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Fieldbus Facts Online is brought to you by the Fieldbus Foundation, an international, not-for-profit corporation consisting of automation industry leaders dedicated to providing the "Freedom to Choose" and the "Power to Integrate."

Featured This Month...



**FOUNDATION Fieldbus ...
we put the pieces in place**



Endress+Hauser 
People for Process Automation

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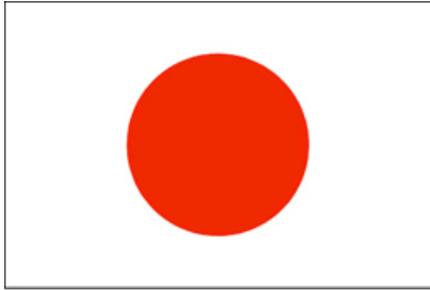
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FOUNDATION BRIEFS



Fieldbus Foundation 2009 General Assembly set for Yokohama, Japan

The Yokohama, Japan, is the site for the Fieldbus Foundation's 2009 General Assembly. The annual event will be held March 4-5 at the Pan Pacific Hotel and is open to Fieldbus Foundation members and non-members alike. Leading Foundation fieldbus suppliers, end users, and industry participants from around the world are expected to attend.

The General Assembly offers an overview of Fieldbus Foundation developments across the globe. Fieldbus technology experts will give presentations focused on process integrity, open scalable integration, and business intelligence. The event will also feature talks by major end users who have installed FOUNDATION fieldbus in their industrial operations.

"End users are at the core of our organization," said Rich Timoney, Fieldbus Foundation president and CEO, "and their support of FOUNDATION technology has been at the heart of its phenomenal growth. The exchange of fieldbus application experiences through their participation is important for the General Assembly, and to the foundation overall. We strongly encourage all end users of FOUNDATION technology, and those looking to become users, to actively participate in this annual event."

For more information on the 2009 General Assembly, visit the [Fieldbus Foundation Website](#).

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Free download: ARC whitepaper explains FOUNDATION SIF technology

Learn more about FOUNDATION Safety Instrumented Functions (SIF) in a new whitepaper from the Fieldbus Foundation. Authored by the ARC Advisory Group, a leading research and advisory firm for manufacturing, energy, and supply chain solutions based in Dedham, MA, the document discusses the implications of FOUNDATION SIF (FF-SIF) technology for the global plant safety system market and end users.



FOUNDATION Fieldbus Safety Instrumented Functions Forge the Future of Process Safety explains how successful beta testing of FOUNDATION SIF will mean significant changes in the way automation end users approach Safety Instrumented System (SIS) implementations in process industry plants. In May 2008, the Fieldbus Foundation conducted a successful live demonstration and press day for FOUNDATION SIF technology at Shell Global Solutions in Amsterdam, The Netherlands. At the event, several leading energy companies described their use of FOUNDATION SIF in a wide range of industrial safety system applications.

In the new whitepaper, Larry O'Brien, ARC Advisory Group's research director—process automation, describes how FOUNDATION SIF is a critical part of the FOUNDATION fieldbus automation infrastructure. FOUNDATION fieldbus' industry-proven distributed function blocks and



open communications protocol make the platform ideal for advancing standards-based solutions for plant SIFs. FOUNDATION SIF lets end users reduce TCO (total cost of ownership) by extending fieldbus benefits into 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 whitepaper 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, "FF-SIF meets the IEC 61508 standard for functional safety systems up to SIL 3, and allows users to build safety systems that adhere to the IEC 61511 standard for functional safety in the process industries. The 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."

Download the FOUNDATION SIF whitepaper free from the [Fieldbus Foundation Website](#).

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GLOBAL NEWS & EVENTS

German Committee welcomes more than 72 to fieldbus conference in Switzerland

More than 72 attendees participated in the fourth FOUNDATION Fieldbus Conference, hosted by the Fieldbus Foundation German Marketing Committee last month. The well-received and successful event, held at the Congress Centre, Basel, Switzerland, was aimed at end users, engineering contractors, and system integrators.



This year's German & Swiss FOUNDATION Fieldbus conference followed the format of last year's event, held in Marl, Germany. Both newcomers to FOUNDATION technology and experienced users enjoyed the comprehensive conference program. In addition to morning presentations, attendees were able to participate in two out of three roundtable discussion sessions throughout the afternoon, each moderated by a key journalist from the processing industry.



Attendees also were able to view tabletop exhibits throughout the afternoon. The displays of products and applications were arranged by the 11 sponsor companies, which included Bürkert, Emerson Process Management, Endress+Hauser, Hans Turck/ Bachofen, Leoni Kerpen, MTL Instruments, Pepperl+Fuchs, Phoenix Contact, R. Stahl, Samson, and Yokogawa.

Prior to the conference program, 31 delegates took the opportunity to attend a basic FOUNDATION fieldbus training course at the purpose-built FOUNDATION fieldbus laboratory at the Endress+Hauser Process Solutions facility in Reinach. The course included technical presentations and practical demonstrations using a test host system and multiple field devices. Topics included a general overview of fieldbus technology; architecture and functionality of FOUNDATION fieldbus; development of FOUNDATION devices and function blocks; comparisons with conventional technologies; and system integration and control in the field.

The morning agenda included:

- *Introduction and welcome* by Wolfgang Höferlin, chairman, Fieldbus Foundation German Marketing Committee and Dr. Raimund Sommer, vice-chairman, Fieldbus Foundation Executive Advisory Council;
- *Global Feedback of FOUNDATION Fieldbus Technology* by Matthias Petzsch, ARC

Advisory Group;

- *Is a cost evaluation of installing Fieldbus Technology still necessary?* by Dr. Nils Kuipel, Evonik Degussa;
- *FOUNDATION Safety Integrated Functions replaces parallel plant safety network* by Thomas Kasten, member of Fieldbus Foundation EMEA Steering Committee; and
- *FOUNDATION Fieldbus—trends and technology update* by André Fritsch, member of Fieldbus Foundation EMEA Steering Committee.

The afternoon roundtables and moderators included:

- Tendering & Planning—Frau Michaela Geiger, editor, *Technische Rundschau*
- Operation & Maintenance—Frau Dr. Etwina Gandert, editor, *Chemie Technik*
- Commissioning/Facility Handover—Frau Dr. Christine Eckert, freelance journalist

Learn more about future events in the region by visiting the [Fieldbus Foundation Website](#).

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Australian End User Council plans ‘Jump Aboard 2009’

Plans are underway for “Jump Aboard 2009: Fieldbus—the Next Generation.” Hosted by the Fieldbus Foundation End User Council Australia (FFEUCA), the end-user council meeting is scheduled for Perth, May 15, 2009. The event typically attracts a large following of automation suppliers and end users throughout Australia and the Asia/Pacific region.



Get more information from the [Jump Aboard 2009 Website](#).

Sponsorship opportunities also are available. [Download a pdf with the details](#).

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2009 Fieldbus technology events planned around the world

The Fieldbus Foundation is planning many informational and educational events around the world in the new year. Make plans now to attend an event in your area.

LOCATION	DATE	EVENT and CONTACT INFORMATION
EVENTS IN NORTH AMERICA		
Coatzacoalcos, Veracruz, Mexico	Feb. 19, 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Baton Rouge, Louisiana, USA	March 19, 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Calgary, Alberta, Canada	April 21, 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Edmonton, Alberta, Canada	April 23, 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Montreal, Quebec, Canada	May, 7, 2009 (tentative)	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Long Beach, California, USA	Oct. 15, 2009	FOUNDATION Fieldbus End User/EPC Seminar More information to come

Pasadena, Texas, USA	Nov. 3, 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Houston, Texas, USA	Nov. 5, 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Las Vegas, Nevada, USA	Dec. 8-10, 2009	Power Gen 2009 More information to come
EMEA (EUROPE, MIDDLE-EAST, AFRICA) EVENTS		
Duesseldorf, Germany	March 2-4, 2009	ARC Process Management Academy More information to come
Humberside, UK	March 2009	FOUNDATION Fieldbus End User/EPC Seminars More information to come
Hannover, Germany	April 20-24, 2009	Interkama Trade Show More information to come
Frankfurt, Germany	May 11-15, 2009	ACHEMA Trade Show More information to come
Le Havre, France	June 2009	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Italy	June 2009	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Brands Hatch, Kent, UK	October 2009	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Bahrain	October 2009	Multaqa 2009-FOUNDATION Fieldbus End User Conference More information to come
Frankfurt, Germany	November 2009	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Russia (various locations)	To be determined	FOUNDATION Fieldbus End User/EPC Seminars More information to come
SEMINARS IN SOUTHEAST ASIA		
Thailand	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Malaysia	To be determined	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Jakarta, Indonesia	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
SEMINARS IN INDIA		
Chennai, India	Mid-December 2009	FOUNDATION Fieldbus End User Seminar More information to come
SEMINARS IN EAST ASIA		
Osaka, Japan	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Tokyo, Japan	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Korea	To be determined	To be determined

[Click here](#) for a complete list of events.

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TECHNOLOGY NEWS

Foundation announces SIF final specification, development tools

New device development solutions for FOUNDATION for Safety Instrumented Functions (SIF) technology are now available. The Fieldbus Foundation announced its latest SIF release, which includes the FOUNDATION for SIF final Technical Specification package (available for the first time to 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.



FOUNDATION fieldbus, with its industry-proven distributed function blocks and open communications protocol, is an ideal platform for advancing standards-based SIFs. FOUNDATION technology enables process end users to realize significant CAPEX and OPEX benefits by extending fieldbus benefits into plant safety systems. The SIF protocol was approved by TÜV Anlagentechnik GmbH to meet the requirements of IEC 61508 up to, and including, Safety Integrity Level (SIL) 3.

In May 2008, the Fieldbus Foundation conducted a successful end-user demonstration of its FOUNDATION for SIF solution at the Shell Global Solutions technology center in Amsterdam, The Netherlands. The purpose of this live technology demonstration, which attracted process automation end users and equipment suppliers from around the world, 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 demo also evaluated system integration capabilities with asset management and basic process control system (BPCS) platforms.

Audun Gjerde of Shell Global Solutions, who conducted the SIF demo at the Amsterdam event, noted, "By implementing FOUNDATION for SIF, Shell expects enhanced diagnostics through a fully integrated asset management system. We also anticipate less testing of final elements thanks to smart testing and diagnostics, as well as online testing and partial stroke testing. This will result in early detection of dangerous device failures—and fewer spurious trips."

According to Fieldbus Foundation product manager-fieldbus products Stephen Mitschke, the new FOUNDATION for SIF solutions will enable automation equipment suppliers to develop SIF devices incorporating powerful fieldbus diagnostics. He said, "Plant safety systems can now employ the same rich diagnostic capabilities traditionally offered by FOUNDATION fieldbus technology. These diagnostics are the key to improved process reliability and robustness, as well as increased uptime and fewer spurious alarms."

Mitschke added, "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. 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," which allows 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 interoperability test suite can be paired with an ITK automation tool designed to eliminate several manual intervention steps required when performing pre-registration testing of fieldbus devices. The tool improves ITK schedule efficiency and provides a direct reduction in the time and labor needed to complete the testing phase. A maintenance agreement to keep the test suite software up-to-date with the latest enhancements is also available.

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.

For more information about the FOUNDATION for SIF Technical Specification, visit the [Fieldbus Foundation's Specification Page](#).

For details on the SIF Interoperability Test Kit and DD Library, visit the [Fieldbus Foundation's Tools Page](#) or e-mail sales@fieldbus.org.

A new ARC Advisory Group whitepaper on FOUNDATION SIF technology, "FOUNDATION Fieldbus Safety Instrumented Functions Forge the Future of Process Safety," also may be downloaded from the [Fieldbus Foundation Website](#). Read more about the whitepaper in another article elsewhere in this issue.

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Updated FOUNDATION fieldbus technical specification now available

An updated FOUNDATION fieldbus technical specification is now available. FOUNDATION Technical Specification FF-007-2008.3 includes a variety of enhancements for developers and end users of FOUNDATION fieldbus. The updates address:



- H1 network management
- H1 cable test specification
- Fieldbus message specification
- Software download addendum
- Function block AP parts 1-5
- Transducer block common specification
- Temperature transducer block
- Pressure transducer block
- Host interoperability support test profile and procedures
- Profile/profile revision
- Standard tables

The Fieldbus Foundation's open, non-proprietary FOUNDATION fieldbus specifications are essential for controls manufacturers seeking to respond to the rising demand for fieldbus-based control solutions. This enabling technology facilitates significant improvements in process integrity, business intelligence, and open and scalable integration of information across process manufacturing plants.

Members with active specification maintenance agreements can access the specification document on the [Fieldbus Foundation Website](#). Locate it in the new integrated [Fieldbus Foundation Technical Specifications Release 2008.3](#) within [Fieldbus Forums](#) under [Product Forums—FOUNDATION Technical Specifications Support Forum](#). An account with member access privileges is required to access the document. If you are unable to access the link, email [Member Services](#) to activate member privileges.

For more information, call 1-512-794-8890 or email [Member Services](#).

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PRODUCTS & SOLUTIONS

ABB electromagnetic flowmeters designed for sanitary applications

ABB's FXE4000 series electromagnetic flowmeters are FOUNDATION fieldbus-capable and specifically designed for sanitary applications in



the food, pharmaceutical, beverage, and biotech industries. They meet 3A and EHEDG standards, having FDA-approved materials for product contact surfaces. They can be cleaned and sterilized in place without disassembly. They have no cracks, crevices, or surface imperfections, permitting smooth transitions and self-draining capability.

Model DE23 integrates the primary measurement and converter (transmitter) mounted in a single unit, while Model DE21 has a converter and display remotely mounted from the flowmeter.

Magnetic flowmeters have no moving parts. Solids, such as fruit pulp, do not inhibit meter performance. Also, there is no pressure loss—no obstruction or restriction in the flow stream. They offer bidirectional flow measurement and installation in any orientation with no impact on performance.

ABB FXE4000 sanitary magnetic flowmeters offer accuracy of $\pm 0.5\%$ of rate ($\pm 0.25\%$ optional) over a wide turndown, installation and replacement without calibration, and illuminated two-line display, offering up to six different parameters in multiplex operation and a large range of sizes.

Find out more by visiting the [ABB Website](#).

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MTL's FOUNDATION Fieldbus solutions are a step ahead

MTL and its partners offer a variety of products that they call "Fieldbus Plus."

Identifying themselves as market leaders in FOUNDATION Fieldbus networking solutions, MTL and its partner Relcom cite their Megablock and reliable, economical 8-segment 800 series power conditioners among top products. In addition, MTL/Relcom is reported to be among the first to introduce an H1 diagnostics tool and associated cable testers with FBT series or handhelds. These were followed by one of the first online diagnostic tools to use H1 communications for network analysis, giving the user the ability to plug in and gather data using the existing infrastructure.



With an eye on a future with HSE, MTL says it is the first and only company to offer IPv6 compatible POEx intrinsically safe Power Over Ethernet network equipment for Ethernet-based systems. MTL/Byres Security says it is the first company to provide an industrial firewall tested in the HSE environment.

Watch for many more "firsts" from MTL in the year ahead.

See the full range of MTL Fieldbus and industrial Ethernet solutions on the [MTL Website](#). In North America, call 1-877-FFHELP911 (1-877-334-3579) for more information.

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Northwire's attention to detail smoothes FOUNDATION fieldbus installations

Careful attention to the details makes a Foundation fieldbus installation go smoother, says cable supplier Northwire Inc, and makes your job less complicated.



An FF-844 certified DataCell Foundation Fieldbus

"Type A" H1 cable from Northwire has 100 Ω +/- 20 Ω characteristic impedance with proper dc resistance (DCR) to ensure electrical performance. UL-listed instrument tray cable (ITC) and power limited tray cable (PLTC) are suitable for use in hazardous locations when properly installed. DataCell Foundation fieldbus cables are flame- and UV-resistant. Exposed run (ER) rated cables are crush- and impact-resistant.

Round cable enables a proper seal in cable glands, saving installation time and hassle. Fillers in multi-pair cable facilitate the round shape and keep the drain wire in contact with the foil. Jackets that are effortless to strip will leave the foil shield fully intact for faster and easier installation.

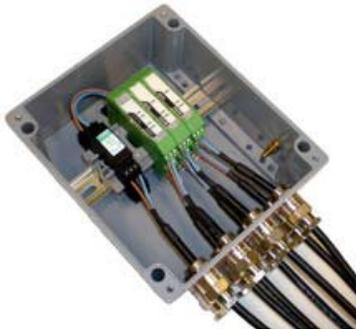
DataCell Foundation fieldbus cables are shipped from stock in 15 days direct from the factory in bulk or 300 m put-ups.

For more information and samples, contact Northwire at 1-715-294-2121 or 1-800-468-1516; or visit the [Northwire Website](#).

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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; and
- Fieldbus integrity equals a hot swappable modular design.

For more details, visit the [Phoenix Contact Website](#).

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Rockwell Automation charts course for process automation growth

A roadmap for process automation, announced by Rockwell Automation at its annual Process Solutions User Group (PSUG) conference, brings its end-to-end suite together under a new name: Rockwell Automation PlantPax systems and solutions.

PlantPax
Process Automation System

"This roadmap represents a culmination of the investments we've made to extend and enhance our process technologies, systems, solutions, and services," said Steve Eisenbrown, senior vice president, automation and software, Rockwell Automation. "It also reflects tremendous progress in integrating our organic investments with our partner and acquisition investments. The PlantPax portfolio is the next step in our commitment to help customers achieve process automation excellence. It unifies our core capabilities and technologies with those of our market leading partners, like OSIsoft and Endress+Hauser, and acquisitions, like Incuity, Pavilion Technologies, ICS Triplex, and ProsCon, under a common systems and solutions umbrella to provide even greater market innovation and value to process industry customers."

Rockwell Automation showcased the PlantPax process automation system, a key component of the portfolio, at its PSUG conference in conjunction with its Automation Fair event. The company outlined plans for continued expansion of the system based on a combination of the two core Rockwell Automation Integrated Architecture technologies: Logix platform and FactoryTalk suite, and those leveraged from co-investments with partners and acquired

companies.

For more on PlantPax systems and solutions, visit the [Rockwell Automation Website](#).

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Turck adds new options for Diagnostic Power Conditioner system

More options are now available for Turck Inc.'s Diagnostic Power Conditioner system for FOUNDATION fieldbus. A new DIN-rail mountable motherboard makes installing the system simpler and faster. The new motherboard comes with separate host and field connections, and detailed labeling for easier installation. This model also has a smaller footprint, freeing up valuable panel space.

In addition, a version of the newly designed motherboard is also available with connections designed specifically for Yokogawa installations.

To learn more, visit the [Turck Website](#).



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