



# Wilmington Delaware Section

# The Sensor September 2008

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## Upcoming Events

September 23 WISA Section meeting  
October 14-16 ISA Expo in Houston  
October 28 WISA Section meeting  
November 13 WISA Show @ Chase Center

**September 23, 2008**  
**Fieldbus Technologies At the**  
**DuPont™ Tedlar® PVF Plant**  
**By Tony Schwuchow**  
**of DuPont**  
**5:30 PM at ACE in Newark**

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## Fieldbus Technologies At the DuPont™ Tedlar® PVF Plant By Tony Schwuchow of DuPont

### Fieldbus Technologies At the DuPont™ Tedlar® PVF Plant

This presentation will discuss the fieldbus technologies implemented on the DuPont Tedlar® PVF Project including ProfibusPA, ProfibusDP, AS-I, Modbus, and DeviceNet and their interface to the Siemens PCS 7 DCS. Associated fieldbus Instrumentation selection, fieldbus design constraints, as well as project benefits from using fieldbus will also be presented.

### Tony Schwuchow of DuPont

Tony Schwuchow is a DuPont Field E&I Engineer with 6 years experience. He's held positions as an operations support engineer at the DuPont Fayetteville Works Plant in Fayetteville, NC, project engineer at the DuPont Gulf Coast Regional Engineering Center in Houston, TX, and is currently the Instrument Liaison and Dry Commissioning Team Leader for the DuPont Kevlar® Spinning Expansion Project at the DuPont Cooper River plant in South Carolina.

# President's Message

By Matt Murphy

Hello to the Wilmington ISA membership. The ISA night at the Wilmington Blue Rocks on August 19 was pleasant night blessed with great weather, good food, and a game that wasn't settled until the bottom of the ninth inning. It was a pleasure to host the new faces and renew acquaintances with the old. It is truly remarkable what type of information can be exchanged in a comfortable relaxed setting like a ballgame.

As the season changes from Summer to Fall, and the leaves are just beginning to bare their true colors, it is also a change of seasons for Wilmington ISA as we have several important activities scheduled in the next three months. To start the program, we will have our first section meeting of the season on September 23 and will follow with a field trip to see the "brains" at Longwood Gardens on October 28. Both of these will provide excellent opportunities for all members to increase their knowledge and possibly uncover new methods for improving the value automation can bring to your businesses.

We are also looking forward to the "Automation Destination" ISA show in Wilmington on Thursday, November 13, from 10 AM – 5 PM. Information regarding the show including registration can be found at the Wilmington ISA website. In addition to the vendor show, there will be two training classes and multiple technical seminars hosted by subject matter experts from our region. This is a show arranged by the members for the members and it will be well worth valuable time of all section members as well as your co-workers.

**Welcome New Members!**

**Curtis James of INVISTA**

**Welcome New Members!**

**The  
Automation Destination  
Exhibition and  
Training Show  
Thursday, 13 November 2008  
Chase Center on the Riverfront  
815 Justison Street  
Wilmington, DE 19801**

# From Chaos to Integration



## The Road to Integration A Guide to Applying the ISA-95 Standard in Manufacturing

By Bianca Scholten

BBBB (Buy)

Reviewed by Nick Sands

Some of the most important standards developed by ISA in the last decade are the ISA-95 standards on integration between control systems and enterprise systems. ISA-95 part 1 was published in 2000. It took many years before the any books on implementing the standard appeared. One of the first is Bianca Scholten's The Road to Integration: A Guide to Applying the ISA-95 Standard in Manufacturing. Scholten is a partner at Ordina, an information and communication technology consulting firm in the Netherlands and Belgium. She received her Master's degree from the University of Utrecht and is an active member of the ISA-95 committee.

Scholten first provides some background on ISA-95, which may be somewhat of a mystery to many readers. ISA-95, Enterprise-Control System Integration is divided into several parts. Part 1, Models and Terminology provides the common language for integration and the very important functional hierarchy model, which shows level 0,1, and 2 functions, including the process and control systems as described in ISA-88, the level 3 functions of manufacturing operations and control, and the level 4 functions of business planning and logistics. The focus of ISA-95 is the exchange of data between levels 3 and 4.

The functional enterprise control model other models are also very important. Part 2, Object Model Attributes defines more details of the information flows shown in part 1. Part 3, Activity Models of Manufacturing Operations Management describes the activities at level 3. Part 4, Object Models and Attributes on Manufacturing Operations Management is in development and defines the information exchange between level 3 systems. Part 5, Business to Manufacturing Transactions, describes the data messages exchanged in transactions between levels 3 and 4.

After the orientation to the ISA-95 standards, Scholten illustrates how to use the ISA-95 standards as a methodology to analyze existing system interfaces. The process includes a tour, a review of business drivers, and then an examination of the functional and activity models, during which the specific needs are defined. A summary with concerns and recommendations complete the analysis. Scholten provides comments from users that have been through the analysis.

# Standards & Practices: ISA101

## Human-Machine Interfaces

By Nick Sands

One of ISA's newest standard committees is the group working on standards for Human-Machine Interfaces. The co-chairs of this group are Joe Bingham of AES Automation and Doug Peck of Jacobs Engineering.

The standards, recommended practices, and/or technical reports developed by ISA101 will be directed to those responsible for designing, implementing, using, and/or managing human-machine interfaces in manufacturing applications. Unless noted otherwise in a specific ISA101 document, the documents will apply to all manufacturing industries.

The areas covered within ISA101's work will include: menu hierarchies, screen navigation conventions, graphics and color conventions, dynamic elements, alarming conventions, security methods and electronic signature attributes, interfaces with background programming and historical databases, popup conventions, help screens and methods used to work with alarms, program object interfaces, and configuration interfaces to databases, servers, and networks.

### WISA Trivia Question?

Who wrote The Road to Integration  
A Guide to Applying the ISA-95  
Standard in Manufacturing?

Email your answer to  
WISA newsletter editor Nick Sands  
At [nicholas.p.sands@usa.dupont.com](mailto:nicholas.p.sands@usa.dupont.com)

**Win an ISA shirt.**

## Blue Rocks

By Mike Morkun

What a nice day for a baseball game at Frawley stadium. We could not have selected a better day. The weather was perfect. It was especially nice since we had home plate upper deck seating in the DuPont private box. There was a good attendance of ISA members and the box was full. Food and drink was excellent.

The Blue Rocks hosted the Myrtle Beach Pelicans which leads the CAR Southern Division. The game turned out to be a pitchers duel and the Blue Rocks led the game 1-0 through eight innings. Sorry to say, but the Pelicans took the lead at the top of the ninth with a two run homerun. That was a real disappointment for the home crowd. The Rocks were unable to respond in their half of the inning and the game ended 2-1. In all, everyone had a great time and we look forward to doing this event again next year.

## Telemetry and Communications Division

Our Division is part of the Automation and Technology Department of ISA and is chartered to focus on the technologies associated with its various disciplines. The division was initially formed as TELEMETRY division with prime focus on the telemetry and telemetry standards. As the membership grew and their interests diversified, our charter has included various areas of communication including computer communication. Here are the areas of current focus of the Telcom Division.

Wireless Communication  
Optical communication  
Spread spectrum technology  
Wide area network  
Modem Technology  
LANs

Data Compression techniques Remote Monitoring  
Space Communication  
Coding, Synchronizing and Encryption  
Satellite Communication, Ground system, space system  
SCADA  
Radio spectrum allocation  
Cellular communication

Many new areas are being regularly suggested by the membership and the Division periodically adopts the new disciplines in its charter. Telcom organizes technical sessions at the ISA annual conference, publishes newsletters and provides technical books as a part of membership service. Lately, however, due to lack of Division volunteers, we have not been able to serve the membership and provide the services planned. Division officers being volunteers, we solicit support from members to come forward and participate in the division activities.

Any member interested in any of the above technical fields and willing to serve as an officer of the Telcom Division should contact either ISA or me, W. Thomas Morrow. My contact information is given below. Division positions include Director-Elect, Associate Director (of technical areas), Secretary, Program Chairman, Review Chairman (and Reviewers), Webmaster, Newsletter Editor/Asst. Editor, and other committee chairmen.

## Test Measurement Division

The Measurement, Control & Automation Association is an industry association whose member companies design, manufacture and sell instrumentation and equipment used by American industries that demand product compliance that must be certified by third-party testing laboratories (NRTLs).

ISA's Test Measurement Division covers the measurement, instrumentation and techniques associated with providing test data for product development and evaluation. This includes the sensing, transducing and signal conditioning means used for static and dynamic measurement of such variables as force, mass, dimension, strain; displacement velocity and acceleration; tensile, impact and compressive strength; temperature and thermal properties; time and frequency; thrust and torque; pressure, vacuum and flow; electrical quantities; and photo-optics and radiation.

The purpose of the TMD is to establish an information exchange and to promote cutting edge technology and developments. A TMD helps its members stay competitive and up-to-date on the latest technologies for test, control, and design applications and membership is an excellent vehicle for providing for sharing experiences and learning from your peers.

## From Chaos to Integration Continued...

Another chapter explains how to apply the models described in the ISA-95 standards from a practical point of view. A detailed example includes the resources of personnel, equipment, material, and process segment and illustrates many points.

The final chapter reveals the structure of B2MML (Business to Manufacturing Markup Language) and its implementation, including adaptors and middleware. There is also a plan for implementing a project to implement ISA-95. There are some critical questions to answer, like ownership of the master data and the interface systems.

Scholten provides an experienced view of the benefits of following the ISA-95 standards and, importantly, an international view. She draws upon many interviews with users to keep the book grounded in reality. Scholten also adds her own style as an art historian. The ISA-95 standards will have a very significant impact on the control system environment so this practical explanation is worth buying (BBBB). The Road to Integration is available from ISA.org for \$95 (member price).

**ISA - Wilmington Section  
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## **The Automation Destination Exhibition and Training Show Thursday, 13 November 2008 Chase Center on the Riverfront 815 Justison Street Wilmington, DE 19801**

This event is the only Exhibit and Training Show dedicated to industrial automation and process control products and services in the area. Take this opportunity to join the WISA Section at our exhibit hall to see the latest in field instruments, automation and controls technologies.

- Exhibit Time: 10am – 5 pm
- Free Parking and Admission
- Free Technical Seminars
- Two National Training Sessions

**Registration available at:  
[www.wilmington-isa.org](http://www.wilmington-isa.org)**