



September 2010

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

Featured This Month



In This Issue...

Foundation Briefs

- [Special report: Technology Director Dave Glanzer updates Wireless I/O project Trine University. SAIT Polytechnic complete FCTP certification process](#)
- [New member: Global safety system leader Det-Tronics joins foundation](#)
- [Membership ranks swell with the addition of six automation industry companies](#)

Global News & Events

- [Fieldbus seminar in Xiamen, China attracts more than 140 participants](#)
- [FOUNDATION fieldbus end-user seminars set for October](#)
- [Developer training taking place in Germany at BIS Prozesstechnik GmbH](#)
- [FOUNDATION technology seminars scheduled across South Africa](#)
- [Educational events will be held worldwide this fall](#)

Technology News

- [Final release of ITK 6.0 now tests for new field diagnostic capabilities](#)
- [Updated FOUNDATION technical specification includes support for ITK 6.0](#)
- [Latest FOUNDATION H1 conformance test kit 3.0 is a complete testing solution](#)



fieldbus solutions



Sponsors



Power and productivity for a better world™



EMERSON Process Management

Endress+Hauser People for Process Automation



Products & Solutions

[Honeywell Field Device Manager adds key capabilities](#)

[Microcyber provides complete Fieldbus Development Toolkits](#)

[Updated MooreHawke whitepaper, 'Installing Fieldbus,' available online](#)

[Northwire cables provide superior ground integrity](#)

[Pepperl+Fuchs updates its Advanced Diagnostic Module DTM software](#)

[Capabilities for physical layer diagnosis now standard in R. Stahl power supplies](#)

[SAIT certified Fieldbus training center announces numerous developments](#)

[Yokogawa offers digital vortex flowmeter](#)



Foundation Briefs

Special report: Technology Director Dave Glanzer updates Wireless I/O project

Wireless I/O (WIO) promises to advance utilization of an open, interoperable fieldbus automation infrastructure incorporating both High Speed Ethernet (HSE) and industrial wireless applications, said Dave Glanzer, Fieldbus Foundation director of technology development in a recent interview



Dave Glanzer

with *Fieldbus Facts Online (FFO)*.

The Fieldbus Foundation is supporting the development of advanced wireless technology for the industrial measurement and control environment. Wireless devices can reduce user installation costs while facilitating connection to process areas physically or economically difficult to access. Wireless networks also allow easy access to additional measuring and actuation points for process supervision and control, process optimization, plant and personnel safety, and maintenance. Following is an account of our recent discussion with Technology Director Glanzer.

FFO: When was the Fieldbus Foundation's Wireless I/O project launched?

Glanzer: Wireless marketing requirements and technical concepts were completed in early 2007, and the foundation's board authorized development of technical specifications in June 2007.

FFO: What is the scope/objective of this project?

Glanzer: The project goal is to provide specifications for a gateway between conventional I/O, wired HART® and wireless sensor networks, and the foundation's High Speed Ethernet (HSE) network. The HSE network can be wired for in-plant use, or serve as a wireless backhaul for remote applications. The wireless sensor networks can be either *WirelessHART™* or ISA100.11a.

FFO: How many foundation members are involved in the WIO effort, and who are they?

Glanzer: The WIO project consists of three teams. The HSE Remote I/O (HSE RIO) team is developing the specification for the gateway from wired HSE to conventional I/O and wired HART. The Fieldbus Foundation/ISA Cooperation (FIC) team is developing specifications for the wireless HSE backhaul to the gateway. The Wireless Sensor Interface Team (WSIT) is developing specifications for interface of wireless sensor networks to the gateway.

There are more than 50 end users, engineers, and technical managers working on the project. The companies involved include ABB, APAT, Aprion, Belden, Boeing, BP, Chevron, Cisco, EF Johnson, Emerson Process Management, ExxonMobil, GE, Geode Network Technologies, Herman Storey Consulting, Hodson Consulting, Honeywell, Maximum Control Technologies, MTL, National Instruments, Nivis, OPUS Consulting, Pepperl+Fuchs, R. Stahl, RuggedCom, Saudi Aramco, Shell Global Solutions, Smar, Softing, Tofino, Turck, Wi-Fi Sensors, Yamatake, and Yokogawa.

FFO: What is the current status of the project?

Glanzer: The HSE RIO specifications are in final validation phase and should be released this year. The backhaul and wireless sensor interface specifications are in development, with validation expected to begin at the end of year. Validation of the backhaul and wireless sensor interface specifications is planned for completion during the summer of 2011.

FFO: What are the recent achievements in the WIO effort?

Glanzer: The first HSE wireless backhaul network was connected to the WIO gateway prototypes in August, and is working well in the Fieldbus Foundation laboratory in Austin, Texas.

FFO: How does the WIO development fit into the current market, which is characterized by **WirelessHART** and ISA 100.11a technologies?

Glanzer: The position of the Fieldbus Foundation is one of neutrality. We are currently engaged in supporting our global strategy of providing an infrastructure-based architecture that supports both *WirelessHART* and ISA100.11a. We are enthusiastically in support of the user market's request to suppliers for a single standard and support the ongoing work on convergence. In the meantime, however, we will continue our efforts to develop and deploy an infrastructure that will accommodate the evolving wireless standards inclusive of *WirelessHART* and ISA100.11a. The foundation's WIO gateway provides an interface to both technologies and uses Electronic Device Description Language (EDDL) and Function Blocks to provide interoperability with the other WIO gateways.

FFO: What are the advantages of the WIO solution?

Glanzer: The WIO development continues to broaden the automation infrastructure capabilities of FOUNDATION technology by providing interoperable gateways for wired and wireless HSE devices.

FFO: What are the next steps?

Glanzer: The next steps are to complete the HSE RIO validation and begin the wireless validation by the end of this year.

For information about the Fieldbus Foundation's WIO project, visit the Fieldbus Foundation [Website](#).

[Return to Top](#)

Trine University, SAIT Polytechnic complete FCTP certification process



Two schools—Trine University, Angola, Indiana; and SAIT Polytechnic, Calgary, Alberta, Canada—have successfully completed the rigorous certification process under the Fieldbus Foundation's Foundation Certified Training Program (FCTP). The program, which establishes uniform standards for fieldbus educational curriculum around the world and defines acceptable levels of learning for students of FOUNDATION technology, ensures the availability of thorough, comprehensive, and accredited training to the process automation marketplace.

According to Fieldbus Foundation Marketing Manager Bill Tatum, the FCTP was established to ensure instructors delivering FOUNDATION fieldbus educational courses are skilled, knowledgeable, and technically competent. Through certification, the program demonstrates to prospective end-user students that fieldbus training centers and their instructors have been thoroughly evaluated according to strict criteria, and have the necessary qualifications

to provide the very best training available.

"Effective and standardized training of plant personnel is the key to successful implementation of an advanced technology such as FOUNDATION fieldbus," said Tatum. "As evidenced by feedback received in our global fieldbus seminar program, process end users want to maximize the benefits of their fieldbus instrumentation and control system investments, and experience has shown that training of operators, engineers, and technicians is essential to getting the most out of the technology. When end users see the official FCTP logo displayed by a certified training site, they know the foundation has identified this institution as having the competence and resources to offer superior FOUNDATION technology training programs."

Educational institutions must follow rigorous procedures to gain certified FOUNDATION training site status, certified course instructors, and a certified curriculum. For example, certified training centers are required to maintain multiple FOUNDATION fieldbus hosts and devices onsite to demonstrate competence with fieldbus technology. They must also demonstrate to auditors that their course material adheres to set instructional standards covering fieldbus segment limits; device replacements; commands, icons, menus, and screen designs of different software packages; and communication, scheduling, and function-block assignments enabling configuration.

In addition, certified instructors are audited to see that they have achieved specified Fieldbus Foundation training goals. Instructors must demonstrate expertise in areas such as human-machine interface (HMI) tools, fieldbus troubleshooting, simple device configuration, and device deployment and functionality across a fieldbus network.

The FCTP currently offers three levels of certification. Others may be added in the future. Current certifications include Foundation Certified Professional, Foundation Certified Support Specialist, and Foundation Certified Technical Specialist. Educational facilities that complete the multi-stage FCTP certification process may issue certificates showing that the Fieldbus Foundation accredits their courses. They also are recognized on the Fieldbus Foundation Website.

Institutions currently certified under the FCTP program include: Fieldbus Center at Lee College, United States; Trine University, United States; SAIT Polytechnic, Canada; and STC Brielle, The Netherlands. Other training centers participating in the program include: University of Miskolc, Hungary; Waseda University, Japan; and King Mongkut's Institute of Technology, Thailand.

About Trine University:

Trine University, founded in 1884, is an internationally recognized, private, co-educational institution that grants associate's, bachelor's, and master's degrees in more than 30 programs. In March 2005, the Trine University Technology Center and the Fieldbus Foundation

established the Great Lakes Regional FOUNDATION fieldbus training center. The Trine facility offers fieldbus training that is standardized yet focused on the needs of industry throughout the Midwest/Great Lakes region of the U.S. Courses are offered at the Indiana location and at customer facilities when requested.

"The Trine Technology Center is honored to be named as a new FOUNDATION fieldbus certified training site," said Wayne Mortorff, director of program development at the Trine University Technology Center. "Our institution strives for excellence in its fieldbus educational curriculum, and achieving Fieldbus Foundation certification provides a clear indication to prospective students that our courses meet the comprehensive standards established by the foundation for all accredited training centers worldwide. We would like to thank all of the generous donors who have contributed equipment and software for our FOUNDATION fieldbus training lab. This educational program would not have been possible without their assistance."

David S. Lancaster, Trine's certified FOUNDATION fieldbus instructor, called training the key to a successful design and overall project implementation. "This certification program gives a very comprehensive, vendor-neutral approach to instruction," he said. "The user then has the knowledge needed to make an informed decision in selection of devices and components, designing the systems, and implementing that design to ensure certainty of outcome."

Lancaster is a control systems engineer (registered PE, Texas) with 43 years experience in engineering and contractor businesses. He retired as the chief engineer for control systems for Bechtel Oil, Gas & Chemical Inc. in Houston, Texas, after 30 years of service. Lancaster has been heavily involved in FOUNDATION fieldbus technology since 1999. He taught fieldbus technology internally at Bechtel and participates in Fieldbus Foundation educational seminars in North America. He also recently served as the technical editor for the Fieldbus Foundation's AG-181 (Revision 3.1) "System Engineering Guidelines."

About SAIT Polytechnic:

The Fieldbus Foundation and SAIT Polytechnic signed a partnership agreement to establish a FOUNDATION fieldbus training facility on the SAIT campus in Calgary. SAIT offers *FOUNDATION fieldbus Certified Professional*, a comprehensive five-day training program that includes: *FOUNDATION fieldbus essentials*, *FOUNDATION fieldbus discovery*, and *FOUNDATION fieldbus practices*. Participants successfully completing the course receive Foundation Certified Professional certification.

Reflecting the most up-to-date standards in the industry, SAIT recently upgraded its FOUNDATION fieldbus lab to incorporate Foundation High Speed Ethernet (HSE) technology. The new system interoperates fieldbus instruments from more than a dozen different manufacturers. This system used for the laboratories, along with Honeywell Experion, Yokogawa Centum, Smar System302, and Emerson DeltaV, expose trainees to a diverse and comprehensive fieldbus experience. SAIT's fieldbus lab facilities provide each trainee with his own training station, which includes four FOUNDATION fieldbus devices from four manufacturers. More than 20 manufacturers of fieldbus equipment are represented in the lab.

Mary MacDonald, dean of SAIT's MacPhail School of Energy, said, "SAIT is excited to continue its relationship with the Fieldbus Foundation. We recognize the importance of fieldbus technology in the Canadian oil and gas industry and the ability to provide that industry with training for its workforce."

Added Ian Verhappen, SAIT's certified FOUNDATION fieldbus instructor, "Industry is continuing to adopt FOUNDATION fieldbus technology as its preferred means of connecting to field devices. SAIT is ideally situated to provide the training necessary for professionals preparing to use fieldbus either for the first time or as a refresher at the start of any phase of their project. Experience has shown that training not only gets the entire team working with a common understanding of the technology; working together on the equipment and exercises also provides an excellent opportunity to develop camaraderie and a sense of being part of the project."

Verhappen has been involved with FOUNDATION fieldbus since 1995, leading the first multi-host interoperability testing in 1996 and writing numerous reference documents on the technology, including the original AG-181 *Engineering Guides* and the popular FOUNDATION fieldbus book from ISA. He is an ISA Fellow and Certified Automation Professional, past chair of the Fieldbus Foundation End User Advisory Council (EUAC), and presenter for the original FOUNDATION fieldbus North America End User Seminars.

More information about certified training and FOUNDATION fieldbus training sites, visit the Fieldbus Foundation [Website](#).

[Return to Top](#)

New member: Global safety system leader Det-Tronics joins foundation



Detector Electronics Corporation (Det-Tronics), a worldwide supplier of industrial hazard safety solutions, including flame detection, gas detection, and hazard mitigation systems, is the newest member of the Fieldbus Foundation. The company's Safety Integrity Level (SIL)-2 flame and gas safety systems range from conventional panels to fault-tolerant, addressable systems.

Founded in 1973, Det-Tronics designs and manufactures one of the industry's largest selections of flame detectors, gas sensors, and safety systems. It also maintains one of the world's largest fire and gas test facilities. The company employs more than 280, and has 76 representatives and 18 sales offices around the globe serving the oil and gas, refining, automotive, aerospace, munitions, and chemical markets.

Welcoming Det-Tronics to the foundation, Bill Tatum, Fieldbus Foundation marketing manager, said the addition of the company corresponds to the growing market demand for fieldbus-based safety solutions. "Our FOUNDATION fieldbus for Safety Instrumented Functions (FF-SIF) development provides new opportunities to leverage the powerful capabilities of fieldbus instrumentation and advanced diagnostics to optimize plant safety systems," said Tatum. "Det-Tronics is a major supplier to industrial safety users, and we welcome its contributions to our organization and its technology."

By joining the Fieldbus Foundation, Det-Tronics hopes to achieve recognition and access to new markets for its product line. As a division of United Technology Corp., the company also expects to enhance its visibility within the fieldbus community and contribute to the growth of the market.

"Our customers requested a fieldbus interface to safety products, and we would like to support them by offering a strong, industry-accepted communications protocol," said Cliff Anderson, Det-Tronics director of marketing. "Our over-arching goal is to help our customers achieve improved personnel safety and plant performance."

Det-Tronics' advanced fire and gas safety systems support addressable-loop and point-to-point architectures, and all of its solutions are highly fault-tolerant, configurable detection and releasing systems. The company's optical flame detectors incorporate the latest technologies in ultraviolet (UV), infrared (IR), UV/IR, dual IR, and multispectrum IR to maximize detection while minimizing false alarms. In addition, Det-Tronics' gas detectors accurately detect the presence of combustible and toxic gases. The full line includes nanotechnology metal oxide semiconductor (NTMOS), catalytic, electrochemical, and IR absorption technologies.

For more information, visit the Det-Tronics [Website](#).

[Return to Top](#)

Membership ranks swell with the addition of six automation industry companies

The Fieldbus Foundation has announced six additional new members. They are: CodeWrights GmbH, Karlsruhe, Germany; Mimer SQL, Uppsala, Sweden; Poliron, Sao Paulo, Brazil; Associated Flexibles & Wires Pvt. Ltd., Mumbai, India; Belcom, London, UK; and Sira, Chester, UK.



CodeWrights GmbH, founded in 2002, is a service provider for device integration. The company develops software for integrating field devices into control and configuration systems within the automation industry. It primarily generates device drivers based on Field Device Technology/Device Type Manager (FDT/DTM) technology. It also offers custom software development to meet specific customer requirements.

CodeWrights software product, iDTM™ FOUNDATION fieldbus, offers a combination of Electronic Device Description (EDD) and FDT technologies as well as a uniform user interface for all devices. The interpreter DTM facilitates the use of devices employing a DD file, but for which no DTM is available. In contrast to a generic solution, iDTM supports the complete operation of a fieldbus device based on the registered DD. This enables FOUNDATION technology users to integrate field instruments in an FDT application.

For more information about CodeWrights, visit its [Website](#).

Mimer SQL is a world leader in database technology for embedded devices. The Mimer SQL Real-Time Edition is a predictable, scalable, and zero maintenance database management system for embedded real-time systems, such as automotive, process-control, and robotic applications. By combining predictable, hard



real time, and non-real-time database access, integrated data management solutions impossible to implement with other DBMS products on the market are made possible.

As a member of the Fieldbus Foundation, Mimer SQL is extending its real-time database server to target fieldbus products and industrial automation systems specifically. Mimer intends to develop database-related technologies enabling FOUNDATION fieldbus objects to be modeled directly in the database, allowing these objects to be accessed using various interfaces. Additionally, it will support deployment of its SQL database servers directly into FOUNDATION fieldbus products so that a uniform data model and data access can be achieved in all levels of industrial automation.

Learn more about Mimer SQL by visiting its [Website](#).



Poliron, a manufacturer of fieldbus cable founded in 1947, supplies its products to leading end users such as Petrobras and other companies from the petrochemical, sugar, and alcohol sectors in Brazil. It also exports cables to 14 countries. Poliron is certified by ISO 9001:2008 and its cables are certified by UL, Bureau Veritas, BRTUV, and TÜV Rheinland. The company's main fieldbus cable is certified by UL (USA). It believes

foundation membership will allow for greater integration with its customers' needs.

For more information about Poliron, visit its [Website](#).



Associated Flexibles & Wires Pvt. Ltd. has been a leading cable manufacturer in India for more than three decades. Its product line includes instrument cables, power/control cables, fieldbus cables, serial

link communication cables, co-axial RF cables, fire survival cables, halogen-free cables, and composite cables and wires.

The company is ISO 9001:2000 certified, approved by major national and international project consultants and accreditation agencies. Since 1978, AFW has been successfully meeting the complex and changing cabling needs of the Indian and global markets across sectors, including oil and gas, power, energy, petrochemicals, communications, heavy engineering, infrastructure, defense, and aviation. Its fieldbus cables are based on the FF-844 specifications for "Type "A" and conform to recommended IEC standards.

More information about Associated Flexibles & Wires may be found on its [Website](#).



Belcom, a privately owned firm based in London, England, has been developing a broad range of industrial automation cables since inception in 1992, and serves customers in the construction, OEM, chemical, pharmaceutical, oil and gas, petrochemical, distribution, and water and wastewater markets. It offers a wealth of industry experience dedicated to meeting the cabling requirements of each individual project.

For more information about Belcom, visit its [Website](#).



Sira (a CSA International company) is a world leader in the conformity assessment solutions field, specializing in explosion safety of equipment used in potentially explosive atmospheres (ATEX & IECEx). The company's origins in the field of instrumentation go back to 1914.

Sira is currently involved in certifying FOUNDATION fieldbus products to ATEX and IECEx standards. It also maintains a functional safety department accredited by UKAS, and issues accredited certificates for FF-SIF products to comply with IEC 61508 and IEC 61511. The company is planning a three-day technical training course to strengthen the bridge between Ex protection concepts and FOUNDATION fieldbus technology so that end users can benefit from these technologies in hazardous location applications.

Learn more about Sira by visiting its [Website](#).

[Return to Top](#)

Global News & Events

Fieldbus seminar in Xiamen, China attracts more than 140 participants



A FOUNDATION fieldbus technical seminar held July 15, 2010 at the Crown Plaza Paragon Hotel in Xiamen, China drew more than 140 attendees from various process industries. Organized by the Fieldbus Foundation China Marketing Committee (FFCMC), the event was the second this year with a focus on FOUNDATION fieldbus in petrochemicals.

The Xiamen seminar featured a number of informative presentations and reports by fieldbus technology experts. Speakers included leading end users and EPCs. Fieldbus Foundation President and CEO Rich Timoney delivered the keynote titled, "FOUNDATION Fieldbus—An Automation Infrastructure for Operational Excellence." The event kicked off with introductory remarks by the FFCMC chairman, William Zeng, who is manager of ABB Open Control Systems Asia Pacific—China Operation.

QiZhong Liu, instrumentation manager, Fujian Refining and Petrochemical Co. Ltd., presented "FOUNDATION Fieldbus Application in Fujian Refining and Ethylene Project (FREP)." According to his presentation, nearly 8,100 FOUNDATION fieldbus devices were deployed in the large-scale FREP refining and ethylene complex, which has been in successful operation since August 2009. The FOUNDATION technology and asset management systems decreased commissioning and maintenance labor significantly, and reduced lifecycle costs.

Rong Lin, deputy chief engineer, Sinopec Engineering Inc. (SEI), presented "FOUNDATION Fieldbus Technology Application and Trend in China Petrochemical Industry." His address described how FOUNDATION fieldbus has been proven in major petrochemical complexes such as SECCO, CSPC and FREP, where it is reducing operational and maintenance costs throughout the entire project lifecycle.

William Zeng, ABB, shared highlights from a keynote address delivered by B.R. Mehta, vice president, Reliance Industries Ltd at the Fieldbus Foundation's 2010 General Assembly in Houston, Texas. That address described the Jamnagar Export Refinery Project (JERP) in India. JERP is reported to be the largest FOUNDATION fieldbus installation in India, and also one of the largest fieldbus projects worldwide to date.



Among the other seminar presentations, Hao Qian, ABB, presented "FF Control In Field Overview;" Peng Chen, Yokogawa Electric, discussed FOUNDATION fieldbus design and engineering guidelines; Jianwei Wei, Microcyber, provided a briefing on FOUNDATION product development; and Weibo Huang, Sinopec Yanshan Education and Training Center, offered an update on fieldbus training opportunities in China.

Sponsors of the Xiamen event included: ABB, Bayi Cable, Belden, Emerson Process Management, Fluke, Mettler Toledo, Microcyber, National Instruments, Pepperl+Fuchs, Rockwell Automation, Samson, R. Stahl, and Yokogawa.

For more information about future events, visit the Fieldbus Foundation [Website](#).

[Return to Top](#)

FOUNDATION fieldbus end-user seminars set for October

Two FOUNDATION fieldbus end-user seminars will be held in October 2010. Based on the theme "Asset Management Made Easy," the free programs



show attendees how to use FOUNDATION technology, a supplier-neutral, standards-based process automation infrastructure, to achieve operational excellence in process plants and other industrial facilities.

The final events of this year will take place Tuesday, Oct. 19, at the Embassy Suites Hotel in New Orleans, LA; and Thursday, Oct. 21, at the Holiday Inn & Suites, Beaumont Plaza, in Beaumont, Texas.

Directed at process control end users and engineering firms, the one-day seminars cover all aspects of FOUNDATION automation infrastructure management. They address core technology topics such as Open, Scalable Integration/Segment Design & Layout; Process Integrity/Safety Integrity Levels (SIL) and Safety Instrumented Functions (SIF); and Business Intelligence/Maintenance and Troubleshooting. Each topic is discussed in detail for 45 minutes to an hour, and will be followed immediately by a 15 to 20 min. hands-on demonstration to reinforce the subject matter. Local end-user speakers also present case studies about their fieldbus applications. The seminars conclude with a demonstration of Electronic Device Description Language (EDDL) technology.

Fieldbus Foundation Marketing Manager Bill Tatum stressed the importance of the end-user seminar program. "Technology education is a key initiative for our organization in North America and around the world," he said. "End users want to know more about the advantages of FOUNDATION fieldbus, and they're seeking help in putting fieldbus to work in their plants and factories. Successful fieldbus operations require the ability to effectively design, install, service, and operate a new breed of process automation system. Fieldbus is not more difficult than traditional automation technologies, but it is different, affecting the planning, implementation, and operational aspects of a project. Once learned, fieldbus is actually simpler than conventional control strategies in many respects."

Each 2010 end-user seminar participant will receive a certificate from the Fieldbus Foundation that can be used for PDH hours, as well as hard copies of presentation materials. Lunch is included. Seminar attendees will also receive discount certificates for 10% percent off regular course pricing at any North American Certified FOUNDATION Training Center.

For more information about the FOUNDATION fieldbus seminars, or to register for an upcoming event, visit the [Fieldbus Foundation Website](#).

[Return to Top](#)

Developer training taking place in Germany at BIS Prozesstechnik GmbH



Prozesstechnik

The Fieldbus Foundation is conducting training classes for FOUNDATION fieldbus product developers September 21-24 in Frankfurt, Germany. The classes will be held at BIS Prozesstechnik GmbH in the Industriepark Höchst next to Frankfurt International Airport.

BIS Prozesstechnik GmbH has been a certified FOUNDATION Fieldbus Center of Excellence since May 2004, and was involved with the Fieldbus Foundation's Certified Training Program. The program is designed to meet the educational requirements of process engineering personnel, process operators, and instrumentation and control technicians, and to raise the visibility and prestige of the institutions delivering FOUNDATION fieldbus training to a new and exclusive level.

Two comprehensive developer courses are offered: "Introduction to FOUNDATION Fieldbus" is taking place Tuesday, Sept. 21; the "Advanced Principles of FOUNDATION Fieldbus" will occur Sept. 22-24. The courses are designed for beginning and advanced fieldbus development professionals, respectively.

Vendor-neutral, the "Introduction to FOUNDATION Fieldbus" course is intended for instrumentation manufacturers getting started with FOUNDATION technology and seeking to develop fieldbus products; new engineers at existing companies; engineers interested in the latest advancements; and those looking to refresh their training. Students will become familiar with the basic concepts and new terminology related to the FOUNDATION integrated architecture. They will learn the key strategies for wiring and installation of a fieldbus network. Special emphasis will be placed on design issues such as power requirements, device types, and topologies.

“Introduction to FOUNDATION Fieldbus” assumes little or no prior knowledge of FOUNDATION technology, but students should already be familiar with process control and existing 4-20 mA technology found in present day installations.

Also vendor-neutral, “Advanced Principles of FOUNDATION Fieldbus” is intended for manufacturers and developers of fieldbus hardware and software. The course is best suited for development engineers, test engineers, and all who wish to understand the detailed inner workings of a fieldbus device. “Introduction to FOUNDATION Fieldbus” is a prerequisite for this advanced class. Students should be familiar with the basic terminology of FOUNDATION technology, and have a general understanding of its communications protocol, function block execution, linkages, and DDs.

For more information or to register for a training course, visit the [Developer Training](#) page on the Fieldbus Foundation [Website](#).

[Return to Top](#)

FOUNDATION technology seminars scheduled across South Africa

The Fieldbus Foundation Southern Africa Marketing Committee (FFSAMC) is participating in a series of CONTROL Roadshows during 2010. Events are presently scheduled at the following South Africa locations:

- September 16: Rustenburg
- October 21: Vaal

For more information about these and future South Africa events, visit the Fieldbus Foundation [Website](#).



[Return to Top](#)

Educational events will be held worldwide this fall

The Fieldbus Foundation is holding informational and educational events around the world this fall. Make plans now to attend an event in your area.

LOCATION	DATE	EVENT and CONTACT INFORMATION
EVENTS IN NORTH AMERICA		
New Orleans, LA, USA	Oct. 19, 2010	FOUNDATION Fieldbus End User Seminar Click here for more information
Beaumont, TX, USA	Oct. 21, 2010	FOUNDATION Fieldbus End User Seminar Click here for more information
EVENTS IN EMEA (EUROPE, MIDDLE-EAST, AFRICA)		
Istanbul, Turkey	Sept 29, 2010	FFCEEMC Meeting Click here to email for more information
Rome, Italy	Oct. 12, 2010	TECNIP-FOUNDATION Fieldbus End User Seminar Click here to email for more information
Twickenham, England	Oct. 12, 2010	FOUNDATION Fieldbus End User Seminar Click here to email for more information
Vaal, South Africa	Oct. 21, 2010	Control Roadshow Click here for more information
Miskolc-Lillafured, Hungary	Oct. 25-27, 2010	DCS 16 Conference Click here to email for more information

Plock, Poland	Oct. 2010 (TBD)	FOUNDATION Fieldbus Roadshow Click here to email for more information
Milan, Italy	Nov. 2010 (TBD)	ENEL-FOUNDATION Fieldbus End User Seminar Click here to email for more information
Brno, Czech Republic	Nov. 2010 (TBD)	FOUNDATION Fieldbus Roadshow Click here to email for more information
RDM Campus, Rotterdam, Netherlands	Nov. 11, 2010	FOUNDATION Fieldbus Roadshow Click here to email for more information
Jubail, Saudi Arabia	Dec. 5, 2010	FOUNDATION Fieldbus End User Seminar/Roadshow Click here for more information
Yanbu, Saudi Arabia	Dec. 6, 2010	FOUNDATION Fieldbus End User Seminar/Roadshow Click here for more information
Kuwait City, Kuwait	Dec. 8, 2010	FOUNDATION Fieldbus End User Seminar/Roadshow Click here for more information
Ruwais, United Arab Emirates	Dec.9, 2010	FOUNDATION Fieldbus End User Seminar/Roadshow Click here for more information
Gdansk, Poland	Jan. 2011 (TBD)	FOUNDATION Fieldbus Roadshow Click here to email for more information
Bayer Kasino Leverkusen, Germany	Jan. 26, 2011	6th German End User Conference Click here for more information
Linz, Austria	Oct. 4-6, 2011	FOUNDATION Fieldbus Presentation, SMART Automation Exhibition Click here to email for more information
EVENTS IN ASIAPACIFIC		
Nanjing, China	Nov. 11, 2010	FOUNDATION Fieldbus End User Seminar More information to come
Thailand	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Malaysia	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Jakarta, Indonesia	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
The Philippines	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Osaka, Japan	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Korea	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
EVENTS IN INDIA		
Mumbai, India	Sept. 21-24, 2010	Automation 2010 More information to come

For more information, visit the [Fieldbus Foundation Website](#).

[Return to Top](#)

Technology News

Final release of ITK 6.0 now tests for new field diagnostic capabilities



The Fieldbus Foundation has issued the final release of its H1 Interoperability Test Kit (ITK) 6.0. This powerful test tool, which tests the functionality of a fieldbus device and its conformity with the FOUNDATION™ function block and transducer block specifications, is available to members holding an active maintenance agreement.

The H1 ITK 6.0 has been updated to test for new, required field diagnostics capabilities, which standardize how all fieldbus devices communicate their diagnostic data to the process control and asset management systems—regardless of vendor. The test kit also employs an all-new, intuitive user interface.

All ITK 6.0 devices now support the latest advancements in field diagnostics according to the NAMUR NE107 recommendations, which build upon the existing, powerful diagnostic capabilities of FOUNDATION fieldbus equipment. At the same time, they add a greater degree of organization so that field instruments can represent their diagnostics in a more consistent way.

For example, employing field diagnostics capabilities, non-critical diagnostics can be routed to a maintenance station for future work, while critical diagnostics can be routed to operations with specific recommendations on how to resolve an instrumentation issue. This and other advanced ITK 6.0 features are fully configurable to provide extensive flexibility in user applications.

Last year, the Device ITK Profile Final Specification (FS 1.0) was released to provide an easy way of mapping field device requirements to the foundation's latest ITK versions. This specification, which is the basis for the current updates to the ITK test system, helps fieldbus device suppliers identify minimum required features for their products, while allowing existing equipment manufacturers to identify the latest requirements.

The Fieldbus Foundation's ITK 6.0 test kit verifies the functionality of an H1 (31.25 kbit/s) device and its conformity with the FOUNDATION fieldbus Function Block and Transducer Block specifications. An excellent tool for troubleshooting and debugging devices, the test kit includes all hardware and software required to ensure a manufacturer's complete device interoperability as specified by the foundation's official registration testing procedure.

By using the H1 ITK, device developers can run tests identical to those used by the Fieldbus Foundation before submitting their device for official registration. Additional ITK 6.0 updates include support for testing Custom Profiled Function Blocks and software components built with VC9.

For more information about the test kit, [email](#) Member Services or call the Fieldbus Foundation at 512-794-8890.

For pricing information or to download a FAQ sheet, go to the "Tools" page of the [Fieldbus Foundation Website](#).

[Return to Top](#)

Updated FOUNDATION technical specification includes support for ITK 6.0



The Fieldbus Foundation has announced that an updated version of its FOUNDATION fieldbus technical specification is now available. The latest specification includes guidance supporting the development of fieldbus devices and host systems that use advanced field diagnostics according to the NAMUR NE107 recommendation, and support for the upcoming H1 Interoperability Test Kit (ITK) 6.0.

The Fieldbus Foundation's specifications define the open, non-proprietary FOUNDATION fieldbus protocol. The technology provides an all-digital, two-way, multi-drop communications link among smart field devices and automation systems. It serves as the network for instruments used in process automation, and has a built-in capability to distribute the control application across the network.

According to Stephen Mitschke, Fieldbus Foundation Manager—Fieldbus Products, the latest FOUNDATION fieldbus specification reflects growing industry demand for, and adoption of, NE107 field diagnostics. "Field diagnostics, as implemented in FOUNDATION fieldbus, standardizes how today's intelligent devices communicate—regardless of the vendor," said Mitschke. "This technology ensures that the right message will be delivered to the right person in the plant, at the right time. Operators, engineers, and technicians not only receive detailed information, but the information is provided in a categorized manner that makes data easier to assess and act upon."

The updated specification also defines the minimum requirements for testing of hosts employing FOUNDATION for Safety Instrumented Functions, which is an ideal platform for advancing standards-based solutions for plant SIFs, added Mitschke. "FF-SIF enables process end users to realize significant reductions in their total cost of ownership by extending fieldbus benefits into plant safety systems," he said.

FOUNDATON fieldbus Specification Version 2010.1 includes:

- Updates to the CFF Specification (FF-103) and Function Block Specification (FF-890, FF-891 and FF-892) to reflect changes implemented in the soon-to-be-released Interoperability Test Kit (ITK) 6.0. This includes support for required field diagnostics capabilities, which standardize how all fieldbus devices communicate their diagnostic data to process control and asset management systems. The test kit will also employ an all-new, intuitive user interface. Additional ITK 6.0 features will include support for testing Custom Profiled Function Blocks and software components built with VC9.
- Updates to the Host Profile Specification (FF-569), which include new FF-SIF host test requirements, as well as "B" host profile support for all newly registered fieldbus hosts. Host features that have gone from "optional" to "mandatory" with the new "B" host profiles include: Configuration and Access to Field Diagnostics, Block Instantiation, Multiple Capability Levels, Enhanced Function Blocks, Profiled Custom Function Blocks, Configuration of Scheduled Control Function Blocks, and DD v5.1 Device-Level Access. Support for NE107 field diagnostics is required as part of the second phase of host testing and registration.
- Addition of a Block Instantiation and Capability Levels Application Note (AN-008) providing guidelines to both host and device vendors on how to handle system interoperability considerations.
- Update of the FOUNDATION fieldbus AG-181 System Engineering Guidelines to Version 3.1, which provides the definition of the design, specification, installation, configuration, and commissioning for a Foundation fieldbus-based control systems.

Fieldbus Foundation members purchasing or renewing a specification maintenance agreement will be able to download a complete copy of the FOUNDATION fieldbus H1 and HSE Specifications, including all updates to these specifications, from the Fieldbus Forums portion

of the Fieldbus Foundation Website.

For more information about FOUNDATION fieldbus specifications and maintenance agreement options, visit the [Fieldbus Foundation Website](#).

[Return to Top](#)

Latest FOUNDATION H1 conformance test kit 3.0 is a complete testing solution



Ⓢ The Fieldbus Foundation has released the H1 Conformance Test Kit (H1 CTK) 3.0. The kit provides enhanced capabilities for developing and testing Foundation fieldbus H1 (31.25 kbit/s) device communications stacks, and is now updated to support a current hardware platform and operating systems and expanded test case functionality.

The H1 CTK is a complete testing solution enabling fieldbus device developers to ensure their H1 communication stack conforms to the Fieldbus Foundation's test requirements. The fieldbus communication stack is the messaging component of a field device. Specifically, the stack is composed of the data link layer, the fieldbus access sub-layer, the fieldbus message specification, and system/network management agents. All stack conformance testing is performed by the Fraunhofer IOSB, a non-profit testing agency located in Karlsruhe, Germany, as a prerequisite for official registration.

An excellent tool for troubleshooting and debugging a wide range of fieldbus instrumentation, the H1 CTK will verify the correct communication behavior of an H1 device as defined in the Foundation fieldbus specifications. The latest version of the H1 conformance test kit, H1 CTK 3.0 includes a platform upgrade with support for current hardware such as PCI and PCMCIA NI-FBUS cards. The kit has also undergone a test engine code update to 32 bit. In addition, its enhanced user interface provides support for Windows XP/Vista operating systems.

Most importantly, the H1 CTK 3.0 offers significantly improved testing functionality, with each test case acting as a separate, modular application. Users can now compile and edit test cases according to their own development purposes. With the included Visual Studio 2008 solution, they can also take full advantage of the powerful MS Visual Studio debugging tools to track down any stack implementation bugs.

According to Stephen Mitschke, Fieldbus Foundation manager-fieldbus products, the H1 CTK 3.0 is intended for device developers who purchased a license for the original H1 conformance test kit and want to upgrade to the latest stack testing technology. "The H1 CTK is a successful, proven testing solution that has been in use around the world for over a decade," said Mitschke. "The new version of the tool has been updated to the latest testing capabilities, as well as an up-to-date platform offering a familiar, user-friendly Windows interface. The H1 CTK 3.0 is designed for suppliers developing new H1 communications stacks, as well as those who have modified an existing stack and want to run test cases pre-qualifying it for the registration process."

The H1 stack conformance test consists of a suite of both automated and manual test procedures. The automated test procedures validate both Fieldbus Message Specification (FMS) and System Management (SM) messaging. The test system validates that messages for the different services are both formed and decoded correctly by the stack-under-test (SUT). Other testing procedures validate the data structures present in the device's Object Dictionary (OD) are conformant to the current Foundation specifications. Additional tests examine the distribution and synchronization of the application time clock. Finally, those stacks classified as a Link Master undergo special testing to validate Link Active Scheduler (LAS) functionality.

H1 CTK 3.0 is available now to companies signing a new license agreement. Current license holders may obtain the updated kit at a special discounted price.

For more on the test kit, visit the [Fieldbus Foundation Website](#) and click on [Development Resources](#) under the [Foundation Technology](#) tab, or [email](#) the Fieldbus Foundation.

[Return to Top](#)

Products & Solutions

Honeywell Field Device Manager adds key capabilities



Honeywell's award-winning Field Device Manager (FDM) now supports FOUNDATION fieldbus advanced diagnostics through FDT/DTM technology. FDM R410 has been enhanced to access devices connected to Experion R400 FIMs and to provide support for those devices through DTMs, in addition to its existing FDT/DTM support for HART, Profibus, and HART over Profibus.

FDM detects smart devices and automatically adds them to its database. It uses information accessed from the actual, connected device to assign the proper device template automatically, saving time by eliminating the need to build templates and assign them to devices. Users can now take full advantage of maintenance and advanced diagnostic features available only through DTMs for FOUNDATION fieldbus devices.

Learn more by visiting the [Honeywell Website](#).

[Return to Top](#)

Microcyber provides complete Fieldbus Development Toolkits



Do you need development assistance? Do you want to supply a variety of fieldbus products? Do you seek independent intellectual property rights to manufacture fieldbus devices in an efficient amount of time? If so, Microcyber's Fieldbus Development Toolkits are right for you!

The toolkits feature:

- CFF description template (only for FOUNDATION fieldbus H1)
- Source code for Device Description (DD) template (DDL language, only for FOUNDATION fieldbus H1)
- EDDL/GSD file template (text file, only for Profibus PA)
- Source code for function blocks (C language)
- Protocol Library (FOUNDATION fieldbus H1 or Profibus PA)
- Function block interface library
- Operation system interface
- Source code of communication controller drive (C language)
- Training courses

Microcyber provides technical support for FOUNDATION fieldbus registration testing and integration testing with all kinds of DCS systems. FOUNDATION fieldbus interoperability test kit (ITK) press-testing is also available.

Learn more, and download case studies and datasheets for development solutions, by visiting the [Microcyber Website](#).

[Return to Top](#)

Updated MooreHawke whitepaper, 'Installing Fieldbus,' available online

Many automation engineers are coming face-to-face with fieldbus applications for the first time. Although fieldbus is an established technology with many benefits, fieldbus installations require some additional considerations over and above traditional 4-20mA projects.

MooreHawke's updated whitepaper, "Installing Fieldbus," provides the fundamentals you need when

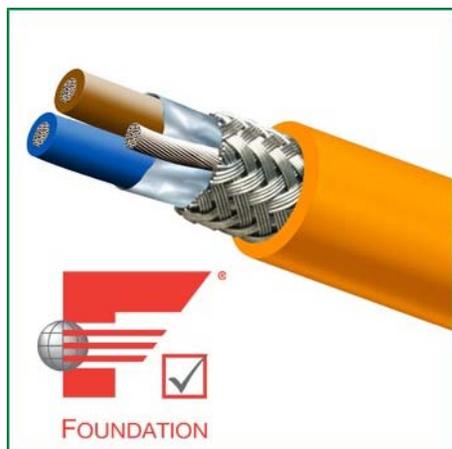


installing fieldbus in your plant. The whitepaper provides practical advice on fieldbus segments, fieldbus power supplies and device couplers, short circuit protection, segment termination, creating redundant fieldbus segments, hazardous area installations, and much more.

This whitepaper is available on the MooreHawke [Website](#).

[Return to Top](#)

Northwire cables provide superior ground integrity



DataCell Foundation fieldbus M-EZ (Marshal-EZ) cables from Northwire guarantee performance and are custom configured to your requirements. They feature up to 24 individually foil-shielded pairs with an extruded binder over each pair—all contained within a single cable for fast, simple installation into marshaling cabinets without shrink tubing and superior ground system integrity that eliminates the potential for cross-continuity between shields.

FF-844 certified, DataCell Foundation fieldbus cables are ITC/PLTC rated for exposed-run applications. They pass crush and impact tests for metal-clad cable, eliminating the need for conduit. The line includes arctic-rated and marine shipboard-listed versions, suitable for temperatures to -60 °C.

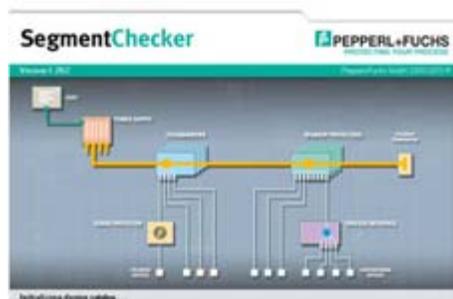
CSA armored cables are also offered. Options include: single-pair or multi-paired bus cables; individually or overall foil-shielded pairs with drain; overall tinned copper braid for low-frequency noise immunity; 16 AWG for longer runs and 18 AWG in single-shielded, twisted-pair spur or multipair cable; and several jacket and inner-conductor colors with optional ground wire. Characteristic Impedance Z_0 is $100 \Omega \pm 10 \Omega$ at 31.25 kHz.

Northwire offers no-cost design and prototyping services, no minimum length or quantity requirements, and fast delivery. Other versions may be obtained off the shelf in bulk quantities. Complimentary samples are available.

For more information, visit the Northwire [Website](#) or call the company at 715-294-2121.

[Return to Top](#)

Pepperl+Fuchs updates its Advanced Diagnostic Module DTM software



An updated version of Pepperl+Fuchs Advanced Diagnostic Module DTM software is now available. Advanced Diagnostic Modules (ADM) monitor the quality of fieldbus communication for FOUNDATION fieldbus H1 and Profibus PA networks. The Diagnostic Manager software includes a number of updates that dramatically speeds fieldbus commissioning and takes the guesswork out of troubleshooting for ADM users. This smart software tool translates information provided by the ADM into actionable information and can run on a server located directly in the control room, turning the complete fieldbus infrastructure into an open book that can be read without expert knowledge.

“The most significant improvement to the new Diagnostic Manager is a built-in expert system that automatically learns the communications behavior of a segment during commissioning, and over time is able to intelligently diagnose any situation on the basis of past experience,” says Brian Traczyk, product manager, Pepperl+Fuchs. “As a result, users are provided with specific warnings as soon as the software detects any condition that might lead to a critical situation. Such warnings are complemented by incident-related information in clear text that points to possible causes and recommends remedies.”

Equipped with this information, field technicians are able to know what needs to be done before they arrive on site, and no longer face the sometimes time-consuming task of searching for the actual cause of a problem. As a result, troubleshooting time is minimized, plant shutdowns can largely be avoided, and the availability of the complete system is considerably improved.

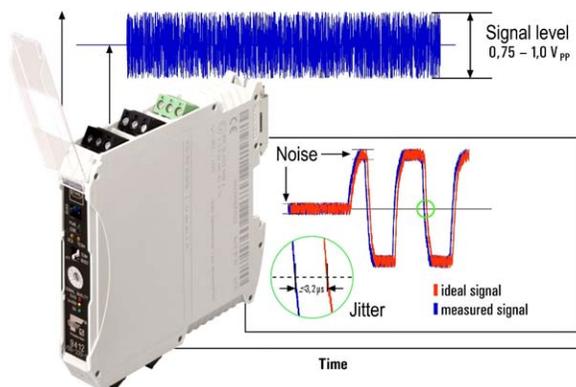
Other features of the update include:

- *Automated tag reading.* The ADM is now able to read and document tags and device IDs in combination with any FOUNDATION fieldbus host; and
- *Improved Oscilloscope.* The device offers more trigger events and automatically captures up to 10 shots in a row; each bit and telegram is identified with type and value, source, and destination address.

Learn more by visiting the Pepperl+Fuchs [Website](#), or [email](#) the company for more information. .

[Return to Top](#)

Capabilities for physical layer diagnosis now standard in R. Stahl power supplies



ISbus series Fieldbus Power Supplies from R.Stahl now feature extensive capabilities for physical layer diagnosis as a standard integrated feature. This integrated functionality enables complete and continuous plant monitoring across FOUNDATION fieldbus H1 segments at nearly no extra expense.

Besides ensuring overload and short circuit detection, this solution facilitates continuous monitoring of all quality relevant physical parameters of the fieldbus: trunk voltage and current, signal and noise levels, line unbalance, and jitter.

Diagnostic functions already can be used in the installation phase and employed during regular operation (for example, for troubleshooting). A serial interface on the front side of the fieldbus power supply ensures connectivity

for readouts from any standard PC, with no need for special drivers or DTMs. With the advanced version, alarm thresholds for the detection of the deterioration of the signal transmission quality can be individually adjusted. Alarming is done via a potential-free relay contact, and is displayed at the module itself by color LEDs using a traffic light scheme. An add-on Diagnosis Communication Module provides online access. Featuring enhanced EDD support, this option allows for physical layer information from up to eight H1 bus segments to be cyclically routed to an asset management system for further analysis.

For more information, visit the R. Stahl [Website](#).

[Return to Top](#)

SAIT certified Fieldbus training center announces numerous developments

SAIT Polytechnic completed its rigorous certification process under the Foundation Certified Training Program (FCTP) in June 2010. Its comprehensive, five-day FOUNDATION fieldbus Certified Professional program was thoroughly evaluated based on the strict criteria specified by the Fieldbus Foundation.

SAIT has been training in fieldbus for 10 years, adapting to industry's changing needs along the way. To reflect the most up-to-date standards and better demonstrate the interoperability of FOUNDATION fieldbus, it recently upgraded its lab to incorporate FOUNDATION High Speed Ethernet (HSE) technology. With more 20 manufacturers of fieldbus equipment represented in the fieldbus lab facilities, each trainee has his own training station, which includes four FOUNDATION fieldbus devices from four manufacturers.

SAIT proudly claims Ian Verhappen, P. Eng., as its certified FOUNDATION fieldbus instructor. Ian brings a wealth of experience and subject matter expertise to the SAIT program. One of



9005 Mountain Ridge Drive, Bowie Building – Suite 200, Austin, Texas 78759-5316 USA

Tel: 512.794.8890 • Fax: 512.794.8893 • E-mail: info@fieldbus.org

www.fieldbus.org

You are receiving this e-mail because you have requested either a newsletter or magazine from CFE Media, LLC.

SUBSCRIBE: [Click here](#) to subscribe to Fieldbus Facts Online, other newsletters, or to change your e-mail address/profile data

UNSUBSCRIBE: To unsubscribe to Fieldbus Facts Online send an e-mail with 'Fieldbus Facts' in the subject line to unsubscribe@cfemedia.com

CONTACT US: Click here for [editorial](#) or [advertising](#) questions.

QUESTIONS: If you have questions or need further assistance, please contact our [Customer Support Staff](#).

PRIVACY: Click here to view our Privacy Policy

Copyright 2010 CFE Media, LLC. All rights reserved.