Setting the Standard for Automation

Wilmington Delaware Section

The Sensor

March 2009

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Upcoming Events

March 24 WISA Section meeting
April 28—WISA Shrimp Boil
May 26—WISA Section meeting
June 23—WISA Picnic

March 24, 2009
WISA Section Meeting
FDT/DTM Technology
By Paul D'Andrea of ProQuip
5:30 PM at ACE in Newark

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WISA Section Meeting

FDT/DTM Technology By Paul D'Andrea of ProQuip, Inc.

Typical industrial facilities may have many different types of valves, analyzers, and sensors operating on several different types of intelligent bus network. Each device may have its own software interface tool for configuration and diagnostics.

FDT/DTM Technology is one attempt, supported by a large group of equipment vendors to provide some organization to this "jumble". As the ftdgroup.org website states "FDT Technology standardizes the communication interface between field devices and systems. It is independent of the communication protocol and the software environment of either the device or host system ".

This talk at ACE was well attended and a lively and informative discussion closed out the meeting.

Reported by Bill Balascio

President's Message

By Matt Murphy

I can remember an advertisement from many years ago that stated once you think you see the picture, the picture changes. I don't recall the product, but I remember the intrigue of see the images in the picture transform from one object to another with a slight change in shape. So it is with framing the automation industry recently. The end users and suppliers are constantly scrambling to understand how best to deploy the latest technologies, even as they must maintain the skills necessary to ensure the viability of the legacy technology.

We at Wilmington ISA are attempting to help each other see the picture more clearly. At the February meeting, those in attendance received an update on the ISA standard for Alarm Management that is expected to be issued this year. During the presentation and the interaction during and after the presentation, we were able to gain insights into what are the best ways for implementing an alarm management system that will increase the safety and reliability of the operations where it is deployed. If you were unable to make the meeting, please take the time to down load the presentation from the WISA website.

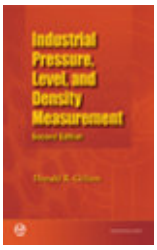
The executive committee will continue to look for presenters that can help you uncover the simplicity within the complex within the instrument and automation field. If you have a success that you would be interested in sharing with the members, do not hesitate to contact me or one of the executive committee members. Even if you don't want to present, come to the meetings and participate. The question you ask may lead to the solution that benefits both you and others.

Wilmington ISA meetings are scheduled for the fourth Tuesday of each month. Please check the WISA web page to get the latest information. I look forward to seeing you at the section meeting and make sure to bring a friend or co-worker.

Welcome New Members!

Become a new member a win a fabulous lapel pin!

Tales of Incidents Grim



Measuring a Stack of Liquid - BBBB (Buy)
Industrial Pressure, Level, and Density Measurement, Second Edition
By Donald R. Gillum
Reviewed by Nick Sands

There are literally dozens of ways to measure level, which is a good thing because there are some very challenging levels to measure. In the second edition of Industrial Pressure, Level, and Density Measurement, Donald Gillum describes the technologies and applications for many of the common instruments. Gillum worked as a process operator and instrument technician before joining Texas State Technical College where he served as an assistant professor, department chair, and division director. He is PE, a life member of ISA, and a past commissioner of ABET's Technical Accreditation Commission. Gillum helped develop ISA's CCST program and was recognized with ISA's Golden Achievement award.

The introductory chapters provide some history of instrumentation technology and measurement. The basics concepts of pressure, density and level are explained, as well as accuracy and a thorough discussion of calibration.

The chapters on pressure measurement describe every kind of pressure sensor, gage, and transmitter. Pressure gages have different designs, including the bourdon tube, spiral, helical, bellows, and digital. The application notes cover industry uses, materials of construction, and installation. The information on pressure transmitters includes the circuits used in common pressure sensors like capacitance, strain gages, LVDTs (linear variable differential transformers), and resonant frequency. Applications include safety, differential pressure, flow, and tank levels. Gillum includes an excellent discussion on digital, HART, Fieldbus, and wireless transmitters.

Gillum covers so many types of level measurement that it takes three chapters. The first covers classic measurements like dipsticks, sight glasses, and several types of floats and displacers. The next chapter is on head type measurements including the time tested bubbler. The topic of the other chapter is the variety of electronic level measurements including resistance, capacitance, ultrasonic, radar, nuclear, laser, and many more. Gillum describes the strengths and weakness of the different technologies

Standards & Practices: ISA104

Electronic Device Description Language

By Nick Sands

This committee is a recent addition to the ISA Standard and Practice Department. The chairman is Terry Blevins of Emerson Process Management. The purpose of the ISA104 committee is to standardize a descriptive language intended for use in industrial automation applications. These applications may include devices such as generic digital and analogue input/output modules, motion controllers, human machine interfaces, sensors, valves, closed-loop controllers, encoders, hydraulic valves, and programmable controllers.

The standard aims to create a standard that specifies a generic language to describe the properties of automation system components. The specified language shall be capable of describing:

- device parameters and their dependencies;
- device functions;
- graphical representations, for example charts;
- interactions with control devices.

The language is called the “Electronic Device Description Language (EDDL)” and is used to create an “Electronic Device Descriptions (EDD)” file. These files may be used with appropriate tools to generate interpretative code to support parameter handling, operation, and monitoring of automation system components. Tool implementation is outside the scope of this specification.

NOTE: The Electronic Device Description Language may also be used for the description of product properties in domains other than automation systems, but these other domains will not be specifically addressed.

This Standard shall specify the semantical and lexical structure in a syntax independent manner. A specific syntax shall be defined, but it is possible to use the semantical model with a different syntax.

Wilmington ISA - Kind to the Environment!

In what ways are we doing our part?

1. Our section saves untold trees by posting this newsletter electronically and sending out post cards for meeting notices.
2. We recycle newspaper at each years shrimp boil - did we use newspaper last year?
3. We recycle the content of this newsletter - many, many times.

WISA Trivia Question?

What ISA organization is FPID?

Email your answer to
WISA newsletter editor
At wbalascio@yahoo.com

Win an ISA shirt.

Food & Pharmaceutical Industries Division

The Food and Pharmaceutical Industries Division (also known as FPID) is organized within the Industry and Sciences Department of ISA. The Food and Pharmaceutical Industries Division is the Division for sharing and understanding the latest technology for sensor, instrument, equipment, automation, computer-system, and software application for the Consumer Packaged Goods (CPG) and Pharmaceutical Supply Chains.

The FPID represents a knowledge base of design, engineering, system, software, process automation, validation, quality, research, and scientific professionals. Share and enhance personal expertise for CPG product manufacturing and packaging, pharmaceutical R & D, clinical trials, and manufacturing of tablet formulations, parenterals and biotech products. Become involved in helping ISA provide global leadership at the FDA in the USA and other international regulatory bodies. In this capacity, you provide valuable knowledge and input on controversial issues regarding instrumentation, analysis automation, equipment and system validation, and testing for regulatory compliance.

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Measuring a Stack of Liquid …

The density of liquids can be measured by nuclear, microwave, displacer, vibration, coriolis, or hygrometer sensors. There are advantages and disadvantages to the different technologies. Nuclear for example can non-intrusively measure level in pressure vessels, but shielding and other consideration may add to the cost.

Some applications require a more accurate volume measurement; gaging of petroleum tanks for example. The temperature of the material and more accurate tank dimensions can be used to calculate the volume of material in the tank. Gillum covers some standard approaches to tank gaging and application like LPG (liquid petroleum gas) and more complex multi-function gaging systems that measure stratified layers of different compositions.

The final chapter provides a summary of the different measurement technologies and guidance on sensor selection along with further application guidance.

Gillum's second edition uses dozens of diagrams to help explain measurement technology and applications. A bonus is the information on calibration for many devices. Industrial Pressure, Level, and Density Measurement is a reference for every automation professional that works with instruments, making it a buy (BBBB). It is available from ISA for $89, (member price).

2009 Ralph L Moore Scholarship

By George C. Bentinck

Each year the Wilmington section ISA extends a $1,000 scholarship to a high school senior who is planning to attend a 4-year college, University or a technical training school. An ISA member of our section must sponsor the candidate and applicants pursuing a technical or science degree will be given higher preference.

The scholarship committee will select the successful candidate. The application deadline is May 1, 2009 and the check written to the college of the candidate's choosing will be presented at the Wilmington ISA annual picnic in June. The application may be found on the Wilmington Section ISA website www.isa.org/community/wilmi after March 15, 2009.

Scholarship Changes?

By Bill Balascio

This may be the last year with the above deadlines. Next year they may be moved up significantly to allow for a consistent application process for all ISA scholarships (in which more money may be available). Interested? Ask a Executive Committee Member.