, “Being among the first of the automation suppliers to complete the most recent Host Profile Registration Process is just one more indication to end users that ABB is serious about delivering products and solutions that the industrial users demand and can benefit from. As indicated by the statements from the foundation, this process was established by the End User Advisory Council, not by the product manufacturers. Finally, the end users can reasonanly evaluate solutions in a consistent way rather than trying to make sense of supported features and functions from the previous HIST methods.”

John Berra, chairman of Emerson Process Management, remarked, “We congratulate the Fieldbus Foundation for advancing its host testing into a complete registration program, and we are pleased that our DeltaV system with AMS Device Manager is one of the first registered hosts. Open interoperability continues to be a clear win for our customers, and always part of our practice. The requirement of host registration, and the facilities and resources to carry it out, will support further growth of FOUNDATION technology. As an example, the new registration includes host applications like our DeltaV system with AMS Suite that use enhanced Electronic Device Description Language (EDDL) to provide exceptional and consistent presentation of real-time, diagnostic, and asset management information as supported by all registered FOUNDATION fieldbus products.”

A list of all registered FOUNDATION fieldbus products is available at www.fieldbus.org/registered.
FDI: Why It’s Important to Industrial Automation

Industry seeks common solution for field device integration

Major control equipment suppliers and user organizations are cooperating on a Field Device Integration (FDI) framework that will support the growth of intelligent instrumentation technology around the world. The basis for the FDI technology was developed at the “itm” Institute of Munich’s Technical University and was first presented to the public at the NAMUR (International User Association of Automation Technology in Process Industries) 2006 Annual General Meeting under the name FDD UA.
The Steering Committee of the EDDL Cooperation Team (ECT), in close cooperation with the FDT Group, is seeking a common solution for FDI, with a number of development milestones already having been achieved. The FDI team has worked to identify use cases encompassing all facets of plant operations: from startup and commissioning to ongoing maintenance activities and plant operations. The team’s efforts have also included drafting an architecture concept that meets the needs of each technology as they are migrated to a common standard.

The historic ECT/FDT agreement on FDI incorporates the best aspects of the EDDL and FDT solutions, and eliminates redundancies where they may exist. It also does away with double efforts for customers and vendors, and preserves backward compatibility and operating system independence.

Ultimately, FDI will ensure compatibility with existing Electronic Device Description Language (EDDL)-based and Device Type Manager (DTM)-based Device Descriptions (DDs). The solution will be applicable to any field device communication technology, as well as all hierarchical and heterogeneous network topologies.

History of joint development effort

In 2003, the industry’s three leading field device foundations, Fieldbus Foundation, HART Communication Foundation and Profieldus Nutzerorganization, signed a cooperative agreement to develop a common specification for graphical visualization and persistent data storage enabled by EDDL. All three of the organizations utilize EDDs for parameterization and description of their devices.

In 2004, OPC joined the cooperation team. With EDDL an established IEC standard, it made sense for the OPC group to base its data structure on the same standard, and to work with the other organizations to develop a standard interface to the Unified Archi-
Environmental response, meet fiscal responsibility.

LISTEN. Sustainable production. It’s the business model for heavy industry. We can help.

THINK. Our PlantPAx® process control, process safety systems, and power and energy management solutions help you maximize operations — and environmental response. You’ll save on energy use, reduce waste, and improve emissions compliance. You’ll spend less time managing operations and more time managing innovation. What better way to sustain your business? For an example of how we help natural resource-driven industries, download a biodiesel customer success story.

discover.rockwellautomation.com/go/thinkingprocess.

SOLVE. Major suppliers support integration effort

Both the draft FDI architecture concept and the complete inventory of use case analyses have been completed due to close collaboration among key global process control suppliers, including ABB, Emerson, Invensys, Rockwell Automation, Siemens, and Yokogawa.

In addition, many of the leading fieldbus device and component suppliers are supporting FDI through their product R&D.

Final specifications coming soon

Current FDI efforts are focused on completing two remaining documents. The first is a functional specification detailing how the benefits of EDDL, FDT, and the OPC Unified Architecture will be combined. The second will be a comprehensive technical specification. Release of the final functional specification is planned for the middle of 2010.

architecture. The four organizations signed an agreement in 2004 to cooperate in the development of that interface.

In April 2006, the FDT Group joined the ECT on the basis of a technical agreement to jointly develop a new common standard for device integration. The Steering Committee is comprised of the presidents of each foundation, plus one representative from each organization’s membership. Hans-Georg Kumpfmüller is chairman of the committee.

Fieldbus Foundation president and CEO Rich Timoney praised the joint ECT/FDT development work. “The FDI project is a key priority for the global automation community, which is implementing intelligent instrumentation technology at a growing pace at plants and factories around the world,” said Timoney. “Working together, major control equipment suppliers and user organizations are developing a device integration framework that will meet the requirements of diverse industry stakeholders.”
FOUNDATION for SIF Program Marks Progress

Process plants prepare to implement groundbreaking safety protocol

The Fieldbus Foundation's FOUNDATION for Safety Instrumented Functions (SIF) program continues to gain support among automation equipment suppliers and end users anxious to extend the benefits of fieldbus technology, including reduced CAPEX and OPEX, into plant safety systems and field devices.

FOUNDATION fieldbus, with its industry-proven distributed function blocks and open communications protocol, is an ideal platform for advancing standards-based SIFs. The FOUNDATION for SIF protocol was approved by TÜV Anlagentechnik GmbH to meet the requirements of IEC 61508 up to, and including, Safety Integrity Level (SIL) 3. Major automation equipment suppliers support FOUNDATION for SIF technology because they can market open, interoperable fieldbus devices instead of being limited to proprietary safety system platforms. End users support the project because they can choose best-in-class safety instruments from the suppliers of their choice, just like they currently enjoy for non-safety devices.

The Fieldbus Foundation’s director of technology development, Dave Glanzer, indicated FOUNDATION SIF technology will help end users optimize safety applications ranging from overpressure, backflow and reactor temperature run-away protection, to liquid carry-over and burner flame-out protection and emergency isolation valves (EIVs).

Glanzer said, “Using FOUNDATION SIF, diagnostics are communicated directly to the logic solver. Self-diagnostics in the field devices can alert operations that the SIF is operating in a degraded state. The diagnostics improve overall loop safety because the possibility of undetected, dangerous failures between manual tests is reduced. This information can be used to make improvements in the system and procedures to reduce the trip rate. The diagnostics and reduced trip rate greatly improve OPEX.”

End users stage field demonstrations

To support the implementation of FOUNDATION for SIF, field demonstrations of the technology have been staged at Shell Global Solutions, Amsterdam, The Netherlands; Saudi Aramco, Dhahran, Saudi Arabia; BP, Gelsenkirchen, Germany; and Chevron, Houston, Texas, USA. The purpose of these live demos was to evaluate FOUNDATION fieldbus-enabled safety valves with Partial Stroke Testing (PST) capability, as well as various pressure, level, temperature and diagnostic devices. The demos also evaluated FOUNDATION SIF technology will allow end users to reduce their Total Cost of Ownership (TCO) by extending fieldbus benefits into plant safety systems.
Leading process end users such as Shell Global Solutions, Amsterdam, The Netherlands, have conducted live demos of Foundation SIF technology.


In the white paper, Larry O’Brien, ARC Advisory Group’s research director – process automation, describes how Foundation SIF is a critical part of the Foundation automation infrastructure allowing end users to reduce their Total Cost of Ownership (TCO) by deploying robust fieldbus capabilities in plant safety systems.

“It is very clear that end users want this technology and are striving to include FF-SIF systems in their project specifications,” said O’Brien. “Many major end users will probably be specifying FF-SIF systems for their new projects starting in 2011.”

The white paper reviews the history and development path of Foundation SIF technology, and discusses SIF product registration, conformance to international standards, diagnostics functions and benefits, and future challenges. It also outlines key advantages of Foundation SIF at the safety system layer.

According to O’Brien, “The FF-SIF protocol has already received TÜV approval, and suppliers are going to start submitting their products for TÜV approval over the next year. This means that we should see actual products that are certified by TÜV available commercially some time in 2010.”

Device developer solutions now available

The Fieldbus Foundation recently announced new device development solutions for its Foundation for SIF technology. The latest SIF release includes the Foundation for SIF final Technical Specification package (now available, for the first time, to both foundation members and non-members), SIF Interoperability Test Kit (ITK), and updated DD Library with SIF function blocks. These solutions support development of interoperable SIF devices for use in a wide range of industrial plant SIF applications.

According to the Fieldbus Foundation’s product manager – fieldbus products, Stephen Mitschke, leading automation equipment suppliers are designing a variety of devices to meet the growing market demand for fieldbus-based SIFs. “Our developer resources ensure the interoperability of fieldbus equipment in modern safety systems,” he said. “Certifying agencies such as TÜV then provide certification for use of the equipment in Safety Instrumented Systems.”

The new Foundation for SIF technical specification defines analog input (AI) blocks for fieldbus transmitters and other SIF devices. Future updates to the specification will include digital output (DO) blocks. Within Foundation technology, function blocks contain the information needed for online control functions. Device Description (DD) and Capability Files (CF) provide additional information required for configuration and display purposes.

The Foundation for SIF ITK 1.0 is an excellent tool for troubleshooting and debugging devices, and provides all hardware and software required to ensure a manufacturer’s complete device interoperability as specified by the Fieldbus Foundation’s official registration testing procedure. By using the test kit, device developers can run tests identical to those used by the foundation before submitting their device for registration.

The Foundation for SIF ITK includes a host of test cases verifying the functionality of a fieldbus device and its conformance with the Foundation fieldbus function block and transducer block specifications. It also incorporates a DD “Super Viewer”
allowing examination and verification of a device's DD, and a conformance test procedure for the Physical Layer. The DD Super Viewer supports validation of existing DDs and the new DD 5.1 format. Device developers can walk their DD, execute methods, and render visualization elements supported by the new DD 5.1 technology. As additional standard function blocks become available, the ITK will be upgraded with new test cases to verify these expanded implementations.

The Foundation DD Library (Version 3.4) has been updated to include standard Device Description Language (DDL) code for new SIF blocks. With this DD subscription service, device developers now have access to a template DDL that makes it easier and less time-consuming to develop DDs to the Foundation fieldbus specification.

Leading suppliers get involved


Emerson Process Management, among other project participants, has been a leading contributor to the development of the draft FF-SIS specifications. Emerson also participated in the various end user demonstration projects and is actively involved in developing smart SIF devices. In addition, physical layer suppliers like MTL have developed solutions ensuring SIF networks deliver the highest levels of availability. MTL’s F800 redundant fieldbus power supply, Megablock wiring components, and F809F fieldbus diagnostic modules were utilized at the trial sites by BP, Chevron, Saudi Aramco and Shell.

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.
The Fieldbus Foundation has announced plans to conduct a series of end user demonstrations of its wireless and remote I/O (WIO) developments. The live technology demos will show how new wireless and remote I/O solutions tighten the integration of process instrumentation with the FOUNDATION automation infrastructure.
The list of WIO end user demonstration sites includes: United States, The Netherlands, Brazil, Canada and Japan.

The foundation’s WIO development project involves suppliers of plant automation equipment from around the world. The project is intended to develop use cases and requirements for High Speed Ethernet (HSE) remote and wireless communications in monitoring and control that are interoperable using function blocks and Electronic Device Description Language (EDDL). This encompasses solutions using FOUNDATION fieldbus and wireless technologies developed in accordance with the ISA100 standard and work of the International Electrotechnical Commission (IEC).

Fieldbus Foundation Director of Technology Development Dave Glanzer said, “We are pleased with the progress of our WIO project and the support it has received from the industrial automation industry. WIO developments promise to advance the utilization of an open, interoperable fieldbus automation infrastructure incorporating both HSE and industrial wireless applications.”

Glanzer indicated that the WIO project teams, including an HSE Remote I/O (RIO) team, HSE Backhaul team and Wireless Sensor team, are responsible for developing device interoperability and network configuration solutions, validation of technical specifications, and interoperability test and registration procedures.

In October 2008, the Fieldbus Foundation and ISA announced an agreement to facilitate the implementation of wireless backhaul transport networks. This technology initiative is based on shared interests in serving the needs of end users and suppliers of wireless systems in industrial automation.

ISA100 leaders established a new working group, ISA100.15 — Wireless Backhaul Networks Working Group — to develop and maintain a standard to address one or more dedicated or shared wireless backhauls to support technologies running multiple applications. The first of these backbones will be the Fieldbus Foundation’s HSE implementation.

WIO project participants include: ABB, Aniotek, APAT, Apprion, Chevron, Emerson Process Management, Endress+Hauser, Festo, Flexworks Solutions, Hodson Consulting, Honeywell Process Solutions, MaCT, MTL, OMNEX Control Systems, Pepperl+Fuchs, Phoenix Contact, R. STAHL, RuggedCom, Sense-Comm Technology, Shell Global Solutions, Siemens, Smar, Softing, Turck, Westlock Controls, Yamatake and Yokogawa.

Like other automation suppliers, R. STAHL has taken an active role in the WIO project by donating its equipment and expertise to help facilitate the end user demonstrations. For example, R. STAHL’s IS1 remote I/O system, designed for installation in Zone 1 explosive atmospheres, is already available with explosion-protected Ethernet/Modbus TCP communication via fiber optics. The company has now integrated the FOUNDATION HSE protocol in its remote I/O solution for use by the WIO validation team.
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 C22.2-2006.
- **Versatile**—New dual-rated ITC and Marine-Shipboard versions are Arctic Grade Extreme—suitable for applications to -60°C.

**FREE SAMPLE!**
+1 715-294-2121
cableinfo@northwire.com
www.northwire.com/bus

© 2009 Northwire, Inc. All rights reserved.

---

**BREAK AWAY from the Brick**

**Introducing flexible expandability for fieldbus segment protection**

Now it's easier than ever to expand Foundation Fieldbus and PROFIBUS PA with the new, modular Process Fieldbus Infrastructure System from Phoenix Contact.

While other fieldbus infrastructure systems are rigid and make expansion difficult, our breakthrough technology makes additions simple — never over-engineer your system again. Just design to your current needs and expand with ease using this modular approach.

With our Process Fieldbus Infrastructure System, you get:

- **Hot-swappability** — Expand your system without disrupting communication
- **Pluggable Termination** — For error-free mechanical termination
- **Modularity** — Save space and lose the brick

For more information or to specify modular segment protection on your next fieldbus project call 1-800-372-3725 or visit www.phoenixcontact.com/fieldbus

© 2009 PHOENIX CONTACT
End User Seminars Focus on Operational Excellence

Attendees learn about economic benefits of FOUNDATION architecture

Automation end users, system integrators, and engineers can attend free fieldbus educational seminars at various locations throughout North America during 2009. These events, based on the theme “Achieving Operational Excellence with FOUNDATION Technology,” address the economic benefits of the FOUNDATION automation architecture.

Specific seminar topics include:
- Open, Scalable Integration / Segment Design and Layout
- Process Integrity / SIL and SIF
- Business Intelligence / Maintenance and Troubleshooting

According to Fieldbus Foundation Marketing Manager Bill Tatum, the 2009 seminar program has attracted standing-room attendance at initial events held in Coatzacoalcos, Mexico (180 attendees) and Baton Rouge, Louisiana (90 attendees). “Due to today’s challenging economic conditions, this is an ideal time for plant personnel to obtain training in FOUNDATION fieldbus,” said Tatum. “With the current slowdown, plant workers may be free to receive instruction on new, advanced automation solutions such as fieldbus. Our seminars explain the latest development in FOUNDATION technology, including field diagnostics and host registration, enabling industrial operations to achieve operational excellence through increased efficiency, improved asset management, reduced downtime and expanded throughput.”

Tatum believes the seminar program provides an invaluable learning experience for those considering the adoption of a fieldbus-based control solution. “The seminars were developed to provide a hands-on environment where attendees have interaction with real fieldbus equipment, and can speak directly with recognized FOUNDATION technology experts. We also encourage open discussion of fieldbus implementation issues.”

The FOUNDATION fieldbus educational seminars count for Professional Development Hours (PDH), and lunch is included for all attendees.

The remaining 2009 seminar schedule includes:
- Oct. 15 – Long Beach, CA
- Nov. 3 – Pasadena, TX
- Nov. 5 – Houston, TX

For more information, or to register for an upcoming seminar, please visit the Fieldbus Foundation’s website at www.fieldbus.org.
FISCO — The Proven Live Working Environment

Technology is reliable, economical to install, and cost-effective to operate.

Fieldbus systems require utmost reliability, and because the devices must be connected to a working network for maintenance, “live working” is also a necessity. Intrinsic Safety (IS) and its enhancements, such as FISCO, are proven technology for live working under any conditions and are recognized by the IEC as well as the Fieldbus Foundation for this purpose.
History and “how it works”

Since its introduction in 1996, FOUNDATION fieldbus H1 has supported physical layer profiles for IS systems using the “Entity” model included in the international IEC 61158 fieldbus standard. The Entity model assumes “passive” electronics to determine the acceptable circuit parameters for limiting power in hazardous areas. Because the entity model has limited power capability, in the range of 80 mA, alternatives were investigated. The result was the FISCO (Fieldbus Intrinsically Safe CONcept) model, developed by Physikalisch-Technische Bundesanstalt (PTB) based in Braunschweig, Germany. The FISCO model was developed in accordance with CENELEC and IEC 1158-2 guidelines and is based on a series of experiments on fieldbus networks in a variety of gaseous environments.

The Fieldbus Foundation announced at Interkama 2001 that the FISCO physical layer profile specification was added to the FF-816 Physical Layer specifications. Because FISCO is based on actual laboratory tests — rather than theory — the standard is restricted to the actual conditions that have been tested, which means the maximum overall cable length is limited to: 1900 meters for Gas Group IIB (North America Gas Group A, B); and maximum spur lengths of 60 meters. However, this limitation for Gas Group IIC is not restrictive because relatively few installations are of this gas group and most do not require total cable lengths in excess of 1,000 meters. If longer distances are required, FISCO supports cable lengths in excess of 1,000 meters. However, due to recent technical advances, this limitation has now been overcome.

The output of the power supply modules complies with the FISCO model, in accordance with IEC standard 60079-27 Edition 2.0 (2008). As described in FF-816, the key advantages of FISCO over earlier Entity model installations are higher available power, allowing the development of a high current output FISCO power supply. The output current available from typical FISCO power supplies can be as high as 265 mA in Gas Group IIB (North America Gas Group C, D) and 120 mA IIC (North America Gas Group A, B), which allows more heavily loaded segments than is possible with the Entity model.

As a fully intrinsically safe solution, FISCO allows live working of both the fieldbus trunk and spurs in the same way as a point-to-point IS installation. To achieve this, the energy in the trunk is limited and the voltage level is typically in the range of 13–15 volts at the power supply output terminals. This is in large part why the total cable length for FISCO is reduced as compared to either a conventional power supply or High Energy Trunk and fieldbus barrier solution. Figure 1 at the right shows this difference in a simplified block diagram.

With the FISCO solution, the IS circuitry is combined with the power conditioning circuits in the power supply, typically mounted in the clean environment of the control room. Very similar IS circuitry is incorporated in the fieldbus barrier, which is mounted in the hazardous area, and is therefore subject to temperature and other atmospheric hazards (humidity, corrosive gases, etc.) not normally experienced in the control room environment. The experience is that fieldbus systems with non-redundant FISCO power supplies offer similar levels of availability to redundant power supplies used with non-redundant fieldbus barrier modules.

Because FISCO is a fully open technology, the power supplies from one company can be used with the field device coupler from any other manufacturer, provided the device coupler is IS/FISCO certified. One of the “complaints” with FISCO has been that it cannot be purchased as a redundant system, like conventional fieldbus power supplies. However, due to recent technical advances, this limitation has now been overcome.

Redundancy

In a typical redundant system, a pair of pluggable FISCO power supply modules powers each fieldbus segment. As shown in Figure 2, each pair of modules operates in active/hot standby mode, ensuring that the fieldbus segments are continually powered. In the event of a failure of an active power supply module, the field circuit is automatically transferred to the standby module. The change-over is managed by Supply Arbitration Modules (SAMs), which monitor the health of the FISCO power supplies while maintaining intrinsic safety requirements during the transition to the standby module. The SAMs are also duplicated and replaceable, meaning that there are no non-redundant system components.

Switch-over is achieved rapidly and in accordance with FOUNDATION fieldbus specifications, and without risk of losing fieldbus devices from the bus while retaining full compliance with the IEC standard requirement of a single power supply connected to a segment at any one time.

Conclusion

FISCO is a proven technology recognized around the world by the appropriate IEC standard and national regulatory bodies for applications in Zone 1 (Class I, Division 1) hazardous areas. The result is a system that is economical to install, highly reliable and supportive of live working, thus making it economical to operate, while providing the full benefits of FOUNDATION fieldbus solutions in all conditions. FISCO is proven, reliable and economical, which are certainly preconditions to success.
Final Diagnostic Profiles Specification Completed

New specification builds upon robust fieldbus diagnostic features

The Fieldbus Foundation has released the final FOUNDATION fieldbus Diagnostic Profiles Specification. Based on guidelines established by the NAMUR Working Group 2.6, this 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.
Thanks to the Foundation field diagnostics solution, which makes asset maintenance “smarter,” automation end users can advance beyond reactive, preventive and predictive maintenance techniques and implement proactive strategies whereby equipment maintenance schedules are based on built-in asset diagnostics. They can also achieve opportunity-based maintenance — a combination of proactive maintenance along with special events (e.g., shutdown).

Industry cooperation enables technology enhancements

Beginning in May 2006, the Fieldbus Foundation and NAMUR, an international user association for automation technology in the process industries, collaborated on enhancements to Foundation technology, which improved its usability. 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 on the user’s requirements. According to NE107, plant operators should only see status signals, with detailed information viewable by device specialists.

Specific goals for the field diagnostics project included:
- Common view of instrument-specific diagnostics
- Common configuration environment
- Extensibility
- Leverage of existing “push” technologies (e.g., alerts and alarms)
- Flexible configuration to meet user applications
- Simulation for FAT/SAT activities
- Ease of understanding and implementation
- Adoption by system and instrument vendors

Using the power of Foundation fieldbus, and considering the NAMUR NE107 recommendations for diagnostic profiles support, the Fieldbus Foundation developed a profiles specification enhancing organization and integration of device diagnostics within Foundation fieldbus systems. The specification will also help ensure future fieldbus devices are consistent with NAMUR guidelines.

Stephen Mitschke, Fieldbus Foundation manager – fieldbus products, commented, “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. Users will benefit from our collaboration thanks to easier diagnostic configuration, greater application flexibility, and fewer spurious alarms.”

New specification identifies “role-based” diagnostics

The Foundation fieldbus 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. For example, critical diagnostics that may result in loss of operation can be directed to operations personnel, whereas less critical maintenance information can be directed toward maintenance personnel. Each diagnostic in the device can be configured independently based on its application.

A copy of the Foundation fieldbus Diagnostic Profiles Specification is available to Fieldbus Foundation members on “Fieldbus Forums” (http://forums.fieldbus.org) under “Member Forums — New Specification Forum.”

Field Diagnostics FAQ

Q: Why is field diagnostics important?
A: Field diagnostics can dramatically change how alerts and messages are viewed at your facility. Field diagnostics is a way of standardizing how all of the devices communicate regardless of vendor. The right message will be delivered to the right person, at the right time, so not only will you get the same great detailed information, but you can do so in a categorized manner that makes information easier to assess and act upon.

Q: How is field diagnostics different than the diagnostics already offered by today’s devices?
A: Every fieldbus device had standard diagnostics capabilities that have been built into the specification since the beginning. For example, every block has a standard block alarm parameter providing 16 standardized diagnostic conditions. Even data quality, a part of every process variable, provides diagnostic information.

Field Diagnostics addresses the device-specific diagnostics. Instead of each vendor implementing custom parameter names and behavior, the device vendors use the common parameter and alarm names to implement the conditions supported by their device. This supports common tools and engineering procedures, which will reduce costs and deliver actionable diagnostics to the user.

Q: What are the benefits of field diagnostics?
A: The largest benefit is that the new technology implements role-based diagnostics, meaning the right information is sent to the appropriate person — when it is needed. The new system of push diagnostics rather than pull diagnostics allows the user to receive alerts much quicker and to the right people, instead of having to go and request the information from the devices. Field diagnostics can be used to send alerts to specific individuals for whom the message is pertinent. The diagnostic alarms fall into four categories: Failure, Out of Specification, Maintenance and Function Check. Field diagnostics also allows the user to map alerts (in any of the four categories) based on the particular device situation and its importance to the overall production line. This, in turn, builds a standardized diagnostic system across all sorts of devices and creates a common way to structure, filter and deliver diagnostics to its controllers.

Q: How can I use this technology at my company?
A: Field diagnostics technology will enhance user control and distribution of messages between field devices. It will allow for faster response times as each message is delivered to the correct person at the correct time. The role-based diagnostics will also save time and energy that would otherwise be spent redistributing alerts to their correct counterparts.

Q: When will field diagnostics be available?
A: Specifications and diagnostic tools are available now. Field diagnostics device registration is offered today with ITK 5.1; field diagnostics will be mandatory for new device registrations starting with ITK 6.0 in 3Q 2010 (estimated release date). Field diagnostics support will also be required for new host registrations at that time.

Q: Will field diagnostics be supported by my current system?
A: The Field Diagnostics specification was defined to allow any EDD-based system to access and configure the diagnostics in fieldbus devices. However, system updates will provide more extensive integration capabilities (such as Wizards for configuration) that will enhance diagnostics performance.

Q: How can I tell if my devices will support field diagnostics?
A: A device that passes ITK 5.1 and supports the Field Diagnostics Profile will have this feature separately listed on the registration certificate. The feature will also be listed in the registered product catalogue at www.fieldbus.org.

Q: What are the founding reasons behind the creation of field diagnostics?
A: The Fieldbus Foundation, in collaboration with NAMUR, created guidelines based on end user requirements in order to make diagnostic configurations easier and allow for greater application flexibility and control.
for greater application flexibility and control. End users required a more flexible, standardized way of communicating between devices.

Q: How is the Field Diagnostics Profile structured?
A: Individual device vendors will define which diagnostics will be available on their device, and then the user can modify these diagnostics based on his/her process requirements. Each device comes with a default mapping of the field diagnostics developed by the supplier. Diagnostic conditions that are active will have a recommended course of action.

Q: Who benefits from the implementation of this system?
A: Field diagnostics will benefit a wide range of automation stakeholders, including process engineers, maintenance technicians, and plant operators. Ultimately, plant management will realize improved process performance, greater reliability, increased uptime, and lower operating costs.

Q: Will this system impact the bottom line?
A: Field diagnostics is a significant enhancement to the industry-standard FOUNDATION fieldbus solution. This technology delivers open, scalable integration; process integrity; and business intelligence. It meets the market’s need for a tightly integrated automation infrastructure enabling plants and factories to realize CAPEX and OPEX advantages. In other words, it is a technology with a business purpose.
Regional Roundup: Asia-Pacific

*FOUNDATION fieldbus is recognized as the technology-of-choice*

From the petrochemical plants of China to offshore platforms along the Pacific Rim, *FOUNDATION technology* is improving the business results of industrial end users throughout the Asia-Pacific region — and around the world.

This issue of *Fieldbus Report* includes a roundup of current *FOUNDATION fieldbus* installation activity in rapidly expanding Asia-Pacific markets.

**PTT Aromatics and Refining Public Company Ltd.**

PTT Aromatics and Refining Public Company Limited (PTTAR) and its principal construction contractors selected Emerson Process Management to provide PlantWeb® digital architecture using *FOUNDATION fieldbus* for an aromatics plant under construction in Rayong Province, Thailand. PTTAR expects the Emerson solution to help increase its production capacity to 1.1 million tons per year.

**Mitsubishi Chemical**

In light of the unique certification of electrical equipment in Japan, MTL took a flexible approach with Mitsubishi Chemical Industry Japan on their new polyethylene plant. The resulting solution used a variety of field junction boxes containing Megablocks in Ex e or Ex d protection in compliance with Japanese standards. To minimize the impact of migrating from analog to digital technology, the system used eight segment power conditioners with on-line diagnostics.

**Zhejiang Changxing Glass Co., Ltd., Zhejiang Pinghu Glass Co.**

Emerson Process Management has been selected by the Zhejiang Changxing Glass Co., Ltd. and the Zhejiang Pinghu Glass Co., Ltd. to engineer and install PlantWeb® digital architecture with DeltaV™ automation systems and Emerson’s intelligent field devices in new glass plants in the Zhejiang Province. The projects will be the first for plant-wide use of *FOUNDATION fieldbus* in China’s glass industry.

**CNOOC**

*FOUNDATION fieldbus* represents 27 percent (3,000 segments) of the approximately 60,000 control system I/O points at the CNOOC and Shell Petrochemicals Company Petrochemical complex in China. The MTL FPS Fieldbus Power Conditioner, Megablock and terminator have been key contributors to reliable, stable operation at the CNOOC facility, which is one of the world’s largest fieldbus projects.

**Huaneng Group**

The Huaneng Group has awarded Emerson Process Management a contract to apply its PlantWeb® digital plant architecture at Haimen, a new ultra-supercritical, coal-fired power plant being built in China’s Guangdong province. The new plant will employ digital bus technologies, an approach proven to result in significant construction savings as well as ongoing operational savings for power generating facilities.
SMART PRESSURE MEASUREMENT WITH ENDRESS+HAUSER

- Cerabar S and Deltabar S for pressure/differential pressure, level and flow
- Deltapilot S for hydrostatic level measurement
- Totalizer for flow measurement
- Comprehensive diagnosis information
- Output limit and sensor alarming

ENDRESS+HAUSER
www.products.endress.com/pressure

FREE FIELDBUS JARGON BUSTER
If you mix up HIST and host, can’t tell a chicken foot from a backbone, or wonder what Kermit has to do with fieldbus technology, then the ABB Fieldbus Jargon Buster is the publication for you. It contains a clear explanation of dozens of fieldbus technical terms and can be downloaded from the web address below.

ABB
http://instrumentation.request-center.com/8

WHITE PAPER GIVES FIELDBUS BASICS

MooreHawke, a division of Moore Industries-International, Inc., has released a 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 the web address below.

MOORE HAWKE
www.minet.com/moorehawke

EJX MULTIVARIABLE TRANSMITTER

The EJX multivariable transmitter precisely measures differential pressure, static pressure, and process temperature, and has dynamic mass flow calculation based on full compensation by these measurement values. Dynamic flow compensation allows the EJX multivariable transmitter to eliminate errors in the differential flow calculations and to optimize the flow.

Other key features for Foundation fieldbus include the following:

- Advanced diagnostic — The multi-sensing technology provides the advanced diagnostic function to detect such abnormalities as an impulse line blockage or heat trace breakage.
- 10 variables display on LCD — Up to 10 process variables and inputs from other devices are cyclically displayed.

The transmitter, with a maximum working pressure of 32 MPa, is also ideal for high pressure applications.

YOKOGAWA
http://www.yokogawa.com/fld/PRESSURE/EJX/
fld-ejx-group-01en.htm

EMERSON ANNOUNCES NEW CONTROL MODULE TO EXPAND THE APPLICATION SCOPE OF FieldQ™ ACTUATORS AND CONTROLS

Emerson Process Management announces a new FieldQ™ control module for use in conventionally wired applications. The new module significantly expands the application scope and scalability of the FieldQ range of fully integrated pneumatic actuators and controls for on/off and modulating control valves. FieldQ now covers multiple applications from simple switching to high end buses with diagnostic capability.

The new module enables on/off control and provides all the FieldQ benefits of a field proven, rack and pinion pneumatic actuator with controls, in a compact, reliable and robust, modular package. The FieldQ integrated solution is suitable for both new and retrofit installation. The “plug and play” control modules provide an easy upgrade path to a Smart module, which features integrated local On/Off controls and Status/Position LEDs or bus control, providing feedback and advanced diagnostics.

EMERSON PROCESS MANAGEMENT
www.emersonprocess.com/
valveautomation/fieldq/

WHITE PAPER GIVES FIELDBUS BASICS

MooreHawke, a division of Moore Industries-International, Inc., has released a 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 the web address below.

MOORE HAWKE
www.minet.com/moorehawke

EMERSON ANNOUNCES NEW CONTROL MODULE TO EXPAND THE APPLICATION SCOPE OF FieldQ™ ACTUATORS AND CONTROLS

Emerson Process Management announces a new FieldQ™ control module for use in conventionally wired applications. The new module significantly expands the application scope and scalability of the FieldQ range of fully integrated pneumatic actuators and controls for on/off and modulating control valves. FieldQ now covers multiple applications from simple switching to high end buses with diagnostic capability.

The new module enables on/off control and provides all the FieldQ benefits of a field proven, rack and pinion pneumatic actuator with controls, in a compact, reliable and robust, modular package. The FieldQ integrated solution is suitable for both new and retrofit installation. The “plug and play” control modules provide an easy upgrade path to a Smart module, which features integrated local On/Off controls and Status/Position LEDs or bus control, providing feedback and advanced diagnostics.

EMERSON PROCESS MANAGEMENT
www.emersonprocess.com/
valveautomation/fieldq/
NEW MTL FIELDBUS COMPONENTS

Whether you are planning your first fieldbus project or your 20th, 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
- Fieldbus Barriers

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

DATACELL FOUNDATION FIELDBUS CABLE FOR H1 NETWORKS

Northwire’s third-generation designs include 16 and 18 AWG, single- and multi-pair cables with alternate color, shielding and grounding; and easy-to-strip, round, smooth jackets 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-shipline (to -60°C) version offered.

Complimentary Sample! Call 1-715-294-2121 or 1-800-468-1576.

NORTHWIRE  www.northwire.com/buscable

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 Profinet-PA installations that can be used in Zone 2/Class 1, Div. 2 areas. The Mobile ADM creates a visual picture of the fieldbus communication signal to facilitate faster commissioning work and easy, efficient troubleshooting. Diagnostic data is easily integrated directly into DCS/PLC device configuration and asset management tools. For more information, call (330) 486-0002 or e-mail sales@us.pepperl-fuchs.com.

PEPPERL+FUCHS  www.fieldconnex.info

ROCKWELL AUTOMATION INTRODUCES THE PlantPax PROCESS AUTOMATION SYSTEM TO AWARDS

Rockwell Automation is delivering a unified automation control platform that delivers unmatched capabilities for process and other plant-wide applications, culminating with the PlantPax Process Automation System which features full support of Foundation fieldbus technology. After the results of this year’s CONTROL Magazine Readers’ Choice Awards, it’s evident that the pros recognize the performance and reduced costs this unified platform provides. The Rockwell system scored a total of 31 first place Readers’ Choice finishes. The company’s wins came in the vertical markets, where systems were rated on their industry capabilities rather than on particular components. Preference was shown in several process industries: beverage, food, electric/power generation, pharma/life sciences, metals/minerals/mining, plastics/rubber, pulp & paper, water/waste water. View the full results at http://www.controlglobal.com/digital_edition/2009/0901/flash.html#/1/


NEW FIELDBUS POWER SUPPLY SYSTEM FOR H1 SEGMENTS

R. STAHL has expanded the ISbus range, adding a new modular Fieldbus Power Supply System which provides up to 28 V and 500 mA for Foundation fieldbus H1 segments, and also provides redundant supply. In “Boost” mode, a parallel connection of two Power Supplies enables users to continuously supply the bus with up to 1 A, thus providing sufficient power reserves even for special fieldbus applications. An integrated Basic Diagnosis function monitors each segment for line faults, reporting these via a potential-free relay contact and indicating them via a red ERROR LED. Likewise, the activation of the integrated switchable fieldbus terminator is clearly indicated by a yellow LED.

The basic Fieldbus Power Supply version monitors the bus for cable breaks and short circuits. The Advanced Fieldbus Power Supply, which will be available shortly, additionally provides advanced diagnostic features concerning physical layer parameters such as signal level, noise, asymmetries and jitter, thus rendering costly diagnosis modules unnecessary.

R. STAHL  www.stahl.de

“RUGGEDIZED” COMMUNICATIONS NETWORKING EQUIPMENT AVAILABLE FROM RUGGEDCOM

RuggedCom designs and manufactures “ruggedized” communications networking equipment for harsh environments and has established itself as a global leader in the area of industrial Ethernet and communications technologies. Our industry-leading products can be found in mission-critical networks where high reliability and maximum uptime are of paramount importance, including: the “Smart Grid” for electric utilities, intelligent transportation, process control and manufacturing automation.

RuggedCom developed the world’s first Ethernet switch designed specifically for electric utilities, as well as the world’s first error-free communications device under severe EMI conditions.

RuggedCom has the industry’s fastest network fault recovery, and introduced the world’s first fully managed waterproof Ethernet switch.

RUGGEDCOM  www.ruggedcom.com

PHOENIX CONTACT PHYSICAL LAYER OFFERS NUMEROUS BENEFITS

A modular approach to Fieldbus physical layer components from Phoenix Contact provides infrastructure connection between the process Fieldbus controller and field devices. The new concept, says the company, combines industrial electronic packaging and data communications competencies to deliver a high-value Fieldbus infrastructure solution. It provides a number of benefits:

- The fieldbus is expanded without disrupting communication
- Modular segment protection enables flexibility within the fieldbus network
- Valuable enclosure space is saved because only the needed number of device couplers are installed
- Scalability for fieldbus segment protection boosts control
- Fieldbus integrity equals a hot swappable modular design

For more details, visit the Phoenix Contact Website.

PHOENIX CONTACT  www.phoenixcontact.com/fieldbus

PORTABLE ACCESS TO FOUNDATION FIELDBUS H1 NETWORKS

Softing has released an innovative and unique USB interface device for FOUNDATION Fieldbus H1 networks. The newly developed “FloBus” is the world’s first USB interface module that provides access to H1 field devices over the USB interface of a desktop or notebook computer. At the same time, the conventional PC Card solution for notebooks has been replaced with the flexible USB interface technology that combines a fast data-throughput with a straightforward data exchange mechanism. Softing’s new FFusb can be used to monitor, configure, and parameterize H1 field devices. For more information, please visit us online or call (978) 499-9550.

"Your clear path to Asset Excellence"

Introducing: VigilantPlant Asset Excellence for asset availability and utilization

Is your plant asset reliable and available?
Is your asset condition predictable and performance sustainable?
Applying the VigilantPlant philosophy to plant asset management, Yokogawa helps you build sustainable asset performance from the ground up. Yokogawa will be your partner in the clear path to asset excellence.

www.yokogawa.com/vigilantplant/ae/
Automation Infrastructure
For Operational Excellence.

The Fieldbus Foundation is “Changing the Playing Field” in industrial automation. The scope of Fieldbus technology makes it a process automation infrastructure—one of the most advanced and scaleable 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, 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. Find out more.


Fieldbus Foundation
9005 Mountain Ridge Drive, Bowie Bldg. – Suite 200
Austin, Texas USA 78759
Tel: 512.794.8890 • Fax: 512.794.8893
E-mail: info@fieldbus.org