Amanda, *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. To ensure that you continue to receive *Field Communication Insider*, please add control_enews@putman.net to your address book and subscribe here.

### Next Generation Diagnostics

Flowserve is at the core of the development effort to put the next generation of diagnostics in the positioner and the control valve world. Advanced diagnostics allow for an easy commissioning procedure that baselines the system and makes predictive maintenance a reality. The Logix™ 3800 Positioners are the latest Logix positioners with best-in-class diagnostics, performance, reliability and support.

[Learn more.](#)

### In This Issue: Device Data and Integration to the Cloud

In the age of the Industrial Internet of Things (IIoT) and Industry 4.0, industrial organizations of all sizes want to seamlessly integrate and analyze their field devices from edge to cloud. However, integrating plant floor data with enterprise systems – not to mention bringing Internet connectivity to production operations – can pose challenges. Foremost among these are cost and the complexity of integrating technologies from different vendors.

Despite these hurdles, bridging the gap between device-level information and systems at the plant and corporate levels promises significant business value for manufacturers. Among the
potential payoffs are faster time to market, lower total cost of ownership, improved asset utilization, and more effective enterprise risk management.

The possibilities of smart connected devices and cloud-based software applications are endless, and once a connection across the Internet is also provided, this value can be extracted to varying levels within the organization.

FieldComm Group technologies have been driving digital transformation for more than two decades with interoperable, fully integrated field device protocols. FOUNDATION Fieldbus™, HART™ and WirelessHART™ devices can be the basis for digitization supporting IIoT initiatives.

Read more about Device Data and Integration to the Cloud in this issue.

NEWS

FieldComm Group Holds Inaugural North American Members Meeting

Member Meeting attendees gained valuable insights into the automation industry direction and outlook from recognized experts.

ARC Report Details Growth of FOUNDATION Fieldbus, HART, and WirelessHART

The study found that automation end users continue to implement FOUNDATION Fieldbus and HART-based solutions in large numbers around the world.
RECAP: MRPL Earns Plant of the Year Award by “Doing Things Better”

Mangalore Refinery and Petrochemicals Ltd. has a “do things better” culture that led to the adoption of advanced digital communications for process control.

FieldComm Group to Exhibit at Honeywell Users Group in Dallas

FieldComm Group display at HUG will focus on technology initiatives providing the means to connect and integrate digital information.

Newest Member, Micropack, Offers Fire & Gas Detection Solutions

Micropack is a pioneer in “Fire and Gas Mapping” technology and plans to implement HART technology across its flame detection product line.
Are You Eligible for Plant of the Year?

Showcase your industry leadership and apply today!

Learn more.

TECHNOLOGY

Webinar Describes Value of Integrated Systems in Process Automation

A new webinar describing the value of integrated systems in process automation is available on-demand. Watch to gain insights on how FieldComm Group protocols bridge gaps between installed process devices and enable the Industrial Internet of Things (IIoT).

Learn How Standards Streamline Information Anywhere

FieldComm Group standards and technologies provide protocol-independent data connectivity from legacy installed bases to cloud-computing services.
APPLICATIONS

WirelessHART Technology Optimizes Refinery Corrosion Monitoring

Corrosion has become an important issue in refineries as incoming crude conditions change and plants age. By following best practices in design, chemical treatment and corrosion monitoring, refineries can address corrosion risk.

PRODUCTS

New product news you might be interested in:

- Emerson Selected by Indian Oil for Key Refinery Modernization Project
- Endress+Hauser Field Xpert and Netilion Library Take Headache Out of Paperwork
- Moore Industries Offers STZ Functional Safety Dual Input Smart HART Temperature Transmitter
- ProComSol COM-PWR: PC-Based HART Communicator with Power Supply
- Log, Transfer, Analyze – Siemens Helps to Close the Gap Between Field and Cloud
- Vega 80 GHz Radar Available with HART or FOUNDATION Fieldbus

CALENDAR

North America
Honeywell User Group
Dallas, Texas, USA
June 10-14, 2019
» More Information

Developer Training: HART Fundamentals and QA Testing Workshop
Austin, Texas, USA
June 10, 2019
» More Information

Developer Training: Device Integration Writing EDD and FDI Package
Austin, Texas, USA
June 12, 2019
» More Information

Asia Pacific
Working Group Meeting, FDI Plugfest and FDI Workshop
Sapporo, Japan
June 24, 2019
» More Information

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FieldComm Group held its first-ever North American Members Meeting on April 24-25 at the Crowne Plaza Hotel in Austin, Texas. The gathering provided an opportunity for marketing and technical personnel of member companies to learn about relevant technology initiatives, market preparedness strategies, and upcoming trends and deliverables.

Member Meeting attendees gained valuable insights into the automation industry direction and outlook from recognized experts. In particular, they were able to learn how the Field Device Integration (FDI) and the OPC Unified Architecture (OPC UA) standards support enterprise-wide analytics for better business decisions. The meeting also included an announcement of a new FDI Integrated Development Environment (IDE) to replace protocol-specific tools, and an unveiling of the technology roadmap for advancements in HART and FOUNDATION Fieldbus. Additionally, participants received an update on the emerging Advanced Physical Layer (APL) and Process Automation Device Information Model (PA-DIM).
The following presentations were given at the members meeting:

- Ted Masters, President and CEO, FieldComm Group, provided an overview of the organization and its current status.
- Larry O’Brien, Vice President/Research, ARC Advisory Group, delivered a keynote address on the latest developments in the area of industrial automation.
- Keith Larson, Group Publisher/Vice President of Content, Putman Media, discussed the impact of digital transformation on automation end users.
- Achim Laubenstein, Director of FDI Technology, FieldComm Group, offered an update on adoption of the FDI standard.
- Sean Vincent, Director of Tech Services, FieldComm Group, covered current activities surrounding HART, FOUNDATION Fieldbus and Ethernet APL.
- Tom Burke, President & Executive Director, OPC Foundation, described how OPC UA works with FDI as part of the industrial enterprise.
- Heather Whilden, Quality Assurance Manager, FieldComm Group, outlined the HART and FOUNDATION fieldbus device registration processes, and best practices for successful completion.
- Paul Sereiko, Director of Marketing, FieldComm Group, described the timeline for transitioning tool sets from Electronic Device Description (EDD)-only to EDD- and FDI-capable tools. He also explained methods for bringing HART data into the cloud using standards-based solutions.
- Wally Pratt, Director of HART Technology, FieldComm Group, examined HART IP and the new GitHub development project.

For more information, please visit the FieldComm Group website.
ARC Advisory Group, a leading market research firm for industry and manufacturing, has completed a new study examining the installed base of field devices employing FieldComm Group technologies. The study found that automation end users continue to implement FOUNDATION Fieldbus and HART-based solutions in large numbers around the world.

According to the ARC report, there are approximately 78.9 million installed process field devices worldwide. HART-based devices account for 60.3 percent of the global installed base, while FOUNDATION Fieldbus represents around four percent of the devices. By comparison, analog technology only has 20.6 percent of the installed base, with the remainder of devices being pneumatic or proprietary solutions.

The ARC study indicated that WirelessHART occupies a strong position in industrial wireless sensing with roughly 30 percent market share. The next closest wireless protocol has just over seven percent share.

FieldComm Group marketing and business development manager, Talon Petty, commented, “We are seeing the ongoing growth of smart device technology throughout the process industries, as manufacturers reap the benefits of digitization in their plant operations. There are clear indications that FieldComm Group protocols are preferred across a broad spectrum of the automation market.

For more information, please visit the Technology page on the FieldComm Group website.
RECAP: MRPL Earns Plant of the Year Award by “Doing Things Better”

Mangalore continuously strives for more effective utilization of its resources and facilities.

By FieldComm Group
May 20, 2019

FieldComm Group’s 2018 Plant of the Year winner, Mangalore Refinery and Petrochemicals Ltd., was the first award recipient from India. The company has a “do things better” culture that led to the adoption of advanced digital communications for process control. Mangalore continuously strives for more effective utilization of its resources and facilities.

Read the full article.
FieldComm Group to Exhibit at Honeywell Users Group in Dallas

FieldComm Group display at HUG will focus on technology initiatives providing the means to connect and integrate digital information.

By FieldComm Group
May 20, 2019

FieldComm Group will present a display of its digital transformation technologies for the process industries at the 2019 Honeywell Users Group (HUG) Americas Conference, to be held June 9-14 at the Hilton Anatole Hotel in Dallas, Texas.

The FieldComm Group display at HUG will focus on technology initiatives providing the means to connect and integrate digital information. FOUNDATION Fieldbus, HART and WirelessHART devices can be the basis for digitization supporting Industrial Internet of Things (IIoT) initiatives. At the same time, the FDI standard greatly simplifies device integration and takes account of the various tasks over the entire lifecycle for both simple and the most complex devices, including configuration, commissioning, diagnostics, and calibration.

“By delivering meaningful information where and when it is needed most across the enterprise, IIoT and Industry 4.0 open up new possibilities for safety, productivity, organizational responsiveness and, ultimately, profitability. One of the key reasons for their growth and popularity has been open standards such as FOUNDATION Fieldbus and WirelessHART,” said Talon Petty, FieldComm Group marketing and business development manager. “HUG 2019 attendees can learn how a smart connected device ecosystem makes it possible to address performance, reliability, safety, and environmental problems that have yet to be solved by traditional approaches.”

For more information, please visit the Events page on the FieldComm Group website.
Micropack, a developer of advanced fire and gas hazard detection technologies, is the newest member of FieldComm Group.

Founded in 1996, Micropack’s heritage was formed in offshore process control and safety systems, and from these roots the company innovated in the field of optical fire and gas detection, assisting with the development of many of the leading detection devices on the market today. At the same time, Micropack became involved in the effects of environmental conditions on optical detection methods. This subsequently paved the way for becoming a leader in two main areas: fire and gas detection consultancy and intelligent visual flame detection.

Micropack is a pioneer in “Fire and Gas Mapping” technology. It developed a suite of mapping tools, and through years of field experience implemented methodologies detailed in “ISA TR84.00.07: Guidance on the Evaluation of Fire, Combustible Gas, and Toxic Gas System Effectiveness.” The company is also an innovator of intelligent visual flame detection (iVFD), which was first put into field service more than 20 years ago to combat the common pitfalls of other technologies.

Micropack plans to implement HART technology across its flame detection product line.

For more information, please visit the Micropack website.
Webinar Describes Value of Integrated Systems in Process Automation

Learn how FieldComm Group protocols bridge gaps between installed process devices and enable the increasingly digitized Industrial Internet of Things (IIoT).

By FieldComm Group
May 20, 2019

A new webinar describing the value of integrated systems in process automation is available for on-demand viewing. It provides insights on how FieldComm Group protocols bridge gaps between installed process devices and enable the increasingly digitized Industrial Internet of Things (IIoT).

Moderated by Control Magazine Executive Editor Jim Montague, the webinar includes commentary by several key industry experts:

- Jonathan Berg, Software Engineering Supervisor, Moore Industries International
- Allen John, Senior Manager (Instrumentation Department), MRPL
- Lukas Klausmann, Senior Marketing Manager, Industrial Communication, Endress+Hauser Process Solutions
Because most process industry applications and facilities are huge patchworks of legacy devices, it can be hard to reach let alone access, transfer, and use their data to achieve better decisions. The webinar describes the use of digital protocols to make process data more accessible for a wide range of plant and enterprise optimization purposes.

Register to view the webinar.
Industrial organizations face the challenge of moving data from the plant to the cloud and the Industrial Internet of Things (IIoT). This can be a daunting task without the use of a standards-based approach.

Fortunately, FieldComm Group standards and technologies are coalescing to provide protocol-independent data connectivity from legacy installed bases all the way up to cloud-computing services and their data-hungry users and analytical tools.

Read the full article.
The growing demand for transportation fuels and the shift toward diesel makes hydroprocessing increasingly important. Hydroprocessing units help the refining industry meet global demand for cleaner fuels, even with an increasingly challenging feedstock of heavier crude slates with higher contaminant levels. Hydroprocessing units are key components of a competitive refinery configuration to shift available feedstocks into desirable and marketable product distributions.

In these units, hydrocarbon intermediates and products are reacted with hydrogen in the presence of a catalyst to produce high-value clean and lighter products. Feedstock and operating conditions such as temperature, partial hydrogen and absolute system pressure depend on the final application. Feedstocks can include every refinery intermediate and product, as well as straight-run and cracked feedstocks.

Higher system pressures and the appropriate catalyst generally enable a deeper chemical conversion and cracking of carbon-carbon bonds, while milder hydroprocessing removes contaminants.

Two of the major hydroprocessing applications are hydrotreating and hydrocracking.
Hydrotreating removes undesired feedstock components and reduces contaminants, such as sulfur and nitrogen, to avoid catalyst poisoning and mitigate downstream corrosion. Hydrocarbon components such as aromatics are removed to enhance product qualities. Blending pool properties like cetane number, density and smoke point can be improved with customized catalysts and process configurations. Dewaxing capabilities of certain catalysts improve cold-flow properties for blending components in the middle distillate pool.

Hydrocrackers break down carbon-carbon bonds of a heavy feed to produce higher value products, such as gasoline, kerosene and diesel components. A hydrocracker uses significant quantities of hydrogen, which is boosted to 150-bar pressure by large gas compressors. Sulfur and nitrogen in the first stage hydrocracker are removed by adding hydrogen to the feed, heating this mixture in a furnace, and passing the feed into high-pressure reactor vessels over a catalyst.

Corrosion has become an important issue in refineries as incoming crude conditions change and plants age. By following best practices in design, chemical treatment and corrosion monitoring, refineries can address corrosion risk.

Corrosion mitigation strategies, such as controlling flow and operating temperatures, as well as adding chemical inhibitors and water injection, can be very effective in hydroprocessing applications. However, to determine efficacy, it is best practice to continuously measure wall thickness and compare relative measurements over time.

Several corrosion-monitoring tools are available with different benefits and limitations, including in-line probes and non-intrusive sensors. Often, a combination of technologies will give the most comprehensive and reliable information. In-line probes and ultrasonic sensors can also be combined in the same wireless network.

Ultrasonic corrosion monitoring is one of the technologies available. It is suitable for this purpose as it provides the data required to make proper decisions on a continuous basis, and provide this information directly to plant personnel.

The installation costs of WirelessHART-based ultrasonic sensors are low, as they do not require intrusion into the process. Process shutdown is not required because sensors are installed without pipe penetrations. Wireless data retrieval enables cable-free installation, further reducing installation and operating costs. The sensor power modules are designed to last until the next plant turnaround (typically, nine years is achievable), so no access is required between turnarounds. Sensors are often installed as multi-point arrays at high-risk locations to provide more detailed information.

Ultrasound measurements are affected by process temperature variations due to the change in speed of sound through the metal. The latest generation of corrosion sensors uses an integrated thermocouple to measure the metal surface temperature, and can automatically compensate wall thickness measurements for temperature variations.

Once installed, these sensors measure the thickness of the pipe wall and send data directly to server-based analysis software via a wireless network, or to any plant monitoring system. This allows refinery engineers to analyze the effectiveness of anti-corrosion measures.

Corrosion control techniques can be effective when evaluated for efficacy and optimized in real time. This can be accomplished with ultrasonic corrosion sensors.

For more information, please visit the FieldComm Group website.
Emerson has signed multiple contracts totaling $12 million with Indian Oil Corporation Limited, India's largest commercial oil company, to modernize operations and emission programs at the company's refineries. The project will upgrade 14 different process units, including diesel hydro-treating units designed to reduce sulfur content and octane-boosting units either being installed or augmented with desulfurization technologies.

Emerson will serve as automation contractor, combining its deep refining expertise and advanced technologies to help Indian Oil meet the country's new Bharat Stage VI (BS-VI) low-sulfur emissions standards. The BS-VI emission standards mandate a maximum sulfur content of 10 parts-per-million, which matches best practices set by Europe, the United States and other countries, and include limits on carbon monoxide, nitrogen oxides and particulate matter.

Emerson will install advanced technologies, including DeltaV™ distributed control systems; safety instrumented systems and AMS asset management software; WirelessHART-enabled instruments; wired field instruments including pressure, temperature and flow sensors; control and isolation valves; and gas analyzers. Emerson will also provide installation, commissioning, factory-acceptance testing and training support services.

For more information, please visit the Emerson website.
How much time do you spend writing and filing reports each month, let alone trying to find what you or someone else wrote two years ago? The necessity, sometimes legal, to record what happened, where and when in a plant is to the point where administration forms a major part of everyone’s job, even the maintenance technician.

The Field Xpert SMT70/SMT77 tablets go a long way to solving the problem of writing reports – these are automatically generated for device configuration or verification – but now with Netilion Library you can finish any maintenance activity with the reports already filed where you are guaranteed to find them again.

Netilion Library provides industrial file management of the highest order. With a couple of clicks, any report generated for any device in the plant is filed with its digital twin in the Netilion ecosystem. To check the status of a particular device, you just click on its tag and all reports are instantly available. Reports can be accessed by other users in your ecosystem and are easily sent to your team. So, let Netilion Library take over the administration while you concentrate on keeping the plant up and running.

For more information, please visit the Endress+Hauser website.
Designed and built in compliance with IEC 61508 for use in Safety Instrumented Systems (SIS), Moore Industries SIL 3-capable STZ temperature transmitter offers dual sensor input that reduces process interruptions. Backup and fail-over protection allows either of the sensors or inputs to be designated as the primary measurement, with the secondary input acting as backup sensor in case of primary sensor failure. The dual sensor input also allows for average and differential measurements and High-Select and Low-Select options. It has features designed for smarter control and monitoring including sensor drift and corrosion detection, which increases, overall process availability.

The STZ is HART 7 compliant with exception-based reporting and dynamic variable mapping. It is HART and DTM programmable, and can be configured and interrogated using the HART DD on the 4-20mA loop via any HART handheld communicator or HART compatible host.

For more information, please visit the Moore Industries website.
ProComSol's COM-PWR is a full featured, DD-based HART communicator for Windows packaged with a USB HART modem and integrated +24Vdc loop power supply makes instrument setups a snap.

The COM-PWR includes these components:

- DevCom2000, Smart Device Communicator for Windows
- Uses the registered DD files from the HART Communication Foundation
- Complete access to all features of the device DD including methods
- Monitor PV, multi-variables, and device status
- View and edit device variables
- Trend process variables as well as any other parameter associated with the device
- Supports HART 7 and WirelessHART devices
- Windows Explorer menu layout that is easy to navigate
- Communication and event logs
• Save configurations as a PDF file for documenting the device
• Write saved configurations to devices
• No tag limits
• Complies with Enhanced DDL standard (IEC 61804-3)
• Comes with all the latest registered DDs from the FieldComm Group
• Guaranteed to work with Windows XP, 7-10 (32 and 64 bit)

HM-USB-PWR, HART Modem USB with Integrated Power Supply

• Integral standard USB Type A connector
• Heavy-duty HART mini grabber connectors
• Designed to meet HART Physical Layer Spec HCF_SPEC-54
• Self-powered, no external power supply or batteries needed
• Provides +24Vdc loop power
• Connections for loop current measurements
• Integrated loop resistor

For more information, please visit the ProComSol website.
Let sleeping dogs lie, they say. But would you also let sleeping or “stranded” data lie?

To date, 85% of the data produced by a sensor remains unused. So why let this potential slumber in the age of big data? The NAMUR Open Architecture (NOA) allows simplified access to this wealth of data and accelerates time to insight.

While the automation system and its function as central control instrument remains untouched by the NOA concept, a second data channel is being implemented. Destined for the collection of smart field device data and their routing into data collectors and cloud applications for further analysis, this alternate route for data offers real-time characteristics.

Thanks to this co-existence of existing proven-in-use structures and the new open standard, also Brownfield plants may be equipped with additional intelligence. The actual design of the solution – spanning from hardware to software and apps – is a service offered by Siemens. “It is our task to support and accompany our customers in transforming their processes into digital structures and ultimately reap the benefits offered by digitalization,” says Dr. Ralf Huck, head of R&D process instrumentation at Siemens.

For more information, please visit the Siemens website.
Get all the benefits of 80 GHz radar with HART and FOUNDATION fieldbus. The choice is simple with the VEGAPULS 64 and the VEGAPULS 69: one radar to measure level for liquids and one for bulk solids.

The higher frequency transmission gives operators unprecedented focus, allowing reliable and accurate measurements in tanks with internal installations and in compact vessels. Internal electronics make both radars immune to condensation and buildup. And finally, these radars are equipped with a high dynamic range, so they can measure even the smallest of signals.

The VEGAPULS 69 for solids is available with HART and FOUNDATION fieldbus, and the VEGAPULS 64 for liquids is available with HART. To learn more about the VEGAPULS 64, VEGAPULS 69, and other VEGA level products, call (800) FOR-LEVEL.

For more information, please visit the Vega website.