Field Communication Insider is an e-newsletter featuring the latest news and developments in the application of HART, FOUNDATION Fieldbus and FDI technology around the world.

FDH-1 universal tool for mobile fieldbus diagnostics
Pepperl+Fuchs makes commissioning and troubleshooting a fieldbus installation easier than ever. The FDH-1 can check any fieldbus segment quickly and easily with the simple press of a button. [Learn more.]

FieldComm Group presents technologies at Emerson Exchange
FieldComm Group joined other leading organizations showcasing solutions to help make industrial operations safer, more efficient and more productive. [Read more.]

China's ISCAS R&D Institute joins FieldComm Group
The Institute of Software, Chinese Academy of Sciences (ISCAS) is the newest member of FieldComm Group. [Learn more.]

Technology Usability Initiative gains momentum
The project's goal was to provide a managed infrastructure for process automation that allows end users to focus on their processes and their plants, not the technology tying everything together behind the scenes. [Read more.]

HART Test System Release 3.2 now available
The HART Test System (HCF_KIT-192) is designed to automate testing of the Data Link Layer and Application Layer of wired HART products. [Read more.]

Alabama steel mill receives "Plant of the Year" honors
Congratulations to all who contributed to the Nucor Steel Tuscaloosa facility being recognized as the 2014 Plant of the Year. [Read more.]

Greenfield mining operation protects assets with WirelessHART
Lundin Mining chose to install a WirelessHART network to monitor and protect its essential equipment. [Read more.]
Put gas flow measurement on the bus

FCI's new ST100 Series extends thermal mass gas flow measurement technology to FOUNDATION Fieldbus. When you have a gas flow application and FOUNDATION Fieldbus, think FCI.

- All gases
- Direct mass flow
- Line sizes from 1” to 100” [25 mm to 2500 mm]
- H1, FOUNDATION Certified with advanced diagnostics
- Flow rate, total flow, temperature and pressure

FCI - FLUID COMPONENT INTERNATIONAL
www.fluidcomponents.com

New product news you might be interested in:

- FCI offers ST100 Series/Air Gas Flow Meter Web Demo
- Microcyber provides complete Fieldbus Development Toolkits
- Pepperl+Fuchs universal tool enables mobile fieldbus diagnostics
- ProComSol software application improves productivity
- Siemens delivers SIMATIC PDM V9.0 Process Device Manager

Latest registered FOUNDATION Fieldbus and HART products
The number of FOUNDATION Fieldbus and HART products registered by the FieldComm Group continues to grow. Read more.

2015 General Assembly held in Tokyo, Japan
This annual event is open to group members and non-members, and will be attended by leading industrial automation suppliers and end users from around the world. Read more.

Americas
PowerGen 2015
Las Vegas, NV USA
December 8-10, 2015
More Information

Europe, Middle East, Africa
(EMEA)
mcT Petrolchimico Exhibition and Conference
Milan, Italy
November 2015
More Information

Asia-Pacific
Measurement and Control (JEMIMA)
Tokyo, Japan
December 2-4, 2015
More Information

FieldComm Group General Assembly and End User Seminar)
Tokyo, Japan
December 2, 2015
More Information

Siemens SIMATIC PDM V9.0: Cut commissioning and service times

The new SIMATIC PDM Version 9.0 from Siemens enables you to cut commissioning and service times significantly in your plant and offers excellent flexibility and plant availability by means of the plant-wide access to all field devices with secure server-client communication.

Learn more.
FieldComm Group Presents Technologies at Emerson Exchange

By FieldComm Group

FieldComm Group exhibited advanced device communication and integration technologies at the Emerson Global Users Exchange Conference, held October 12-16 in Denver, Colorado. It joined other leading organizations showcasing solutions to help make industrial operations safer, more efficient and more productive. The conference provided a first-hand look at a wide range of innovative automation technologies and services.

The annual Emerson Exchange was developed to share information among process manufacturers, end users and technology experts. Industry stakeholders have the ability to network; view and offer input about developing technologies; and take away new knowledge, ideas and techniques to help maximize assets and increase profitability.

FieldComm Group's marketing and business development manager, Talon Petty, commented, "Our presence at the Emerson Exchange Conference and other major industry events conveys our core mission, which is integrating digital devices into automation system architectures while protecting investments in the HART and FOUNDATION Fieldbus assets. The Emerson conference attracted a large number of
process industry firms who have a keen interest in optimizing plant operations and maintenance."

FieldComm Group's booth included displays explaining how the organization is dedicated to the meeting the needs of both controls and instrumentation manufacturers, and end users, throughout the world of process automation. Attendees were able to ask questions and gain insights from recognized experts in digital open standards and related technologies.

FieldComm Group is available to exhibit at member events to discuss its technologies and educate attendees on the benefits of using the intelligent information from their measurement devices. For more information, please contact Talon Petty at tpetty@fieldcommgroup.org.

China's ISCAS R&D Institute joins FieldComm Group

By FieldComm Group

The Institute of Software, Chinese Academy of Sciences (ISCAS) is the newest member of FieldComm Group. ISCAS focuses on the research and development of scientific theories of computers and leading-edge software technologies. Established in 1985, its corporate office is in Beijing, China, with branch locations in Wuxi, Chongqing, Haerbin, Guangzhou, Qingdao and Guiyang.

ISCAS recently started a research project based on the Internet of Things (IoT) to discover: How industry protocols deal with numerous devices and instruments; the protocols, standards and interfaces that are involved; and the role the software plays. It also plans to develop a software prototype to read/write industry field devices or instruments.

For more information, visit the ISCAS website.

For a complete list of member companies, visit the FieldComm Group website.
Technology Usability Initiative gains momentum

By FielComm Group

FieldComm Group's Usability Initiative, originally launched by the Fieldbus Foundation in May 2013, was envisioned as a way to make the digital fieldbus automation experience easier than conventional analog control systems in every conceivable way, from device setup and replacement to daily maintenance practices.

The project's goal was to provide a managed infrastructure for process automation that allows end users to focus on their processes and their plants, not the technology tying everything together behind the scenes.

The Usability Initiative began with a number of key objectives for FOUNDATION Fieldbus H1 networks. With the establishment of FieldComm Group in January 2015, the project was expanded to address input on the usability of HART and *WirelessHART* technologies.

Today, the Usability Initiative continues to gain momentum, with recent activities aimed at important fieldbus enhancements such as simplified PV integration, electronic device description (EDD) template-based configuration, one-button device replacement, and scalable integration.

According to Stephen Mitschke, FieldComm Group's FOUNDATION Fieldbus technology director, there are ongoing efforts to help industrial organizations begin realizing the benefits of digital automation technology without having to immediately proceed to more sophisticated strategies like control in the field.

"Our vision is to provide a pathway that starts with core process variable integration and a simple I/O interface, and then advances to asset management applications and more complex tasks like control in field devices—all implemented at the user's own pace," Mitschke said. "In particular, we are eliminating the need to utilize EDDs for basic PV
integration. This requirement has been shown to complicate device replacement. Our intent is to enable PV device interchangeability so users can easily swap out different vendors' products at their own discretion."

He added, "By simplifying PV integration with a solution we refer to internally as ‘EZ-PV,’ we will help do away with confusion and overlapping functions that often exist in engineering, operations and maintenance departments when it comes to deploying fieldbus devices. Our approach no longer requires that a system engineer be available to access DD files when a device replacement scenario occurs at 2 a.m. This is particularly crucial in remote environments like pipelines and well sites. Instead, users just program the new instrument according to its specification sheet and attach it to the network, where the device is immediately recognized and put into operation.

"With this enhanced capability, enabling a simpler host interface, the use cases for FOUNDATION fieldbus become much broader in PLC, RTU and SCADA applications. It takes conventional automation practices and applies them to fieldbus technology."

Mitschke indicated the Usability Initiative would ultimately define a distributed set of network configuration rules enabling control systems and field devices to be integrated without the need for laborious download routines and configuration steps. This heightened level of "plug and play" performance will be on par with the analog user experience.

*For more information, visit the [FOUNDATION Fieldbus Technology page.]*

**HART Test System Release 3.2 now available**

By FieldComm Group

FieldComm Group has announced the availability of Release 3.2 of the HART Test System (HCF_KIT-192), which is designed to automate testing of the Data Link Layer and Application Layer of wired HART products. This includes verifying compliance to all revisions of the HART Protocol Specifications and HART Test Specifications.

The HART Test System is an integral part of FieldComm Group's HART Device Registration
program. The system helps to assure the interoperability of devices produced to the HART standard regardless of the device manufacturer. In this way, users can buy a device that is HART Registered with confidence, knowing it will work with the devices already installed in their plant.

The HART Test System Release 3.2 update addressed various testing performance issues and streamlined device testing as per developer feedback. This, in turn, will drive greater value and efficiency for manufacturers of HART instrumentation.

All QA/QC processes on the latest HART Test System have been completed, including regression tests confirming proper operation of each failure point (FP) in corresponding HART Test Specifications. Specific updated tests include:

- Slave Token-Passing Data-Link Layer Tests
- Universal Command Tests
- Common Practice Command Tests

The new release is available for immediate download and installation on all HART Test Systems covered by the HSP.

For additional information, visit the HART Tools page on the FieldComm Group website or call 512-792-2301.

**Alabama steel mill receives "Plant of the Year" honors**

By FieldComm Group

Do we still manufacture steel in the USA? They do in Tuscaloosa, Alabama! Major operational and maintenance improvements made by Nucor Tuscaloosa Steel Inc. earned the company the prestigious FieldComm Group Plant of the Year award for 2014.

FieldComm Group's annual award recognizes innovative use of HART or FOUNDATION Fieldbus technologies in real-time industrial process applications. Recipients set a positive example for the automation industry worldwide in using intelligent device information to improve plant reliability and reduce operating costs.
The present Tuscaloosa facility was built in 1985 on the site of what was once a paper mill. It converts scrap metal into slab steel, which is rolled out into temper plate steel, and also produces coiled steel. Steel from the mill is used for pipelines, building plate, tug boats, barges, and pressure vessels.

Ben Springer, environmental technician at Nucor Steel Tuscaloosa, described his facility's use of intelligent device information: "The main goal was to monitor our water usage, and be able to troubleshoot it. We didn't have leaks yet, but if we did have an issue, we wanted to catch it quickly," Springer said. "The old wireless system was only about 60 percent reliable based on the many times it lost and dropped communications, the number of transient errors we were getting, and how often we had to work on it."

Nucor Steel decided to upgrade its process monitoring capabilities by implementing a new WirelessHART system. Outputs from 57 different transmitters at the Tuscaloosa mill go through four WirelessHART gateways, and are connected to seven radios to create an IEEE 802.11 (Wi-Fi) wireless backhaul network. The radios establish their backhaul network to programmable logic controllers (PLCs), with data accessed by an OPC server application.
According to Springer, the WirelessHART network achieved 100 percent data reliability that was on time and validated. "The WirelessHART solution was much better than we expected—it's easy to get data out of the system," he said. "Signals go through buildings without any problems, and meshing provides for a strong network with only a few routers needed. Depending on the application, we saved 50-80 percent with WirelessHART compared to the costs of a wired system."

Beyond checking water usage, the Tuscaloosa team discovered they could also use WirelessHART to monitor 19 dP transmitters in the mill's bag house and water filtration system. Measuring pressure drops in the bag house helps technicians determine when the bags need to be cleaned.

The results of the initial WirelessHART installations also attracted the interest of the mill's overhead crane maintenance team members, who realized they could use the technology to monitor bearing temperature and vibration. Sensors and transmitters on the crane were added to the WirelessHART-based network, where they deliver updates every 2-4 seconds. The maintenance team has estimated savings of $150,000-$250,000 per event due to the ability to monitor crane bearings and take action before a major problem disables the equipment.

"Because of WirelessHART's reliable and automated monitoring, we can now plan maintenance to our processes and equipment, rather than having unplanned shutdowns due to equipment failure," concluded Springer.

Congratulations to all who contributed to the Nucor Steel Tuscaloosa facility being recognized as the 2014 Plant of the Year.

To nominate a facility for the 2015 Plant of the Year award, visit the FieldComm Group website.
Greenfield mining operation protects assets with WirelessHART

By FieldComm Group

It isn't easy to run a high-grade nickel and copper mining and milling operation in the harsh environment of Michigan's Upper Peninsula. Sub-zero temperatures, diverse terrain and long distances between facilities make it difficult to maintain plant assets in optimal working order.

Lundin Mining Corporation's Eagle Mine in Marquette County, Michigan, needed an easy and cost-effective way to measure process variables. Some mill assets are up to ¾ mile from the main facility at the mill site, and many locations are not staffed on a 24/7 basis—creating the need for a remote monitoring capability.

Lundin Mining chose to install a WirelessHART network to monitor and protect its essential equipment. The flexible, yet robust wireless system addressed critical applications ranging from freeze protection for fire systems, to monitoring the health and performance of sump pumps and crushing equipment. The use of wireless technology also helped the mill substantially reduce installation costs and avoid failures.
According to John Berglund, maintenance superintendent for Eagle Mine, the implementation of WirelessHART was driven by an exceptionally tight commissioning schedule for the Greenfield mill site. "We couldn't wait for the installation of traditional wiring and conduit for measurement devices, which would have caused us to miss our project schedule. This made WirelessHART a natural choice as a remote asset monitoring solution," Berglund said. "I had previous experience with wireless networks at two other facilities, so I knew the technology could minimize the effort involved in putting new devices in the field."

Eagle Mine's WirelessHART network initially consisted of 40 wireless temperature transmitters paired with an Emerson Asset Management System (AMS) Device Manager, which provides asset and calibration management with real-time monitoring and reporting. Four wireless gateways were deployed and networked to a Rockwell Logix programmable logic controller (PLC). Wireless instruments, in turn, connect to the gateways to create a mesh network. The gateways interface to the business network through a demilitarized zone (DMZ), and wireless variables are displayed and trended on the PI program.

The AMS Device Manager was networked with Emerson's Machinery Health Manager software to provide a comprehensive monitoring and management tool for smart devices, including wireless vibration transmitters used to monitor the condition of crushers and ball mills. This solution improves reliability and supports preventative maintenance programs. Vibration analysis data can be pulled from history each day, and alarms are generated from the vibration equipment.

A key challenge for mine personnel was dealing with the long distances between asset monitoring applications. Due to concerns about signal strength, the decision was made to install both short and long range wireless antennas on gateways and transmitters.
to ensure dependable communication across geographically dispersed areas. Additionally, thumbs used on third-party devices simplified network expansion and configuration of instruments from the AMS.

Identifying the proper mounting configurations for wireless devices was another important consideration on this project. The use of gateways at strategic locations was essential for achieving the full range of wireless coverage throughout the facility.

In Berglund's view, the easy deployment of WirelessHART devices gained the favor of Eagle Mine's operations department. Wireless instruments can be installed quickly for a fraction of the cost of a wired alternative, and the flexibility of the technology enables users to obtain the data they need in almost any location in the plant. The wireless solution equated to an $83k installation cost savings at Eagle Mine, and at the same time, enabled a cost avoidance of $3-$10K per freeze incident in remote applications.

Technicians can now take advantage of enhanced capabilities for real-time device monitoring, which enable them to check the status of assets directly from the AMS. The AMS Client functions like a HART field communicator, allowing all configurations to be done from the E&I shop. It also provides for efficiently managing instrument calibration routes and calibration recordkeeping.

Since its installation in late 2014, the WirelessHART network has provided for reduced start-up times along with the assurance that all is well in the mill's remote locations. The
wireless solution also significantly improved asset reliability by minimizing the potential of unpredicted downtime.

Starting with temperature transmitters for remote freeze protection applications, Eagle Mine has expanded its asset monitoring capabilities to utilize wireless devices for pressure, pH, level, flow and other process variables. Future plans call for the installation of additional wireless equipment for system expansion. A flexible network infrastructure employing wireless gateways allows the mill to add measuring points for little more than the cost of a transmitter.

For more information, visit the [WirelessHART Technology page](#).

**FCI offers ST100 Series/Air Gas Flow Meter Web Demo**

By FieldComm Group

The ST100 Series Air/Gas Flow Meter Web Demo presents Fluid Components International's (FCI) newest thermal dispersion technology air/gas flow meter, which combines feature- and function-rich electronics with the industry's most advanced flow sensors for a truly state-of-the-science flow metering solution.

The ST100 Series transmitter is unsurpassed in meeting present and future needs for outputs, process information and communications. Whether the output required today is traditional 4-20mA analog, frequency/pulse, alarm relays or advanced digital bus communications such as FOUNDATION Fieldbus, HART, and others, the ST100 Series has it covered.

The ST100's bus communications have been certified by and are registered devices with the FieldComm Group. Should a plant team ever need to change or upgrade, the ST100 can be converted to other popular outputs with a simple card change, in the field.
The ST100's display/readout brings new meaning to the term process information. Its graphical display provides the most comprehensive information on process measurements and conditions of any thermal flow meter available.

To complete the solution, ST100 flow elements and process connections ensure the best possible measurements and effective installation. FCI flow element designs have been perfected and optimized through six decades of R&D and real world experience.

For more information, visit the FCI website.

Microcyber provides complete Fieldbus Development Toolkits

By FieldComm Group

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:

- FOUNDATION Fieldbus description template (only for 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.
Pepperl+Fuchs universal tool enables mobile fieldbus diagnostics

By FieldComm Group

The FieldConnex® fieldbus diagnostic handheld from Pepperl+Fuchs is a mobile device that makes it easy to install and use the fieldbus infrastructure, even within a hazardous location. In quick check mode, the handheld can be operated without any previous knowledge. The user simply connects the handheld at any point on the segment and checks the physical layer with a single push of a button. If the quality of the installation is optimal, the handheld reports "no fault." In the event of deviations, the device displays "maintenance required" or "out of specification." FDH-1's integrated expert system detects if a fault is present, where it's located, what type of fault, and how to correct it.

The handheld simulates faults that can occur, such as increasing noise and decreasing signals. Communication of the individual field devices and of the entire segment can be checked. This quality test is new and unique, going beyond the required conformity check. It can be accessed easily at the push of a button and ensures the stability of the fieldbus installation.

The FDH-1 tests the entire system exactly as it is installed. By clipping the FDH-1 to the wiring using test clips or plugs, there is no need to change the wiring after the test. This minimizes errors. FDH-1 offers greater reliability in fieldbus diagnostics, saves time and costs, and an evaluation can be performed during ongoing
operation in hazardous areas. The FDH-1 can be operated in Zone 1, and the current circuit can be routed into Zone 0.

FDH-1 covers the entire scope of fieldbus diagnostics—from quick check mode for the installer to the integrated oscilloscope for fieldbus experts.

For more information, visit the Pepperl+Fuchs website.

ProComSol software application improves productivity

By FieldComm Group

The DevCom software application from ProComSol provides the most efficient and productive way to manage your HART smart instrumentation. Running on the same hardware platforms that use Windows® or Android® operating systems for other maintenance tasks, it is instantly available when and where you need it. And it is cost-effective so everyone who needs it can have it.

The intuitive interface utilizes the standard HART tools and technologies made available by FieldComm Group, ensuring compatibility with all registered HART devices. When paired with the Bluetooth HART modem from ProComSol, it enhances safety by eliminating the need to be physically adjacent to the device when performing the maintenance tasks. There is no need to scale ladders with bulky equipment hanging from your belt.

DevCom software supports the HART-IP communication standard, meaning that you can interface to multiple HART devices using any HART-IP compatible multiplexer or wireless gateway with a simple Ethernet connection—making access to the devices simple, convenient and immediate.

Improve your productivity with DevCom software from ProComSol.
Siemens delivers SIMATIC PDM V9.0
Process Device Manager

The new SIMATIC PDM Version 9.0 from Siemens enables you to cut commissioning and service times significantly in your plant and offers excellent flexibility and plant availability by means of the plant-wide access to all field devices with secure server-client communication.

For more information, visit the Siemens website.
Latest Registered FOUNDATION Fieldbus Products

By FieldComm Group

The number of FOUNDATION Fieldbus and HART products registered by the FieldComm Group continues to grow. FieldComm Group is one of the only automation industry organizations with a registration program requiring mandatory testing of critical elements of its technologies. The effort encompasses host systems and field devices and physical layer components such as power supplies and device couplers from all segments of the automation market.

The table lists the most recently registered products by manufacturer, type, and model/host name.

### New Registered Host Systems

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Manufacturer</th>
<th>Type</th>
<th>Model/Host Name</th>
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<tbody>
<tr>
<td>FOUNDATION Fieldbus</td>
<td>Emerson Process Management</td>
<td>61Bb Integrated Host (H1)</td>
<td>DeltaV</td>
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### New Registered Devices

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<td>Actuator Communication Interface</td>
<td>INTELLI+ FF Interface</td>
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<td>BIFFI Italia</td>
<td>Position Transmitter</td>
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<td>ESP Safety, Inc.</td>
<td>Gas Detector</td>
<td>Open Path Receiver</td>
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<td>Foxboro Eckardt GmbH</td>
<td>Level Meter</td>
<td>LG01</td>
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<td>Foxboro Eckardt GmbH</td>
<td>Level Radar Transmitter</td>
<td>LR01</td>
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<td>Oxygen Analyzer</td>
<td>Oxygen Analyzer/ZKM</td>
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<td>Hitachi High-Tech Solutions Corporation</td>
<td>Pressure Transmitter</td>
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<td>Krohne Messtechnik</td>
<td>Vortex Flow Meter</td>
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<td>Level Radar Transmitter</td>
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<td>Through-Air-Radar Level Transmitter</td>
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<td>Westlock Controls Corporation</td>
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**Updated Registered Devices**

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<td>FOUNDATION Fieldbus</td>
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<td>Vortex Flow Transmitter</td>
<td>8800 Vortex</td>
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<td>Displacement Level Transmitter/Controller</td>
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<td>GE Sensing</td>
<td>Ultrasonic Gas Flowmeter</td>
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Fieldbus

FOUNDATION Fieldbus  GE Sensing  Ultrasonic Flare Gas Flowmeter  GF868
FOUNDATION Fieldbus  GE Sensing  Ultrasonic Steam Gas Flowmeter  GS868
FOUNDATION Fieldbus  GE Sensing  Ultrasonic Clamp On Gas Flowmeter  GC868
FOUNDATION Fieldbus  VEGA Grieshaber KG  Pressure Transmitter  Vegabar 80 Series
FOUNDATION Fieldbus  VEGA Grieshaber KG  Radar Level Transmitter  VEGAPULS 69

2015 General Assembly held in Tokyo, Japan

By FieldComm Group

FieldComm Group holds its 2015 General Assembly and End User Forum at the Hotel InterContinental Tokyo Bay in Tokyo, Japan, on December 2-4. This annual event is open to group members and non-members, and will be attended by leading industrial automation suppliers and end users from around the world.

FieldComm Group President and CEO Ted Masters said, "This general assembly will be unique as our organization's inaugural event to bring together global members and the end user community. Our technologies have gained widespread acceptance in fields such as refining, oil and gas, and petrochemicals, and companies in Asia/Pacific are seeking to learn more about their use in a wide range of plant automation applications."
Masters added, "I encourage anyone interested in standards harmonization and the future of advanced automation to attend this important event."

The General Assembly program will provide an overview of the latest developments in FOUNDATION Fieldbus, HART, WirelessHART and Field Device Integration (FDI), as well as presentations by major end users who have installed these solutions in their industrial operations.

For more information, please visit the FieldComm Group website.