Wilmington Delaware Section

The Sensor

January 2011

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Upcoming Events

Jan 25	Meeting: Inverter Design
Feb 22	Victory Brewing Plant Tour
Mar 22	Meeting: ROI on PAT
Apr 26	Shrimp Boil
May 24	Meeting: Future Trends

WISA / IEEE Meeting
Advanced Inverter Design

Tuesday, Jan 25, 2011
5:30 PM
Del Tech Stanton Campus, Stanton, DE
Directions: http://www.dtcc.edu/contact/swmaps/stanton_map.htm)

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Visit Wilmington ISA on the Web!

http://www.isa.org/community/wilmi

Join us at this month's WISA / IEEE Joint Meeting for:

Advanced Inverter Design

Presented by
Matt Perkins
of GE Power & Water

Grid-tied solar power plants bring significant challenges to grid systems vis-à-vis variability and dynamic fluctuations in irradiation / power output.

Advanced Inverter designs yield several key solutions for these issues, namely: voltage regulation, voltage and frequency ride-through, and generator power management for grid system challenges; and next generation cooling designs and component selection criteria for reliability challenges.

RSVP to Doug Tipton of IEEE Delaware Bay Section at: doug_tipton@ieee.org

President's Message

By Leata Mullen

Happy New Year to the ISA automation community! We hope 2011 will be a year of an improving economy and interesting automation projects for all!

With the New Year, many of us make personal resolutions. We resolve to eat healthier, exercise more, be more patient and loving with our families. How many people also make career resolutions? This time of year is a wonderful time of year to reassess your career and your career goals. Many companies ask for this kind of assessment during annual reviews. New Years is the time to do it for yourself, whether or not those goals line up with the ones in your annual review. What would make you happier in your career?

You could decide to mentor a younger person in automation, volunteer outside of work in an area of interest, grow in the field by reading more controls books, attending more conferences or classes, presenting at a conference, or taking on projects outside of your comfort zone.

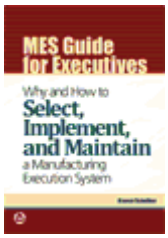
One good piece of advice I received in the last year is to identify and work on your strengths, not your weaknesses. It's much more fun to improve what you already do well, making it that much likelier you will stick to it, and often more productive as well. Focusing on your strengths will lead you to career choices that fit you. Feeling better about yourself by focusing on your strengths also helps your overall happiness.

Goals should be SMART – Specific, measurable, attainable, realistic, and time-limited. Google "SMART goals" for more information on applying those criteria to your goals.

ISA offers a variety of good ways to meet your career goals. The Sensor offers book reviews to guide your reading choices. Our monthly meetings with interesting speakers, ISA classes, and of course, the automation show. Ask how you can get involved with ISA.

I hope the coming year offers you many opportunities for interesting automation work and career growth. Setting smart goals will help you be more in control of your career.

Adding in the Middleman



Adding in the Middleman - BBB (Borrow)
MES Guide for Executives: Why and How to Select, Implement, and Maintain a Manufacturing Execution System.
By Bianca Scholten
Reviewed by Nick Sands

Between automation departments and IT departments, there is still confusion about what Manufacturing Execution Systems (MESs) are and what they do. Bianca Scholten explains that and shares practical experience in *MES Guide for Executives: Why and How to Select, Implement, and Maintain a Manufacturing Execution System*. Scholten is a partner at TASK[24], an information and communication technology consulting firm in the Netherlands and Belgium. She has received the Raymond D. Molloy and Thomas G. Fischer awards from ISA. She earned her Master's degree from the University of Utrecht and is an active member of the ISA-95 committee.

Scholten begins with discussion on what the current situation might be in many manufacturing plants and an explanation of MES. Many plants use paper systems for coordinating production and Excel spreadsheets for production planning. The alternative is a system that collects data from automation systems and communicates with an ERP (Enterprise Resource Planning) system. The information is exchanged to support the processes of Manufacturing Operations Management. The processes are defined in ISA-95, *Enterprise – Control System Integration*, though similar processes were identified by MESA, Manufacturing Enterprise Solutions Association International. Key activities include product scheduling, tracking, data collection, and analysis.

While some people believe in the inherent value of MES, Scholten uses data from a MESA survey to show the link between business practices and business results. For example, of the businesses responding to the survey, those with an MES had significantly better manufacturing cycle time. Several user interviews explain the value of functions from dashboards to product scheduling. Scholten also covers some critical steps in the selection process, with a focus on documenting the user requirements specification (URS). In the example, and

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Adding in the Middleman

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common in practice, first choose the MES, and then choose an integration partner.

Scholten recommends the GAMP (Good Automated Manufacturing Practice) V-model, or a light version of it, for developing and validating requirements. The interviews with users show some examples, and some issues, like where the break occurs between automation and IT and the security needs for MES vs IT. The chapter on MES rollout is rich with user interviews, and several choose different methods. Scholten shows that with planning, an MES solution can be leveraged over many sites and even implemented simultaneously.

The last chapter points the reader to the ISA-95 standards which describes the interactions between the control domain and the enterprise domain that support manufacturing. The details of the standards have been implemented in B2MML (Business to Manufacturing Markup Language). Scholten points out the benefits of choosing and MES solution that follows ISA-95.

Scholten provides a practical overview of MES, from selection to maintenance. The many quoted interviews provide real experience from real users to underscore the points. The target audience of executives may want more detailed business cases, but many engineers and IT resources will find *MES Guide for Executives* worth reading, if only borrowing (BBB). It is available from ISA.org for $79 (member price).

Encourage colleagues to join ISA!

Benefits include:

Membership in Local Section
Membership in 2 Divisions
Free access to ISA Standards
Free access to ISA Technical papers
Free access to ISA Webinars

September 2010 WISA Section Meeting

By Jeff Arbogast

On September 28, 2010, Harry Sim, founder and CEO of Cypress Envirosystems presented on "Saving Energy by Reducing Plant Air and Steam Losses."

In US industrial plants, steam and thermal systems account for 40% of all energy use while compressed air systems account for another 25%. In US commercial buildings, HVAC systems account for 40% of all energy use while lighting systems account for another 20%. However, a lack of automation in these systems is often a barrier to efficiency improvements.

He discussed how his company's wireless products enable such energy savings through non-invasive retrofits.

One product is a wireless gauge reader that automatically reads the values of existing manual gauges and transmits the data.

Another product is a wireless steam trap monitor. Without such monitoring, a typical steam trap failure resulted in 450,000 lbs of steam loss ($4,500) over 8 months until manually detected. Continuous monitoring allowed early detection—reducing the steam loss to 23,000 lbs ($230).

These allows these measurements to be recorded and analyzed much more frequently and effectively since manual inspection is no longer required.

For more information, see the article entitled "Wireless Monitoring Delivers Fast Payback" in the December 2010 issue of Control Magazine. Online at: http://www.controlglobal.com/articles/2010/WirelessMonitoring1012.html

WISA Trivia Question?

Where will ISA Automation Week 2011 be held?

Email your answer to
WISA newsletter editor by February 15, 2011
at jeffrey.arbogast@airliquide.com

Win an ISA shirt.

October 2010 WISA Section Meeting

By Jeff Arbogast

On October 26, 2010, Ira Sharp, Lead Wireless Product Marketing Specialist at Phoenix Contact, presented on "Interfacing Wireless Sensor Networks."

Ira began his presentation with an overview of the wireless sensor networks and the 802.15.4 RF wireless technology. With a focus process focused wireless sensor networks, he provided a good, neutral overview of the various protocols: ISA 101.11a, WirelessHART, and ZigBee. Personally, this provided me with a far better understanding of the similarities and differences between these protocols.

He continued with an explanation of how to interface wireless sensor networks, with industrial examples using WirelessHART.

For more information, see Ira's article entitled "How to Choose Wireless Technology for Industrial Applications" in the November 2010 issue of Control Engineering magazine. Online at: http://www.controleng.com/index.php?id=483&cHash=081010&tx_ttnews[tt_news]=39357

2010 Ralph L. Moore Scholarship

By George C. Bentinck

Alexandria M. Murphy and Adam Pranda are the 2010 recipients of the Ralph L. Moore scholarship presented at the June section picnic. Both are graduates of The Charter School of Wilmington.

Alexandria was sponsored by her father, Matthew Murphy and Adam was sponsored by Jeffrey Arbogast. Alexandria plans to persue a Mechanical Engineering degree at the University of Delaware driven by her interest in robotics and medical applications thereof. Adam will be attending Cornell University and will persue a degree in Envnironmental Engineering. Besides academic excellence, both exhibit excellent leadership skills and service to the community.

ISA - Wilmington Section
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Newark, DE 19714-9254

Mark your calendar for

ISA Automation Week 2011

October 17-20, 2010, Mobile, AL

Abstracts and Bios due March 28, 2011

Visit: www.isaautomationweek.org

Victory Brewing Tour

Downingtown, PA

7:00 PM on Tues, Feb. 22nd

Directions and Information at:
http://victorybeer.com/
$10 per person for tour, 20 person limit
RSVP to: lawrencekr@verizon.net