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Fieldbus Facts Online

Your Global Source for FOUNDATION™ Technology News

June 2011

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Foundation Briefs

Fieldbus educational events planned worldwide throughout 2011

The Fieldbus Foundation will hold informational and educational events around the world in 2011. Make plans now to attend an event in

your area. The seminar program helps process industry end users understand the operational and economic benefits of the Foundation automation infrastructure.

Series of End User Seminars in North America

The seminars in the Americas are oriented toward process control end users and engineering firms. The one-day seminars cover all aspects of FOUNDATION automation infrastructure management. They address core technology topics, including Open, Scalable Integration/Segment Design & Layout; Process Integrity/Safety Integrity Levels (SIL) and Safety Instrumented Functions (SIF); and Business Intelligence/Maintenance & Troubleshooting.

Each topic is discussed in detail for 45 min. to an hour, followed immediately by a hands-on demonstration of 15-20 min. to reinforce the subject matter. In addition, newer advances such as Field Diagnostics, Control in the Field, and Wireless will be discussed and end-user speakers will present case studies about their fieldbus applications. A demonstration addressing Electronic Device Description Language (EDDL) technology will conclude the event. Each participant will receive a certificate for PDH hours and a copy of the presentation materials. Lunch is included.

LOCATION	DATE	EVENT and CONTACT INFORMATION
EVENTS IN THE AMERICAS		
Rio de Janeiro, Brazil	June 16, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Mexico City, Mexico	Aug. 23, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Calgary, Alberta, Canada	Sept. 20, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Ft. McMurray, Alberta, Canada	Sept. 22, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Detroit, Michigan, USA	Oct. 11, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Corpus Christi, Texas, USA	Nov. 7, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Baton Rouge, Louisiana, USA	Nov. 9, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Beaumont, Texas, USA	Nov. 10, 2011	FOUNDATION Fieldbus End User Seminar Click here for more information
Austin, Texas, USA	Nov. 15, 2011	Developer Training — Introduction to FOUNDATION Fieldbus Click here for more information
Austin, Texas, USA	Nov. 16-18, 2011	Developer Training — Advanced Principles of FOUNDATION Fieldbus Click here for more information
EVENTS IN EMEA (EUROPE, MIDDLE-EAST, AFRICA)		
Secunda, South Africa	July 21, 2011	CONTROL Roadshow Click here for more information
Port Elizabeth, South Africa	Aug. 18, 2011	CONTROL Roadshow Click here for more information
Frankfurt, Germany	Sept. 20, 2011	Developer Training — Introduction to FOUNDATION Fieldbus Click here for more information
Frankfurt, Germany	Sept. 21-23,	Developer Training—Advanced Principles of

	2011	FOUNDATION Fieldbus Click here for more information
Linz, Austria	Oct. 4-6, 2011	FOUNDATION Fieldbus Presentation, SMART Automation Click here for more information
Vanderbiljpark, South Africa	Oct. 20, 2011	CONTROL Roadshow Click here for more information
University of Miskolc, Lillafüred, Hungary	Oct. 24-26, 2011	DCS17 Conference Click here for more information
Plock, Poland	Nov. 9, 2011	FOUNDATION Fieldbus Live Roadshow & Demonstration More information to come
STC Brielle, Rotterdam, The Netherlands	Nov. 10, 2011	FOUNDATION Fieldbus End User Conference More information to come
Abu Dhabi, UAE	Dec. 12-13, 2011	Multaqa 2011: FOUNDATION Fieldbus End User Conference More information to come
EVENTS IN ASIA/PACIFIC		
Kaohsiung, Taiwan	July 6, 2011	FOUNDATION Fieldbus End User Seminar More information to come
Urumuqi, China	July 21, 2011	FOUNDATION Fieldbus End User Seminar More information to come
Mumbai, India	Sept. 20-23, 2011	Automation 2011 Exhibition More information to come
Seoul, Korea	October 2011	FOUNDATION Fieldbus End User Seminar More information to come
Shanghai, China	Oct. 20, 2011	FOUNDATION Fieldbus End User Seminar More information to come
Tokyo, Japan	Nov. 16-18, 2011	JEMIMA Exhibition More information to come
Rayong, Thailand	November 2011	FOUNDATION Fieldbus End User Seminar More information to come
Kuala Lumpur, Malaysia	November 2011	FOUNDATION Fieldbus End User Seminar More information to come
Jakarta, Indonesia	December 2011	FOUNDATION Fieldbus End User Seminar More information to come
Australia	To be determined	FOUNDATION Fieldbus End User Seminar More information to come

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

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Free training available: Take advantage of FOUNDATION fieldbus salesforce seminars

The Fieldbus Foundation is offering free, half-day FOUNDATION technology salesforce training



seminars in 2011 for industrial automation salespeople, system integrators, and manufacturer representatives. The events will be held across North America in conjunction with the foundation's end-user seminar program.

The first seminar took place May 25, 2011 at the Doubletree Hotel in Carson, CA. Six additional sessions are scheduled this year to coincide with the end-user seminar program. Sales training will occur either the day before or day after each seminar. (For more information, visit the [Events page](#) under the News Room tab on the Fieldbus Foundation website.) Locations and dates of the 2011 end-user seminars are:

- Calgary, AB, Canada: Sept. 20
- Ft. McMurray, AB, Canada: Sept. 22
- Detroit, MI: Oct. 11
- Corpus Christi, TX: Nov. 7
- Baton Rouge, LA: Nov. 9
- Beaumont, TX: Nov. 10

Intended to provide a greater understanding of the operational improvements and business benefits delivered by the FOUNDATION automation infrastructure, the sales training seminars address key topics of interest for salespeople involved with control and instrumentation products. In particular, they strive to dispel myths about FOUNDATION technology and provide facts and data upon which salespeople can truly rely. Leading experts in fieldbus technology are conducting the vendor-neutral presentations.

The foundation's comprehensive half-day seminars are ideal for busy professionals seeking to expand their knowledge of FOUNDATION technology and learn more about its business value proposition in a wide range of industrial markets. FOUNDATION technology is increasingly being adopted in migration and modernization projects as well as grassroots facilities. The business value proposition of the technology is more powerful than ever.

All attendees will receive a sales "playbook" with electronic copies of presentations and educational material distributed throughout the day, as well as hard copies of much of the material. These resources will arm salespeople with in-depth information and ways to find answers to questions about FOUNDATION fieldbus.

For more information about FOUNDATION technology sales training seminars, visit the Fieldbus Foundation [Events Page](#).

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Five new FOUNDATION technology trainers earn FCTP program certification

Five new fieldbus technology trainers have received certification under the FOUNDATION Certified Training Program (FCTP). The program establishes uniform standards for fieldbus educational curriculum and instructors around the globe, and defines acceptable levels of learning for students of the technology.

The newly certified FOUNDATION instructors are:

- Dr. Bindert Douma, STC Brielle, The Netherlands. Douma has an extensive background at Shell Global Solutions, a leading global energy company.
- Ed Williamson, SAIT Polytechnic, Calgary, AB, Canada. Williamson is an instructor at SAIT with considerable background at Opti Canada, a developer of major petroleum projects in the Canadian oil sands region.
- Mark Tarrant, SAIT Polytechnic, Calgary, AB, Canada. Tarrant has extensive process automation experience with companies such as Emerson Process Management and is the lead Distributed Control System (DCS) instructor at SAIT.
- Dr. Yoshiharu Amano, Waseda University, Tokyo, Japan. Amano is a professor at Waseda University whose areas of research include analysis and optimization of energy systems and development of autonomous mobile systems.
- Yoshitsugu Morioka, Waseda University, Tokyo, Japan. Morioka has many years of experience with Yokogawa and the Fieldbus Foundation. He is currently a visiting researcher at the Waseda University Research Institute for Science and Engineering.



Fieldbus Foundation President and CEO Rich Timoney congratulated the new certified trainers. "The dedicated technology instructors

participating in the FCTP will make a significant contribution to the growth of FOUNDATION fieldbus and the future of a skilled automation workforce," said Timoney. "By attending training courses at an institution that is included in the FCTP, students will gain access to highly skilled trainers possessing a strong knowledge of the basic and advanced principles of FOUNDATION technology. The goal of the FCTP," he continued, "is to identify and work with qualified training sites and personnel to deliver theoretical and practical hands-on instruction in the design, engineering, operation, and maintenance of systems, instruments, and valves utilizing FOUNDATION fieldbus in a consistent, comprehensive, and quality assured manner."

Recognition under the FCTP means that FOUNDATION fieldbus training courses are taught at a certified training site by a certified instructor using certified curriculum. The core instructional content, developed by a team of qualified instructors from various institutions worldwide, is consistent across all training facilities. Through the program, all educational institutions, curriculum, and instructors are audited to ensure they meet standardized educational requirements. A complete list of certified training centers around the world may be found on the [Fieldbus Foundation website](#).

The FCTP currently offers three types of certification: FOUNDATION Certified Professional, FOUNDATION Certified Support Specialist, and FOUNDATION Certified Technical Specialist. Additional certifications may be added in the future. Any certified trainer may teach all certifications.

Educational institutions must endure rigorous procedures to gain FCTP status and to receive course instructor and curricula certification. Certified training centers are required to maintain multiple hosts and devices onsite to demonstrate competence with fieldbus technology. They are also audited to ensure 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 determine 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.

For more information, visit the certified training page in the education section of the Fieldbus Foundation [website](#).

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New FOUNDATION technology blog addresses wide range of issues



The Fieldbus Foundation has started a new blog on [its website](#) to address a wide range of issues affecting the world of FOUNDATION technology. It covers topics of interest to fieldbus equipment suppliers, end users, engineering firms, system integrators, and more.

According to Larry O'Brien, Fieldbus Foundation global marketing manager and moderator of the new blog, need is increasing for up-to-date fieldbus news and analysis within the global industrial automation community. "FOUNDATION fieldbus has emerged as the 'technology-of-choice' among digital control solutions for the process automation industry—particularly in growing markets such as Asia-Pacific, Latin America, and the Middle East," said O'Brien. "Today, with millions of devices installed and FOUNDATION fieldbus

controlling some of the world's largest process plants, there is strong interest in learning more about this enabling technology."

A sampling of recent posts on the FOUNDATION fieldbus blog includes:

- Certification of FOUNDATION fieldbus trainers from several leading educational institutions worldwide;
- Introduction of new FOUNDATION-compliant products by a number of leading automation equipment suppliers;
- Successful FOUNDATION technology installation in the municipal water industry; and
- Fieldbus host interoperability testing under the Fieldbus Foundation's new "61b" Host Profile Registration process.

The blog includes a Twitter feed with additional updates on FOUNDATION fieldbus developments around the world.

O'Brien, who joined the Fieldbus Foundation in March 2011, was formerly with the ARC Advisory Group and has more than 18 years experience in process automation as a research director and industry analyst. He has been tracking and reporting on FOUNDATION fieldbus for much of his career. O'Brien is responsible for developing the strategic marketing direction for FOUNDATION fieldbus worldwide.

Be sure to visit the Fieldbus Foundation blog on the Fieldbus Foundation [website](#).

Global News & Events

First Benelux Fieldbus seminar in Kalmthout meets with great success



The first end-user seminar hosted by the recently expanded Fieldbus Foundation Benelux Marketing Committee (FFBeneluxMC) has met with great success. The event was held in Belgium on Thursday, May 19, at the Acta vzw training centre in Kalmthout, near Antwerp.

A large audience of more 75 delegates, including around 40 end users, attended the seminar. A number of people even stayed beyond the official close of the program—a true testimony to the quality of the event. Due to the large numbers, presentations were held as parallel sessions, helping to ensure active discussions and interaction between the presenters and the audience.

Rob van der Zwan, chairman—FFBeneluxMC, opened the seminar's afternoon session by introducing the new Benelux Marketing Committee and unveiling its new logo. Hans Musters, Acta, also welcomed the delegates to the Acta training facility and gave a brief overview of the training centre, the facilities, and its activities.

Bindert Douma of the STC Group's Brielle training centre held a "Training Teaser" session in which he gave an overview of the five-day FOUNDATION fieldbus training course available at the Brielle facility in the Netherlands. Douma is a certified trainer from the STC Group's Brielle training centre, one of the first training establishments certified under the FOUNDATION Certified Training Program (FCTP).

Louis Claessens gave an informative end-user insight into the lessons learned through the implementation of FOUNDATION technology in the BASF Antwerp facility. He concluded by advising potential implementers of a FOUNDATION system to strike up and maintain a close working relationship with the system supplier, understand the principles of the system, and follow implementation recommendations closely.

Rob Sosef, FFBeneluxMC member, presented the operational and economic benefits of Control in the Field (CIF), a key advantage of FOUNDATION technology. Marcel Vennemann gave a short introduction to the proposed FOUNDATION Fieldbus Knowledge Centre, an FFBeneluxMC initiative due to be established soon.



Discussion forums after each presentation offered a unique opportunity to share end-user experiences and included open question-and-answer forums. This multi-directional flow of information is vital for established and prospective users of the technology and to the Fieldbus Foundation and its members supplying FOUNDATION products and services.

Attendees enjoyed a complimentary buffet dinner during which tours of the Acta Training Centre were organized. Acta's Pieter d'Espallier conducted live demonstrations in the facility's demonstration room, which houses a complete, functioning FOUNDATION fieldbus system.

For more information, visit the [Benelux events page on the Fieldbus Foundation website](#).

FOUNDATION training demonstrations at Process Expo 2011 draw huge interest

The Fieldbus Foundation Southern Africa Marketing Committee (FFSAMC) is delighted with the success of its presence at Process Expo 2011, held at the NASREC Expo Centre (Hall 5) in Johannesburg May 24-26, 2011. With its 18 sq m stand and use of live demonstration systems for FOUNDATION technology training sessions, the FFSAMC showed prospective end users the



functionality and ease of use of the technology and the extensive range of FOUNDATION systems, devices, and services available.

Process Expo 2011 offered an overview of the world of automation by showcasing solutions enabling the control, regulation, and automation of processes and operations. In addition to focusing on process automation, instrumentation, and control, the 2011 show placed a strong emphasis on education, training, and sustainability.

The 2011 event featured an "Automation Theatre" alongside registration, as well as a program of presentations at the six dedicated training rooms adjoining the main exhibition area. The daily program included a live, one-hour demonstration of FOUNDATION technology using newly commissioned, working demonstration systems. Bindert Douma, a certified trainer from the STC Group's Brielle facility, the Netherlands-based training centre certified by the Fieldbus Foundation under the FOUNDATION Certified Training Program (FCTP), conducted the technology demonstrations. Formal FOUNDATION fieldbus training opportunities will soon be available in South Africa at the STC-SA facility, the Johannesburg-based training centre affiliated with STC Group—Brielle.

FFSAMC sponsors of the Fieldbus Foundation stand at Process Expo 2011 included ABB, Emerson Process Management, Endress+Hauser, Honeywell, MTL/Extech, Pepperl+Fuchs/P+F Products, Samson/Samson Controls, Smar/Allpronix, STC-SA, Turck/RET Automation Controls, Weidmüller/Phambili Interface, and Yokogawa.

For more information, visit the [Southern Africa events page](#) on the Fieldbus Foundation [website](#).

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Technology News

First two Fieldbus hosts with new mandatory host profile "61b" registered



The Fieldbus Foundation has registered the first two FOUNDATION fieldbus hosts incorporating new, mandatory host profile "61b." Fieldbus hosts supplied by Emerson Process Management (DeltaV Digital Automation System with AMS Suite: Intelligent Device Manager) and GE Energy (GE ControlST) passed tests verifying their support for NAMUR NE107 field diagnostics, which is now required as part of the second phase of host testing and registration.

In the FOUNDATION fieldbus automation infrastructure, hosts can include configuration tools, recording devices, alarm display panels, human-machine interfaces (HMIs), or a combination of functionality. Host profiles are key to fieldbus system interoperability, defining required features for different classes of tested and registered hosts. They include:

Class 61—Integrated Host, Class 62—Visitor Host, Class 63—Bench Host Non-Commissioned Device, and Class 64—Bench Host Commissioned Off-Line Device.

Host features that have moved from "optional" to "mandatory" with the new host profile 61b are:

- **Block Instantiation:** Allows full utilization of fieldbus devices supporting instantiable function blocks. It is primarily intended for control in the field (CIF).
- **Multiple Capability Levels:** For devices where certain blocks/features are optional (licensed), the standard or higher capability level can be set in the tag placeholder during system configuration to prevent unsupported blocks from being used in the control strategy. This feature prevents surprises during commissioning and eases device replacement.
- **Enhanced Function Blocks:** Allows full utilization of enhanced blocks (standard blocks with additional parameters).
- **Profiled Custom Function Blocks:** Allows full utilization of non-standard blocks.

- *Configuration of Scheduled Control Function Blocks*: Allows developers to build CIF control strategies.
- *DD V5.1 Device-Level Access (enhanced Electronic Device Description Language with cross-block)*: Makes fieldbus devices easier to use by enabling a dashboard with all diagnostics on the same page. All setup is on one page, regardless of which block it is in.

According to Stephen Mitschke, Fieldbus Foundation Director-Fieldbus Products, the registration of hosts supporting host profile 61b will improve the user experience at sites using FOUNDATION fieldbus-based control systems. "Support for device-level menus, one of the additional features mandated by host profile 61b, will make it easier for users to configure and maintain fieldbus devices," said Mitschke. "In addition, registered hosts must now demonstrate the ability to configure field diagnostics in devices. An enhanced, structured view of diagnostics according to NE107 contributes to effective asset management."

Emerson's chief technology officer Peter Zornio added, "With this registration, Emerson reaffirms its leadership in FOUNDATION fieldbus technology, and will drive further growth. A best-in-class FOUNDATION fieldbus solution is a key part of Emerson's I/O on Demand offering to our customers, allowing them to choose the best I/O solution for each of their applications. In fact, five out of ten of our largest DeltaV systems on order right now are using FOUNDATION fieldbus technology."

Using the power of FOUNDATION fieldbus, and considering the NE107 recommendations for field diagnostics, the Fieldbus Foundation developed a profile specification enhancing the organization, integration, and presentation of device diagnostics within fieldbus systems. The FOUNDATION fieldbus diagnostic profile includes a standard and open interface for reporting all device alarm conditions, and provides a means of categorizing alert conditions by severity. The technology facilitates routing of alerts to appropriate consoles based on user-selectable severity categories. In other words, it sends the right information to the right person at the right time without flooding the operator with alarms that are irrelevant to his duties. Furthermore, it provides recommended corrective actions and detailed help, as well as an indication of the overall health of the device.

More information about registered FOUNDATION fieldbus hosts may be found on the Fieldbus Foundation [website](#).

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Fieldbus Foundation WIO technology forges ahead

Progress continues on Wireless and Remote I/O (WIO) technology, the Fieldbus Foundation reports, including a suite of solutions to assist automation suppliers in developing WIO devices. WIO will enable the utilization of an open, interoperable fieldbus automation infrastructure incorporating both FOUNDATION fieldbus High Speed Ethernet (HSE) and industrial wireless applications.

The WIO development is part of the Fieldbus Foundation's continuing initiative to design and deploy an infrastructure that will accommodate 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. WIO continues to broaden the automation infrastructure capabilities of FOUNDATION technology by providing interoperable gateways for wired and wireless HSE devices.



According to Larry O'Brien, Fieldbus Foundation global marketing manager, "FOUNDATION technology has been built from the ground up for openness, and can support the rapidly changing world of technology in process automation. With WIO, we now have the ability to bring in the valuable diagnostic information from wireless devices, regardless of whether they are *WirelessHART* or ISA 100.11a, into the open and standardized infrastructure of FOUNDATION fieldbus," he said. "Combined with the ability to handle remote I/O, this greatly extends the range and capabilities of FOUNDATION technology to encompass many more devices throughout the entire plant or facility, regardless of their communications technology. The business value lies in taking the large amounts data from these devices through HSE and turning it into useful information in an open environment. You will be able to enjoy the benefits of wireless networking and remote I/O along with the powerful infrastructure of FOUNDATION technology."

Tools and resources now available to support the development of WIO devices include:

- *High-Speed Ethernet Wireless and Remote I/O Specification*: Defines a series of interoperable gateways to bring control I/O (analog and discrete) back to plant automation systems over an international standard, high-speed network.
- *HSE Interoperability Test Kit (HSE ITK)*: Tests the functionality of an HSE device and its conformance with the FOUNDATION fieldbus function block and transducer block specifications. The HSE ITK's test cases have been updated to Device ITK Profile 6.0 and now support the VC++ 2008 (v9) standard. The test kit also employs an all-new, intuitive user interface and updated HSE test function device application.

The WIO solution encompasses the existing HSE-RIO specification, allowing industrial plants to access high data requirement devices directly in the

fieldbus host system via HSE. Utilizing gateways functioning much like a smart remote terminal unit (RTU), it brings all forms of conventional I/O into the native fieldbus environment easily. This solution makes discrete-in, discrete-out, analog-in, analog-out, and FOUNDATION H1 available over a common Ethernet network.

At a WIO validation team meeting in November 2010 at the Fieldbus Foundation facility in Austin, TX, the first WIO gateway interconnecting *WirelessHART* devices to a wireless backhaul network was successfully tested. The *WirelessHART* process parameters were mapped into transducer blocks in the gateway according to the specification, and communicated over the wireless backhaul network using the HSE protocol. As part of the proof of concept testing for WIO, the foundation's HSE ITK system successfully tested the WIO gateway over a 300 Mbit/s wireless Wi-Fi backhaul network. Laboratory prototypes of WIO gateways from several leading automation suppliers are currently under test.

The next steps in the WIO program include final validation of the wired HART and *WirelessHART* interface specifications. This development will give automation suppliers the opportunity to develop full WIO gateways initially running on a wired HSE backhaul. At the same time, the Wireless Sensor Interface Team and Fieldbus Foundation/ISA Cooperation teams will work to finalize the first draft of the wireless backhaul specifications and address such key requirements as security.

For more information about WIO tools and development solutions, visit the [Tools page](#) on the [Fieldbus Foundation website](#).

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Now available: Flow transducer block final specification enables more consistency



The all-new FOUNDATION fieldbus Flow Transducer Block Final Specification (FF-908 FS 1.0), which includes a standardized flow transducer block with a high-performance totalizer function, is now available from the Fieldbus Foundation. The specification will enable greater consistency in fieldbus device setup, configuration, and maintenance, and make it easier for end users to use instruments from a wide range of automation equipment suppliers.

The block structure is a primary advantage and differentiator of FOUNDATION technology. Transducer blocks are an integral part of FOUNDATION technology, providing valuable diagnostic and maintenance data such as calibration dates.

They also provide information about the measurement principle used, such as a Coriolis flowmeter or a differential pressure transmitter. The transducer block provides the link between the local input/output blocks required to read sensors and command output hardware from the function blocks.

The Fieldbus Foundation's Flow Transducer Block Specification includes standard definitions for three flow transducer blocks:

- Standard flow with calibration for basic device access
- Standard flow with calibration for complex device access
- Common practice parameters for extended functionality

The specification also provides a schematic of blocks, parameter access, and details for handling status of input parameters. When used in conjunction with a flow transducer block, the new totalizer function block supports the time-critical procedure of totaling different inputs to compute flow.

According to Stephen Mitschke, Fieldbus Foundation Director-Fieldbus Products, finalizing the Flow Transducer Block Specification ensures greater predictability in fieldbus implementation, while reducing integration risks and simplifying device replacements. "Our development of FOUNDATION fieldbus is focused on providing an end-user experience that is both secure and consistent," said Mitschke. "We are also continuing to strengthen the interoperability of our technology across multiple suppliers and control system platforms."

In addition, the Fieldbus Foundation has announced updates to its other transducer block profiles, including temperature and pressure transducer block profiles. The FOUNDATION fieldbus Device Description (DD) Library also has been updated to integrate the new transducer block capabilities. The DD Library includes standardized source code for all FOUNDATION fieldbus blocks and parameters, making it easy for developers to build DDs for fieldbus instrumentation.

For more information about FOUNDATION Technical Specifications, visit the [Technical Specifications page](#) on the [Fieldbus Foundation website](#).

For more information about the DD Library, visit the [Tools page](#).

Member companies with active maintenance agreements for these products may obtain the free updates from [Fieldbus Forums](#).

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Latest FOUNDATION specification updates help optimize interoperability, integration

Enhancements to the Fieldbus Foundation's open, non-proprietary FOUNDATION™ fieldbus physical layer technology include updates to the H1 (31.25 kbit/s) physical layer specifications that will improve the robustness of fieldbus control systems by optimizing device interoperability and integration. End users will benefit from easier installation, faster commissioning, and seamless startups.



Enhancements to the FOUNDATION fieldbus specifications include:

- Addition of a test procedure for isolated couplers to the existing FOUNDATION fieldbus coupler test specification. Registration of isolated couplers is now possible.
- Improvements to the H1 physical layer conformance test specification based on action requests received during the last few years. The most significant changes include the addition of a receiver jitter test case and a device-coupler interoperability test.
- Updates to the H1 physical layer test specification to remove obsolete profiles and align new references in the document with the current International Electrotechnical Commission (IEC) specifications. Coupler profiles were also added to the test specification.
- Miscellaneous updates to the FOUNDATION fieldbus cable specification.

Stephen Mitschke, Fieldbus Foundation director-Fieldbus products, said, "The Fieldbus Foundation's rigorous interoperability test and registration procedures thoroughly examine all aspects of a fieldbus device. The latest enhancements to our physical layer specifications will strengthen this testing and provide end users with greater confidence that registered FOUNDATION fieldbus devices can be employed in a tightly integrated, interoperable control system architecture."

Implementation of the new FOUNDATION fieldbus H1 physical layer test specification, version 2.0, is not immediately required. However, fieldbus device developers are encouraged to start using the specification as soon as possible. The updated specification will become mandatory with the next major release of the Fieldbus Foundation's Interoperability Test Kit (ITK). Until then, developers can provide proof of conformance to version 1.5 of the specification when registering a device.

For more information, visit the [Technical Specifications page on the Fieldbus Foundation website](#).

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Products & Solutions

ABB's FOUNDATION HSE architecture adds multiple benefits to BG plant



Bechtel Corp. has selected ABB's System 800xA Extended Automation System for the BG Queensland LNG (QCLNG) plant in Australia. The project, which includes 1,200 FOUNDATION fieldbus devices, will use the System 800xA FOUNDATION fieldbus High Speed Ethernet (HSE) architecture to provide:

- Control in the field, allowing AC 800M controllers to be used for higher value supervisory applications;
- Geographic distribution of field devices so the devices on the same H1 segment might be easily used for applications in different or multiple controllers if and as required utilizing virtual marshalling;
- Cross-segment communications between devices, if required; and
- Design options for distributing FOUNDATION fieldbus HSE architecture on an industrial Ethernet fiber backbone, eliminating the need for long FF H1 home runs and reducing the chances of electrical interference.

System 800xA Integrated Asset Management will be used for near real-time asset reporting. Device information acquired directly by the HMI client level, independent of controller resources, is another advantage of the FOUNDATION fieldbus HSE architecture.

For more information on the advantages of the power of integration with ABB's System 800xA and its use of FOUNDATION fieldbus HSE, visit the [ABB Control Systems website](#).

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Europe's largest carbon capture project chooses Emerson technology



Doosan Power Systems has chosen Emerson Process Management's PlantWeb™ digital plant architecture with the Ovation™ expert control system to control a new carbon capture demonstration project at the SSE (Scottish and Southern Energy) Ferrybridge coal-fired power station in the north of England. The project will demonstrate the technology on a semi-commercial scale over a two-year period beginning in 2011. Development of viable carbon capture technology is central to the UK's climate change and energy security objectives.

Currently under construction, the demonstration project will be the largest in Europe, capturing 100 metric tons of carbon dioxide per day, or the equivalent of what might be produced by 5 MW of coal-fired power-generating capacity. The carbon capture process consists of an absorption column that uses amine to absorb the carbon dioxide, a stripper column that extracts the carbon dioxide from the amine, and auxiliary processes that polish the amine for reuse and collect the by-products.

Emerson's PlantWeb architecture—including the Ovation expert control system, a range of Rosemount® intelligent measurement instruments, Fisher® digital control valves, and Control Techniques variable speed drives—will provide accurate and efficient control of the carbon capture process. The Ovation system will also provide an interface to operations and maintenance systems, collect and distribute plant-wide information for process management, and enable performance analysis of the carbon capture process. FOUNDATION fieldbus technology will connect Rosemount high-density temperature transmitters to the control system.

For more information, visit the [Emerson Process Management website](#).

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Endress+Hauser offers self-configuring Fieldbus indicators

Endress+Hauser's indicators RID14 and RID16 offer a pure display function. This latest way of displaying FOUNDATION fieldbus variables includes:

- Plug-and-see with a new listener mode that does not require any function block connection despite communicating normally on the fieldbus; and
- A function-block connection that can be used for flexible integration and universal applicability.

The listener mode supports quick commissioning, causes less traffic on the bus, and reduces costs because no function blocks are needed. The advanced diagnostic block delivers clear maintenance instructions and explanations for alarms, as well as current device status to support commissioning or failure elimination.

Besides Link Active Scheduler (LAS) capability and two ISEL blocks, arithmetic, integrator, and PID blocks are available as well. The device conforms to ITK 5.2.0 and is fully integrated into all major FOUNDATION fieldbus systems.

Each indicator features a large, backlit, high-contrast LC display with bar graph, online sensor status for predictive maintenance, and plain text field for TAG or unit. Various housing forms and materials (for example, glass-reinforced plastic, aluminum, or stainless steel) are designed to IP67/ NEMA4x. Intrinsically safe and explosion-proof versions are available with ATEX, FM, CSA or IEC Ex certification.

For more information, visit the [Endress+Hauser website](#).

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Foxboro FDM user interface maximizes uptime, performance

Configure, commission, maintain, and diagnose your fieldbus devices through the entire lifecycle with a comprehensive, fully integrated engineering and maintenance environment. The Foxboro Field Device Manager (FDM) user interface with diagnostic capabilities provides the means to increase uptime and performance while significantly lowering maintenance costs. It offers:

- **Truly Open Technology:** FDM offers interoperability with any device from any vendor with any protocol. With Foxboro interoperability and any-bus capabilities, users can maintain their



preferences because the system is adaptable: the choice is yours!

- **Unmatched device configuration, commissioning, and diagnostic support:** FDM is the first to offer support for FDT and Enhanced EDDL, two technologies enabling device vendors to program device configuration and maintenance content for the host system. This capability greatly simplifies configuration, commissioning, and maintenance, including advanced diagnostics to optimize field devices.
- **Simplify engineering and increase productivity:** Customizable templates for each device model provide reusable engineering. A commissioning wizard automates all the steps of device commissioning, making it easy to replace a failed device.
- **Eliminate wasted maintenance and reduce downtime:** Moving to predictive device maintenance approaches helps spot problems early before they become severe and provides time to plan corrective action without downtime.

For more information, visit the Foxboro [website](#).

Component Block	Type	Device	DD Parameter	Start	End	Days
REACTOR-FC111	FC111	DUCS00_2		76	130	30
REACTOR-FC111	FC111	DUCS00_2	OUT	166	170	26
REACTOR-FC112	FC112	SPFC_00		0	40	40
REACTOR-FC112	FC112	SPFC_00	OUT	46	70	26
REACTOR-FV111_HEAT	AD	DUCS00_2		138	220	25
REACTOR-FV111_HEAT	AD	DUCS00_2	SCALE0	240	260	26
REACTOR-FV111_COOL	AD	SPFC00_01		216	250	26
REACTOR-FV111_COOL	AD	SPFC00_01	SCALE0	260	260	26
REACTOR-OUTBL111	UNAPP	DUCS00_2		160	180	26
REACTOR-OUTBL111	UNAPP	DUCS00_2	OUT_1	160	180	26
REACTOR-OUTBL111	UNAPP	DUCS00_2	OUT_2	180	210	26
REACTOR-OUTBL111	UNAPP	DUCS00_2	SCALE_OUT	210	240	26



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Microcyber develops Modbus-to-FOUNDATION Fieldbus converter



Microcyber, a leading supplier of premium industrial communication products (FOUNDATION fieldbus, Profibus PA, HART, and Modbus), has developed a Modbus-to-FOUNDATION fieldbus converter. NCS-MF105 is a converter device for Modbus-RTU protocol to FOUNDATION fieldbus protocol. It is able to integrate a device or board with a Modbus communication interface to the FOUNDATION fieldbus bus system. The bus power supply is selected by NCS-MF105, and can also provide a power supply to boards the user provides.

As a Modbus host, NCS-MF105 communicates with the device via the Modbus -RTU interface, achieves read/write operation for Modbus register data via FOUNDATION fieldbus transducer blocks, and converts Modbus data to the FOUNDATION fieldbus communication system via FOUNDATION fieldbus standard AI, AO, DI, DO function blocks.

NCS-MF105 features include:

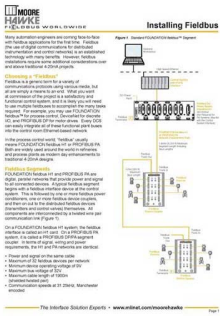
- Compliance with the FOUNDATION fieldbus specification, providing FOUNDATION communication ability to Modbus devices;
- Support for Link Master function;
- Support for AI, AO, DI, DO, PID function blocks;
- Support for function blocks instantiation;
- Support for standard DD or EDD specification;
- Electrical interface connected with Modbus device that supports TTL level, RS-485, and RS-232; and
- 3.3-V or 5-V power supply output.

For more information, visit the Microcyber [website](#).

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MooreHawke updated whitepaper offers advice for "Installing Fieldbus"

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



Learn the fundamentals to watch for when installing fieldbus in your plant in the updated MooreHawke whitepaper "Installing Fieldbus." It 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.

Get this updated whitepaper now!

For more information, visit the MooreHawke [website](#).

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Pepperl+Fuchs power hub puts redundant power in restricted spaces

Pepperl+Fuchs' FieldConnex Compact Power Hub, designed as a versatile, high-performance power supply for larger process automation projects, delivers eight segments of redundant power in less cabinet space than any other comparable power supply on the market. It supports intrinsically safe fieldbus segments according to Entity Ex ic or Ex nL classification, and the High-Power Trunk concept. These power modules are available for 21...23 V / 500 mA or 28...30 V / 500 mA operation.

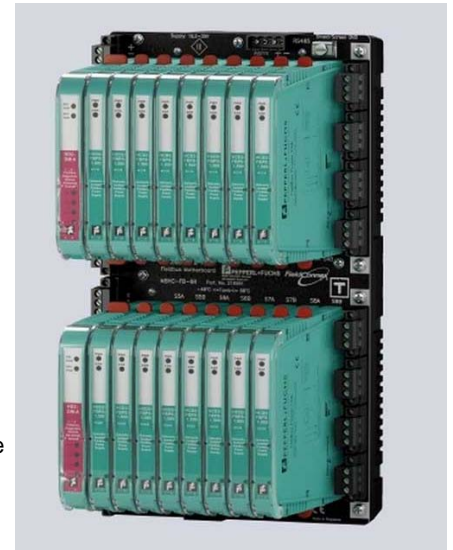
With a footprint of 150 x 268 mm, the power hub requires about a third less space than a comparable standard power module, with no compromise in performance and power. Delivery of high performance and power in significantly less space is achieved through the use of specially selected high-performance components and an advanced passive impedance design resulting in minimum heat dissipation.

"The power supply modules that mount on the motherboard are just 12.5 mm," said Brian Traczyk, product manager, Pepperl+Fuchs. "Depending on the module, the typical power loss is only 1.3 or 1.6 watts, which promises a long service life with the most efficient control room cabinet-packing density available today," he went on. "And because the FieldConnex Compact Power Hub is designed with built-in redundancy, two power modules are assigned to each segment. This means exchanging a failed power module does not require any interruption of the power supply, and will not affect plan operation."

The basic design concept of the power hub is a compact motherboard that provides all necessary wiring connections and interfaces. All connections are plug-in with retaining screws for long-lasting connections, even under continuous vibration. The motherboard is available in different versions to suit varied application needs, including customized interfaces for major DCS systems such as Yokogawa and Invensys. It can hold up to 16 plug-in power modules to supply redundant power for up to eight FOUNDATION fieldbus H1 segments. Modules are simply plugged in and safely secured without need for any tools.

The FieldConnex Compact Power Hub supports physical layer diagnostics. Users simply plug Pepperl+Fuchs' optionally available Advanced Diagnostic Module (ADM) into the motherboard of the power module. The ADM serves as the link between the physical layer of the fieldbus infrastructure and the Advanced Diagnostic Manager running at the control room to detect deteriorating signal quality long before it affects plant operation.

For more information, visit the Pepperl+Fuchs [website](#).



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Rockwell Automation's latest PlantPAx promotes plant-wide optimization

Rockwell Automation's PlantPAx System Release 2.0 is poised to help manufacturers in a wide range of industries achieve plant-wide optimization by offering integrated control and information solutions. The latest generation PlantPAx Process Automation System builds on the success of the initial PlantPAx system, adding new features in the areas of high availability, device integration, asset management, design productivity, batch and sequencing control, and operations productivity.

The device integration and asset management capabilities of PlantPAx deliver a strong, reliable communication infrastructure to communicate over an EtherNet/IP backbone and support multiple field device integration options, including FOUNDATION fieldbus. An important enhancement is the ease of integration and asset management of other devices in the system, such as intelligent motor control centers, variable frequency drives, condition

PlantPAx
Process Automation System

monitoring, and power control components.

In addition, PlantPAX helps OEMs and skid builders serving the process industries reduce overall costs and minimize time to market while simplifying the integration of their equipment into the end-user's process system.

For more information, visit the Rockwell Automation [website](#).

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Yokogawa offers free download of Basic Lite Edition of FieldMate software



Yokogawa Electric Corporation is offering free download of the Basic Lite Edition of its FieldMate Basic software.

FieldMate Basic Lite Edition provides functionality similar to the company's popular FieldMate Basic software. FieldMate is a PC-based device configuration tool with an intuitive, user-friendly interface used to perform initial setup, routine maintenance, and device replacement. It supports all major industry-standard communication protocols including FOUNDATION fieldbus, BRAIN, and HART, as well as the FDT/DTM open framework for setting and adjusting any vendor's network-capable field device regardless of communications protocol used. Support for the ISA100.11a field wireless communications standard enables configuration, adjustment, and management of a wide variety of field devices in plants.

Software operating environment requirements for the FieldMate Basic software include: Windows 7 Professional 32bit/64bit (English) and Windows Vista Business 32bit SP2 or later / Home Premium 32bit SP2 or later (English).

For more information about downloading the software, visit the Yokogawa [website](#).

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