



# Wilmington Delaware Section

# The Sensor

## June

2006

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### Upcoming Events

- June 27 Picnic at Our Lady of Grace
- Aug 8 WISA nite @ Blue Rocks
- Sept 26 Section Meeting at ACE
- Nov 16 WISA at Holiday Inn Select

June 27, 2006  
**Family Picnic**  
**Our Lady of Grace in Newark**  
 5:30 PM

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## Doh!

### May Meeting Mishap

The May meeting was shorter than usual do to a miscommunication. Chris O'Brien, Director of Business Development at exida, was scheduled to present at our May section meeting. Unfortunately, we asked Chris to speak on May 31 and the section meeting was May 24. The mistake was ours and not Mr. O'Brien's. We regret the error. As compensation, anyone who came to our short meeting on May 24 is entitled to free food and beverages at our WISA Family picnic.

Graciously Chris O'Brien has agreed to present at a section meeting in the fall.

### Wilmington ISA Show

November 16, 2006  
 Holiday Inn Select on Naaman's Road

Vendor Exhibits

ISA Training

and Friends

# President's Message

By Steve Prettyman

Summer has arrived and it is once again time to acknowledge the outgoing leaders and welcome next year's leaders. We will be celebrating this momentous occasion as we have for many recent years at the Our Lady of Grace picnic grounds on Route 4 in Newark on Tuesday, June 27. The picnic is a great family event including a barbeque, a softball game, and plenty of great weather. Be certain to come out, enjoy, and volunteer to help the section in any way you are able.

This year I will be passing the gavel to myself as we failed in our efforts to identify a willing successor for the position of Wilmington Section President. This is a disappointing turn of events for the section because it is the fresh ideas and energy of new contributors that helps keep the section healthy and alive. Without this infusion of new thinking and energy, the section loses its impact and cannot continue to carry on with the good work it has done for so many years.

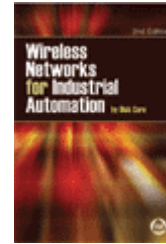
The core members of the Wilmington Section are solid contributors; however, they will not be able to continue to support the section forever. The section needs new volunteers and needs current volunteers to increase their involvement to remain a viable section long term.

I recently spoke with a vendor that indicated his growing disillusionment with the ISA, its high membership fees, and its perceived lack of industry respect. More and more companies are refusing to support ISA memberships, training events, and Expos because they fail to see the value in the ISA's contribution. As the baby boomers exit the workplace, they will leave a huge gap in knowledge. The ISA will be here to help fill those gaps if you are here to support the ISA.

The world of the ISA is a dynamic, evolving, and refreshing organization that not only sets the standard for automation, but also provides valuable technical and leadership training opportunities. The value of the ISA leadership experience far outweighs the work contributed by the volunteers and it is a valuable professional credential providing confidence and experience at an accelerated pace. By volunteering for the ISA you will be growing your career, both personally and professionally, well beyond the duration of your volunteer activity.

Come out to the Picnic on Tuesday, June 27, eat, drink, socialize, play, and volunteer to be a part of something that will help shape who you are and who you will become. The Wilmington ISA supports you, isn't it time you support the Wilmington ISA?

# Automation is in the Air



## *Wireless Networks for Industrial Automation*

by Dick Caro

**BBB (Borrow)**

Reviewed by Nick Sands

Wireless is one of the hottest topics in the automation industry. Dick Caro is just the person to write a guide for this leading edge technology. Caro is an ISA fellow, former chairman of the ISA SP50.2 (Fieldbus) committee, former consultant at Arthur D Little and ARC, and current CEO of his own company, CMC Associates. Caro is knowledgeable and skilled in explaining technology.

Caro first explains the requirements for wireless automation networks. There is the challenge of overcoming noise and multi-path distortion. There is the desire for low power battery driven transmitters that can operate for years without maintenance. There is the choice of network architecture; between stars, trees, and the highly reliable mesh networks. There is also some description of antenna technology.

Caro also covers the different wireless technologies. There is the ubiquitous Wi-Fi, the wireless A, B, and G technologies used at home and perhaps at work. There is Bluetooth, the short-range technology used for cell phone headsets. There is the low power ZigBee technology where transmitters may sleep 97% of the time. There is also the possibility of using the 3G cell phone technology for transmitters.

The final chapters cover the bleeding edge of technology, RFID, and the authors own suggestions for this technology. The bleeding edge includes WiMAX and Ultra Wide Band technologies. There are also several interesting possibilities for field powering transmitters. RFID (Radio Frequency Identification) uses a range of technologies as well, from low power passive tags to high power data tags that hold the history of the entity.

Caro provides a view of the wireless landscape, from user needs to available technologies to politics. This book is only available in electronic PDF format because of the rate of change of this technology. The second edition is still worth reading (BBB) at ISA for \$43 (member price).

# Standards & Practices: SP75 Control Valve Standards (Part I)

By Nick Sands

The purpose of the SP-75 committee is all ISA standards work related to valves, including the work of previous control valve committees ISA-SP4, ISA-SP39, and ISA-SP59. Sp-75 maintains a liaison with ANSI Committee B16 or B16/SCO and serves as the United States Technical Advisory Group (USTAG) for the International Electromechanical Commission (IEC) control valve activity now vested in Technical Committee 65, Subcommittee 65B, Working Group 9, Final Control Elements IEC/TC65/SC65B/WG9. Standards writing shall be carried out by the various subcommittees and generally not by the main committee.

SP75's next meeting is scheduled for Tuesday, 16 October 2006, in Houston, Texas, in conjunction with the President's Fall Meeting.

ANSI/ISA-75.01.01-2002 (60534-2-1 Mod) Flow Equations for Sizing Control Valves presents equations for predicting the flow coefficient of compressible and incompressible fluids through control valves. The equations for incompressible flow are based on standard hydrodynamic equations for Newtonian incompressible fluids.

ANSI/ISA-75.02-1996 Control Valve Capacity Test Procedures provides a test procedure for obtaining the following factors for sizing control valves: valve flow coefficient (Cv); liquid pressure recovery factors (Fl and Flp); Reynolds Number factor (Fr); liquid critical pressure ratio factor (Ff); piping geometry factor (Fp); and pressure drop ratio factors (Xt and Xtp).

ISA-SP75.04, Control Valve Stability describes the forces at work tending to create instability in control valves, including inherent and installed stability. Define design improvements to improve inherent stability. Include general guidelines for improved system design for better stability. Establish degree of stability expected of a specific control valve in a particular application of a given flow control system. Provide terminology and definitions required with the above-stated scope.

ANSI/ISA-TR75.04.01-1998 Control Valve Position Stability discusses control valve stem position mechanical stability and establishes a measurement criterion for position instability of the valve. Other forms of instability associated with control valves and control systems are not covered. This Technical Report is intended to help the user recognize, measure, and diagnose the unstable motion of a valve.

ANSI/ISA-75.05.01-2000 (R2005) Control Valve Terminology provides standard terminology related to control valves and parts.

SP75.07, Control Valve Noise Measurement and Prediction is a committee developing standards and/or recommended for laboratory and field measurement of noise caused by control valves.

## Automation is in the Air

SP75.08, Control Valve Face-to-Face Dimensions committee creates standards on face-to-face dimensions for the various types of control valves as defined in ISA Standard ANSI/ISA-75.05.01-2000 (R2005), with the exception of clamp and pinch valves covered in ISA Standard ANSI/ISA-75.08-1999 (which is currently being reaffirmed under subcommittee ISA-SP75.10).

ISA-SP75.08 has published the following documents, ANSI/ISA-75.08.01-2002, ANSI/ISA-75.08.02-2003, ANSI/ISA-75.08.03-2001, ANSI/ISA-75.08.04-2001, ANSI/ISA-75.08.05-2002, ANSI/ISA-75.08.06-2002, ANSI/ISA-75.08.07-2001, and ANSI/ISA-75.08.09-2004.

SP75.09, Digital Final Control Elements/Digital Actuators committee covers basic to digital actuators and digital final control elements, as devices that will accept low energy level binary inputs, in serial or parallel form, and will translate and provide an output at higher energy levels in acceptable binary form.

SP75.10, Flexible Clamp or Pinch Valves considers all items related to flanged control valves having a clamp or pinch valve element that are peculiar to this valve design and not normally a function of the other subcommittees. It shall also include possible new standards development. This committee is currently working on two documents: ISA-75.10.01, General Requirements for Clamp or Pinch Valves ISA-75.10.02, Installed Face-to-Face Dimensions for Flanged Clamp or Pinch Valves.

ANSI/ISA-75.11.01-1985 (R2002) Inherent Flow Characteristic and Rangeability of Control Valves defines the statement of typical control valve inherent flow characteristics and inherent rangeabilities, and establishes criteria for adherence to manufacturer-specified flow characteristics.

ISA-75.13-1996 Method of Evaluating the Performance of Positioners with Analog Input Signals and Pneumatic Output specifies tests designed to determine the performance of positioners with analog input signals and pneumatic output. The method of evaluation described in this standard specifies the use of an actuator of the user's or manufacturer's choice.

ISA-SP75.14, Control Valve Data Sheets committee makes the necessary changes to the S20 series of forms so they are suitable for specifying control valves accessories for a variety of industries including, but not limited to generation, chemical, petroleum and gas.

ISA-SP75.15, Process Data Presentation develops a technique for communication of process data and other requirements between the parties involved. The technique may include, but is not limited to, such features as a process data envelope, a process schematic, and a process piping configuration. Verification of design and actual process conditions should be more easily and thoroughly accomplished using a "standard format" technique.

To be continued in September.....

## WISA Family Picnic

**5:30 pm Tuesday, June 27, 2005**  
**Our Lady of Grace Picnic Grounds**

Food, Beverages and Fun provided for all. Come prepared for a softball game and other activities like horseshoe pitching.

- Highlights
- Softball
- Horseshoe Pitching
- Lots of good food
- Ralph L. Moore Scholarship announcement
- ISA Member Awards

Directions: Take I-95 to Rte. 273 west (exit 3). Continue to Rte. 4 West. Look for Our Lady of Grace about a mile down Rte. 4 on the left.

## Automation Federation

Representatives of OMAC, WBF, and ISA met to sign incorporation documents, discuss initial strategic initiatives, and outline next steps. The purposes of the Federation are:

To coordinate and unify the work of member organizations engaged in advancement of the science and engineering of automation technologies and applications, encompassing the design, development, production, and application of devices and systems that sense, measure, manage, and control industrial processes and manufacturing operations;

To promote the value and image of the automation profession;

To facilitate the development and dissemination of educational and informational resources intended to develop new generations of professionals and enhance the effectiveness of existing professionals;

To facilitate the promulgation of industry standards, guidelines, and services that will enhance the efficiency, cost-effectiveness, and safety of automation technology and application.

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### **New Benefits announced for ISA Members!**

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**Free Technical Papers: Access to over 2,500 technical papers from ISA conferences.**