



Water/Wastewater Industry Division

Setting the Standard for Automation™

Calendar of WWID Events

- Nov 2-6, 2013 **ISA Fall Leaders Meeting & 51st ISA Honors & Awards Gala**
Nashville, Tennessee, USA
- June 2014 **ISA Spring Leaders Meeting**
Raleigh, North Carolina, USA
- Aug 5-7, 2014 **2014 ISA Water/Wastewater and Automatic Controls Symposium**
Crowne Plaza Orlando-Universal Hotel
Orlando, Florida, USA

In this Issue

- 1 Director's Welcome
- 2 Message from your Director-Elect
- 2 2014 WWAC Symposium Announced
- 3 Call for Abstracts – due December 15, 2013
- 4 Introducing the 2014 Symposium by Kevin Patel
- 5 Introducing our 2014 Symposium Chair & Program Chair
- 6 2014 Symposium Preview & Hotel Information
- 7 ISA Training Courses to be offered at 2014 Symposium
- 11 2014 WWID Student Scholarship Program
- 12 2014 Scholarship Application Form – due January 31, 2014
- 16 2013 Symposium Report – Over 250 Attendees!!
- 17 Symposium Photos
- 20 Thank you to our Sponsors and Exhibitors
- 22 Symposium Tour Report & Tour Photos
- 24 Awards for Best Paper, Best Presentation & Best Poster
- 27 Closing Remarks from outgoing symposium chair
- 29 Technical Article: Grounding Introduction – D. Stableford
- 32 Technical Article: Improving Wireless SCADA Reliability – J. John
- 40 WWID Contacts

Fall 2013 Newsletter

Director's Welcome



All volunteer organizations run on cycles, and our WWID is no exception. As a volunteer within our division, I have had the chance to wear several hats over the years. From a symposium speaker, to board member at large, to marketing chair, general symposium chair, and finally director, I have had the

opportunity to “cycle through” a number of roles over years. Each has been an experience where I have met interesting people and learned a lot, both professionally and personally.

As I write this director's welcome message, one of my many volunteer hats is in the process of being passed onto the next person. For the past 2 years (2012 and 2013) I have had the unique experience of being the general chair for our ISA Water/Wastewater and Automatic Controls Symposium. Like other volunteer experiences I have undertaken, it has been an interesting ride. I got to stretch myself in ways I never would have previously thought of. And while it has required that extra bit of effort at times, the rewards from doing so have been numerous.

Part of a volunteer's responsibility is to always look to the future and have a succession plan in place. As I knew my “cycle” as symposium chair would come to a close in late-2013, it has been a great experience to develop a succession plan and put it into action. During the past year I have been

working closely with our incoming 2014 chair Kevin Patel to help him learn about all the different aspects of our annual conference and what goes into it. Having Kevin as the 2013 Assistant Chair has also been a great help, as I could spend some time to work out some more of the logistical details in order to lay the foundation for stronger symposiums in the years to come. I have every confidence that Kevin and his volunteer team will do an excellent job during his tenure as our 2014 and 2015 symposium chair.

In these pages, you will read out the plans that are already in place for our 2014 symposium. Kevin has been hard at work putting together the new volunteer team, and our long-time program chair Joe Provenzano returns to continue doing his usual excellent job. Don't forget to mark your calendars for August 5-7, 2014 and take a look at the Call for Abstracts.

In these pages you will also see a comprehensive report on our 2013 symposium, which was just held Aug 6-8, 2013. Don't forget to take a look at the photos and congratulate our winners for Best Paper, Best Presentation, and Best Poster.

Two more things: First, make sure to check our WWID student scholarship on page 12: applications are due Jan 31. Second, make sure to check out the two technical articles in this issue – both are originals written just for the WWID.

Graham Nasby
WWID Director

Message from your Director-Elect



As we take a breather from the busy 2013 year, I see myself reflecting on how beneficial the ISA Water/Wastewater and Automatic Controls (WWAC) Symposium has become. Like many of you, I usually attend about 4 different conferences or symposia a year, which include national and local organizations. But out of all the events that are available, I still find the ISA WWAC to be the most relevant and career focused event I have been a part of.

Our group of talented volunteers continue to put together a program that stays current and provides information on what may be coming through not just 2 or 3 sessions, but two full days of technical content. If you didn't get a chance to make it to the 2013 ISA WWAC Symposium, I highly recommend you attend in 2014.

With the successful 2013 ISA WWAC Symposium wrapped up, we are moving forward and planning for the 2014 ISA WWAC Symposium. I would encourage all WWID members to stay up-to-date on symposium happenings on the website at www.isawwsymposium.com.

Please note that the 2014 ISA WWAC Symposium call for abstracts has been announced. I encourage everyone to submit an abstract to have the opportunity to join in on the increasingly popular symposium. The symposium is a great time to meet new professionals in our industry and share knowledge that will help you become better throughout your career.

Additionally, the student scholarship application deadline is quickly approaching. In an effort to make students aware of the water/wastewater automation profession, the student scholarship is a great benefit for our members and their relatives. I began my career as a co-op student for a water/wastewater engineering firm and still look to that moment as the valuable knowledge I gained that helped me understand the industry and shape my career. The students are most impressionable during these years and helping them become aware of the work that has shaped all of our careers can only help our ever growing industry. So please encourage a student family member to submit an application today.

Please do not hesitate to contact me with any of your ideas and suggestions for the division or symposium to help it continue to be beneficial for our members.

Respectfully,

Kevin Patel, PE, MBA
WWID Director-Elect
& 2014 ISA WWAC Symposium Chair
knpatel@sig-auto.com

2014 WWAC Symposium Announced

We are pleased to announce that our 2014 symposium will be taking place August 5-7, 2014 at the Crowne Plaza Orlando-Universal hotel in Orlando, Florida, USA.

2014 CALL FOR ABSTRACTS NOW AVAILABLE

250-word abstracts are due December 2013.
Authors can present a 30 minute presentation,
6-12 page paper, or a large format poster.
See www.isawwsymposium.com for more info

The August 5-7, 2014 timeslot has been chosen so that we don't conflict with the major AWWA and WEF conferences. Keep in mind the ISA WWAC Symposium is the only conference that is focused solely on instrumentation, automation, and SCADA in the water/wastewater sector. We look forward to seeing you in 2014!

- ACE14: American Water Works Association (AWWA)
June 8-12, 2014 – Boston, Massachusetts USA
- **2014 ISA Water/Wastewater and Automatic Controls Symposium** - Crowne Plaza Orlando-Universal Hotel
August 5-7, 2014 - Orlando, Florida, USA
- WEFTEC 2014: Water Environment Federation (WEF)
Sept 27 – Oct 1, 2014 – New Orleans, Louisiana, USA

We have selected the August timeslot for several reasons. First of all this is "low season" for the area which translates into better airline and hotel rates – we know that many of our attendees come from public utilities where every training dollar counts.

We also selected the August timeslot so that participants can bring their families – in August school is out and Walt Disney World is just around the corner.



2014 ISA Water/Wastewater and Automatic Controls Symposium

5-7 Aug 2014.....Crowne Plaza Orlando-Universal Hotel - Orlando, Florida

SAVE THE DATE

AUGUST 5 to 7, 2014

More Information:
www.isawwsymposium.com

Call for Abstracts now available. 250 word submissions due Dec 15, 2013.
2.5 Day Symposium. Short courses on SCADA Cybersecurity & I&C Troubleshooting.
Attendee Registration Rate \$425. Discounts for ISA, AWWA and WEF members.

Presented by the ISA Water / Wastewater Division, the WWAC Symposium helps professionals in the water and wastewater sectors understand how to use instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications for purification, distribution, collection, and treatment of water and wastewater.

| | | | |
|--|---|--|---|
|  Technical co-sponsor |  Technical co-sponsor |  Technical tour co-sponsor |  Technical co-sponsor |
|--|---|--|---|

2014 ISA Water/Wastewater and Automatic Controls Symposium

August 5 to 7, 2014.....Crowne Plaza Orlando-Universal Hotel.....Orlando, Florida, USA
Presented by the ISA Water/Wastewater Industries Division – www.isawwsymposium.com
Technical co-sponsors: Florida AWWA Section, the WEF Automation and Info Tech Committee ,
Florida Water Environment Association, Instrumentation Testing Association, and ISA Tampa Bay Section



Call for Abstracts

Presented by the ISA Water/Wastewater Industries Division, in collaboration with the Florida Section of the AWWA (FSAWWA), the Florida Water Environment Association (FWEA), the WEF Automation and Info Tech Committee, and the Instrumentation Testing Association (ITA), the WWAC Symposium helps professionals in the water and wastewater industries understand how instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications are vital to the treatment and distribution of water, and the collection and treatment of wastewater. The symposium also provides an excellent opportunity to gain valuable technical information, networking, professional development, and continuing education credits (CEUs and PDHs).

This 3-day symposium is focused on the challenges associated with automation and instrumentation in the water and wastewater sector. It features: 2 full days of presentations, a tour of a local water/wastewater facility, a general reception, networking events, a poster session, and a supplier showcase. The first day begins with registration, an optional full-day short course on a current SCADA/automation related topic, and a plant tour. The second day kicks off with a keynote speaker, followed by presentations on general topics such as instrumentation; system integration, automation, plant case studies, new technologies and process optimization/automation. The third day starts with an invited speaker on effective plant automation techniques, and is focused on SCADA in the Workplace with topics geared towards SCADA, PLC, HMI, Expert Systems, Data Modelling, and Alarm Management. The Tuesday-Thursday timeslot has been selected so that families can easily take their kids to Disney World, both during and before/after the symposium. Proceedings will be published and made available to water/wastewater division members, and papers will be considered for publication in the ISA's technical journal, ISA Transactions (www.isa.org/isatrans/).

Guidelines for Submission

- All authors/speakers must pay the speaker registration fee (\$125)
 - The speaker registration fee is a discounted conference rate (regular \$425)
- 250 word (max 300 words) abstract in US English shall be submitted electronically
- Authors must indicate what format they wish to present in:
 - 30 minute presentation (no paper)
 - 6-12 page paper and 30-minute presentation
 - Large format 3 foot wide x 4 foot high poster
- Final presentations must be on the supplied symposium PowerPoint template
- Final papers must be submitted in MS Word using supplied symposium template
- Papers/presentations/posters accepted for presentation and/or publication will require completion of ISA Rights and Responsibilities form
- Student papers and posters are welcome
- The lead author is the main contact

Submissions

Submit your abstract via email in MS Word format to:
abstracts@isawwsymposium.com AND provenzano2@comcast.net

Deadlines

Abstracts Due December 15, 2013
Notification of Acceptance January 16, 2014
First Draft Due March 6, 2014
Final Draft Due..... May 15, 2014

A full author information package, along with sample abstracts, templates and a list of topic ideas can be found at www.isawwsymposium.com

For additional information, contact:

Kevin Patel, P.E.
General Symposium Chair
Signature Automation
+ 1 469-267-0316
knpatel@sig-auto.com

Joe Provenzano, M.Sc.
Symposium Program Chair
KPRO Engineering Services
+1 203-560-1816
provenzano2@comcast.net

Rodney Jones
Staff Contact
ISA Symposia
+1 919-990-9418
rjones@isa.org

Topics include but are not limited to:

Speaking Track 1 – General Topics

- Instrumentation: New Technologies and Applications**
- SCADA Security, ISA99, CSET, and Mitigating Risks**
- Control System Redundancy and Robust Design**
- Wireless Technologies**
- System Integration**
- Automation Techniques for Existing Plants**
- New Control System Technologies**
- Plant Case Studies**
 - Plant Upgrades & New Facilities
 - Control System Upgrades & Replacements
 - Lessons Learned

Process Optimization

- Automated Control Techniques**
- Project Management Lessons for Integration Projects**
- Specific Water and Wastewater Challenges**

Speaking Track 2 – SCADA in the Workplace

- SCADA – Supervisory Control and Data Acquisition**
- Modelling Non-revenue water & collection networks**
- Energy use modelling and Optimization with SCADA**
- Capturing and Evaluating Stakeholder Needs**
- HMI Design for Operator Effectiveness**
- Effective Use of Multiple HMI Screens**
- Human Factors and Control Room Design**
- Intelligent & Expert Systems**
- Alarm Management & Alarm Rationalization**
- Implementing of ISA, EEMUA, WEF & AWWA Standards**
- Call-Out Alarm Rationalization and Techniques**
- Data Reporting & Presentation Techniques / Strategies**
- Data Management, Historians, and Data Retrieval**
- SCADA and the Current Regulatory Environment**
- Mobile HMIs, Tablets, Remote Access, and Dashboards**

WWAC2014_call-for-abstracts_rev2013-07-26.doc

www.isawwsymposium.com

International Society of Automation, 67 Alexander Drive, Research Triangle Park, North Carolina, 27709, USA



Client expectations are high; your overhead shouldn't be.

Integrated water/wastewater solutions from Schneider Electric can deliver the best options with the least engineering overhead.

Flexible architectures that reduce capital costs

The decisions you make in the design phase will most certainly affect your network's performance throughout the life cycle of the system. Our scalable architectures bring together the best automation, motor control, and electrical distribution solutions and comply with all relevant international and local standards. You'll also be able to offer your clients additional value through energy savings programs, high-level dashboards, and more — all from Schneider Electric.

Long-term value through integration

Innovative water treatment solutions from Schneider Electric reduce design costs and facilitate better performance from your process. In addition, integrated end-to-end energy management optimizes operating expenses and delivers savings that are both immediate and permanent. Our tested architectures integrate our best automation, motor control, electrical distribution, and software solutions. And essential features such as security and remote monitoring are fully integrated, meaning that you need look no further for an all-in-one treatment solution.

Add to that a distributed control architecture — including a custom-engineered, design software suite — and you're now able to optimize plant efficiency without sacrificing availability.



Our broad portfolio of expert-engineered **reference designs** save you time during the design phase and ensure a reliable, efficient architecture.



Discover our water and wastewater solutions today!
Download a **FREE** video for a chance to win
Bose® noise-cancelling headphones !

Visit www.SEreply.com Key Code **e192u**



Introducing the 2014 Symposium

By Kevin Patel, 2014 Symposium Chair

I am pleased to announce that our 2014 WWAC symposium is now a reality. The 2014 symposium will be held on August 5-7, 2014 in Orlando, Florida at the Crowne Plaza Orlando-Universal Hotel.

We have been able to negotiate a discounted hotel rate of only \$92/night and online registration is now available. Thanks to our sponsors, we have also been able to keep our attendee pricing low. List price for the 2.5 day symposium is only \$425 and includes breakfast, lunches, a general reception, plant tour, and a printed set of proceedings. ISA members can attend for \$325, and AWWA/WEF members can register for the discounted rate of \$375.

The theme for our 2014 symposium will be “SCADA in the Workplace.” Attendees will gain further insight into the evolving industry along with common problems that continue to be seen in our industry. Real-world applications, procedures and publications will be discussed that will help attendees not only become more informed, but also provide them with the tools to begin making their facility a more robust and efficient workplace.

I encourage you to read our Call for Abstracts and submit an abstract to share your knowledge and experience with others in the industry. Abstract submissions are due on December 15, 2013, so now is the time to start talking to your boss and colleagues if you are interested in presenting. As further incentive, speakers at the symposium receive a further discounted rate of only \$125.

Don't forget to set aside your training dollars for 2014. The symposium offers a very cost effective way to get targeted and relevant training for the annual CEUs/and PDHs you need and learn valuable information targeted for your field of expertise.

I look forward to seeing everyone at the 2014 ISA WWAC Symposium in Orlando.

Kevin Patel
General Symposium Chair
2014 ISA Water/Wastewater and Automatic Controls
Symposium

Read about our 2014 Symposium

August 5-7, 2014

www.isawwsymposium.com

Introducing our 2014 Symposium Chair

By Graham Nasby, WWID Director

The board and I are pleased to announce that **Kevin Patel**, of Signature Automation, will be the general symposium chair for our 2014 and 2015 WWAC Symposiums.



Kevin has been a member of the WWID board since 2011, and was heavily involved with the organizing committee for the WWAC 2012 symposium. For the past year he has served as Assistant Chair of our WWAC 2013 symposium, and was our symposium tour coordinator. Kevin has been on the symposium program committee for the past two years.

Kevin is the vice-president and a founding partner of Signature Automation, a Dallas-Texas based automation consulting firm that is dedicated to providing quality and reliable automation solutions and offers planning, assessments, programming, training, commissioning, documentation and project management services.

Prior to forming Signature Automation, Kevin was an automation project manager with CDM Smith for over eight years. Prior to working at CDM Smith, he also worked at Westin Engineering and Texas Eastern Pipeline as a systems specialist. Within the ISA, Kevin has been heavily involved with several standards committees, most notably ISA18, ISA101, ISA105 and ISA106.

Joe Provenzano returns as Program Chair

We are delighted to announce that industry veteran Joe Provenzano will be our program committee chair again for the 2014 WWAC Symposium.



Since the start of his career in 1957, Joe has been involved in the automation, instrumentation and control sector for over 50 years. He has worked for companies large and small, and been involved in positions ranging from hands-on technical roles to being part of executive management teams.

Joe began his career with Sperry Gyroscope, where he started as an electronics test technician, and soon rose through the ranks to be manager of one of their naval electronics groups. He then moved onto ITT WorldCom for a short stint before joining Data Master Inc., a division of the Bristol Company. Joe ended up spending 29 years at Bristol where he became their VP of Systems Engineering. In 1994, Joe “retired” from Bristol to start what became a 15 year career as general manager for Aaron Associates – a Connecticut-based system integration firm. Since 2009, Joe has been working as a systems specialist and general manager for a number of small firms, and recently started KPRO Engineering Services.

About the 2014 Symposium Hotel

The 2014 ISA Water/Wastewater Symposium will be held at [Crowne Plaza Orlando-Universal Hotel](#) in Orlando, FL. This boutique hotel offers luxury accommodations and is only steps from International Drive's world-famous shopping, dining and entertainment. It is also situated close to both Walt Disney World Resort and the Universal Studio's theme parks.

We have negotiated a special \$92/night hotel rate for attendees. This rate is good from August 4 to 8, and is available for symposium attendees, speakers, exhibitors, and training course participants.

Crowne Plaza Orlando-Universal Hotel

7800 Universal Blvd, Orlando Florida 32819

www.cporlando.com

reservations@cporlando.com

Reservations: 1 888-233-9527 (toll free)

Local: 1 407-355-0550

Fax: 1 407-355-0504

Symposium Hotel Rate: \$92 per night

The hotel is approximately 13 miles from [Orlando International Airport](#) (airport code: MCO).

There are several ways to get to the hotel. If you are driving to the symposium, the hotel is not far from Interstate 4, the Florida 528 Highway, and the Florida Turnpike. For those traveling by air, the airport has a large number of [rental car agencies](#).

Shuttle bus and taxi service from the airport is available via Mears Transportation by visiting online at www.mearstransportation.com or by calling 1-800-223-3868. A one-way taxi trip from the airport to the hotel typically costs around \$35 USD.



2014 WWAC Symposium Hotel – The Crowne Plaza

2014 WWAC Symposium Program Schedule Preview

Presented by the Water and Wastewater Industry Division of ISA, the WWAC Symposium helps professionals in the water and wastewater industry better apply SCADA, Instrumentation and Automation technology to the disinfection, distribution, collection and treatment of municipal water & wastewater.

The preliminary program schedule is as follows:

Monday – Tuesday, August 4-5, 2014

- Optional 2-day course on SCADA / I&C Troubleshooting
- Optional 1-day course on SCADA Cyber Security
- Symposium Registration
- Local Water Treatment Plant Tour (Tues afternoon)

Wednesday, August 6, 2014

- Keynote speakers
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Supplier Showcase & Vendor Presentations
- Evening Reception

Thursday, August 7, 2014

- Invited Speaker
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Poster Session
- Supplier Showcase

Attendees at the symposium can earn up to 20 PDHs (professional development hours).



Provider
#1001262

ISA has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102; (703) 506-3275. In obtaining this approval, ISA has demonstrated that it complies with the ANSI/IACET 1-2007 Standard which is widely recognized as a standard of good practice internationally. As a result of their Authorized Provider membership status, ISA is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET 1-2007 Standard.

Optional Symposium Training Course
Intro to SCADA Cyber Security (1 day)

August 5, 2014

**Intro to SCADA Cyber Security /
Intro to Industrial Automation Network Cyber Security
and ANSI/ISA-99 & IEC 62443 Standards (IC32C)**

Credits: 0.7 CEUs / 14 PDHs

Course Fee: \$660 List Price; \$520 ISA Members

Course Description

Security for Automation, SCADA and DCS systems is a hot topic in our sector. Recent news reports about hackers infiltrating public utility control systems has brought renewed attention to the importance of security our all-important water/wastewater infrastructure. As part of the WWAC symposium, we are offering a timely automation security course that gives an overview of why automation security is needed, how to identify potential risks, and how to go about putting a program in place to mitigate risks. The course also provides an introduction with the ANSI/ISA99 Automation Security Standard, which is a very helpful tool for establishing an automation security program at your facility.

Understanding how to secure factory automation, process control, and Supervisory Control and Data Acquisition (SCADA) networks is critical if you want to protect them from viruses, hackers, spies, and saboteurs.

This course teaches you the basics of the ANSI/ISA99 Security for Industrial Automation and Control Systems standards and how these can be applied to a typical water district. In this seminar, you will be introduced to the terminology, concepts, and models of ANSI/ISA99 Cyber Security. As well, the elements of creating a Cyber Security management system will be explained along with how these should be applied to industrial automation and control systems.

Includes ISA Standards:

- ANSI/ISA99.00.01-2007 - Security for Industrial Automation and Control Systems Part 1: Terminology, Concepts, and Models
- ANSI/ISATR99.00.01-2007 - Security Technologies for Industrial Automation and Control Systems
- ANSI/ISA99.02.01-2009 - Security for Industrial Automation and Control Systems: Establishing an Industrial Automation and Control Systems Security Program
- ANSI/ISA99.03.03-2013: System Security Requirements and Security Levels

Attendees receive a printed bound copy of course notes and PowerPoint presentation handouts.

Optional Symposium Training Course
SCADA and I&C Troubleshooting (2 days)

August 4-5, 2014

**SCADA and I&C Troubleshooting /
Troubleshooting Instrumentation & Control Systems –
Hands On Courses (TC10)**

Credits: 1.4 CEUs / 14 PDHs

Course Fee: \$1715 List Price; \$1370 ISA Members

Course Description:

This course presents a systematic approach to troubleshooting and start-up of single- and multi-loop control loops. You'll see how pressure, level, flow, and temperature loops operate to maintain good process control systems. Some knowledge of instrumentation and control is assumed.

This is a hands-on course where course participants get to use real instrumentation, control and SCADA equipment as part of the lab exercises.

Course Outline

- **Introduction:** Purpose of Troubleshooting | Reasons for Troubleshooting
- **Approaches to Troubleshooting:** Equipment History | Input/Output (Serial) | Shotgun Approach | Logical Analysis
- **Logical Analysis Troubleshooting:** Verify | Identify | Repair | Test | Follow-up on Problems
- **Review of ISA Standard Diagrams and Symbols:** Process and Instrument Drawings | Loop Drawings | Process Flow Diagrams
- **Single-Loop Feedback Control Troubleshooting:** Measurement Concerns | Valve Concerns | Controller Operations | Signal Conditioners | Troubleshooting Simulation
- **Multi-Loop Control Systems Troubleshooting:** Ratio (Controlled Stream, Wild Stream) | Cascade (Primary and Secondary Loop) | Three-Element Drum Level Control | Troubleshooting Simulation
- **Introduction to Digital Control Systems:** Advantages | Digital Control (DDC) | Supervisory | Supervisory Plus DDC | Analog Back-up | HART™ Systems | FIELDBUS™ Systems
- **Distributed Control Functions for Troubleshooting:** Elements | Displays (Graphic, Trend, Alarm)
- **Start-up Concerns:** Safety | Documentation | Tuning Review | Component Check-out

Attendees receive a printed bound copy of course notes and PowerPoint presentation handouts.

Earning CEUs and PDHs at WWAC 2014 Continuing Education Credits at the Symposium

At the 2014 WWAC Symposium, attendees can earn Continuing Education Units (CEUs) and Professional Development Hours (PDHs) for attending the sessions and ISA training courses. Engaging in continuing education and professional development is an ongoing requirement for many professional designations, certifications and licenses. By attending the WWAC Symposium, you can help satisfy your personal professional development and continuing education requirements.

The number of PDHs and CEUs for this year are:

- Symposium attendees will receive 20 PDHs / 2.0 CEUs
- In-Depth Cyber Security Course attendees: 1.4 CEUs
- Flow meter Selection & Sizing attendees: 0.7 CEUs

ISA is an approved Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102; (703) 506-3275. In obtaining this approval, ISA has demonstrated that it complies with the ANSI/IACET 1-2007 Standard which is widely recognized as a standard of good practice internationally. As a result of their Authorized Provider membership status, ISA is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET 1-2007 Standard.



The ISA has also partnered with the Florida Section of the AWWA and the Water Environment Federation (WEF) to certify training credits for use for state-licensed water and wastewater operators, and for state-registered professional engineers.

The ISA has also partnered with the Florida Section of the AWWA and the Water Environment Federation (WEF) to certify training credits for use for state-licensed water and wastewater operators, and for state-registered professional engineers.



For the 2014 symposium, this certification process is currently in progress for the AWWA/WEF-issued CEUs. The CEUs and PDHs that are to be issued by the ISA are already approved.

An announcement will be made once the AWWA/WEF CEU certification process is complete.

As part of the 2012 and 2013 symposiums, all attendees had the benefit of receiving approved CEUs/PDHs for the hours spent in the training course and symposium towards their water/wastewater operator and PE license continuing education requirements.

Top Ten Reasons to Attend the 2014 WWAC Symposium

1. Opportunity to learn from others and “talk shop” with people who understand the challenges of your sector
2. Get to compare experiences and lessons learned
3. Learn about new technologies, products and services
4. Earn PDHs (professional development hours)
5. Earn CEUs (continuing education units)
6. Be actively involved in your professional development
7. Establish contacts in the industry
8. Share Ideas/Experiences with others in the sector
9. Learn Something
10. Have Fun

SAVE THE DATE

**2014 ISA Water / Wastewater and
Automatic Controls Symposium**

August 5-7, 2014

Tuesday - Thursday

**Crowne Plaza Orlando-Universal Hotel
Orlando, Florida, USA**

(with Disney World just around the corner)

www.isawwsymposium.com

2 full days of speakers/presentations

- Track 1 – Instrumentation, System Integration, Automation, Plant Case Studies, New Technologies, Optimization
Track 2 – SCADA in the Workplace, HMI, Alarm Management

**1 full day ISA Course on Cyber Security
2 day ISA Course on SCADA Troubleshooting**

Plant Tour of a local Water Treatment Facility

Trade Show, Reception & Networking Event

Affordable Professional Development for

Plant Operations/Maintenance Staff, Plant Managers,
Plant Designers, Engineers, System Integrators

CEUs – Continuing Education Units

PDHs – Professional Development Hours

What there is to do in Orlando-Florida

Adapted from the Visit Orlando tourism bureau

Lots! In addition to Disney World, Universal Studio's and Sea World, there is a lot to do and see in Orlando as part of your trip.



Theme Parks

Explore what's new and exciting at Walt Disney World® Resort, Universal Orlando® Resort, SeaWorld Parks & Entertainment and Orlando's other world-famous theme parks.



Attractions

Fill your days and nights with unique experiences outside of the theme parks. From rockets to acrobats, Orlando's attractions will take your vacation to new heights.



Golf

Tee off in one of the world's largest golf destinations. Orlando's famously beautiful golf courses, top-ranked instructors and luxurious resorts cater to the most discerning golf enthusiasts.



Arts, Culture, & History

Discover what inspires a city built on imagination. Live music, theater, dance, galleries, museums and festivals are just a taste of Orlando's arts and culture scene.



Shopping

Whether you're looking for a splurge or a steal, Orlando's collection of malls, outlets, boutiques and galleries, all within a fifteen-minute drive, will indulge every retail whim.



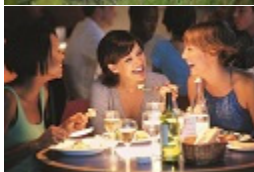
Spas

Whether it's a quick rubdown or a head-to-toe rejuvenation, find your inner (and outer!) glow at one of Orlando's award-winning spas.



Sports, Recreation & Outdoors

Get moving and experience Orlando's unexpected thrills. Whatever your passion, there's an activity for you.



Dining

Whether you're looking for a neighborhood café or a kid-friendly eatery, Orlando's restaurant scene has grown into an eclectic mix of dining experiences at a variety of price points.



Nightlife & Entertainment

Orlando is just as fun after dark as it is during the day. Visit one of our unique entertainment complexes, take in a show at a dinner theater or crack up at an all-ages comedy club.

Symposium Registration

Registration for the symposium is now open!

www.isawwsymposium.com/register

Symposium Registration (Aug 5-7, 2014) includes:

- 2 full days of papers and presentations
- poster session
- networking events
- tour of a local water/wastewater facility late-afternoon of Tues, Aug 5
- admission to supplier showcase
- light breakfasts on Aug 6 and Aug 7
- full buffet lunches on Aug 6 and Aug 7
- evening reception on Aug 6 with cash bar and 2 free drink tickets
- name badge
- list of attendees with contact information
- printed onsite program booklet
- printed copy of symposium proceedings
- There are also two optional training courses (additional course fees applies)

Full Symposium registration

| | |
|------------------------|-------|
| List Price: | \$425 |
| ISA Members: | \$325 |
| AWWA / FSAWWA members: | \$375 |
| WEF / FWEA members: | \$375 |
| Students: | \$125 |
| Authors/Speakers: | \$125 |

Optional Training Courses (Aug 5-6):

| | |
|-------------------------------------|--------|
| 2-day SCADA / I&C Troubleshooting | \$1715 |
| 1-day Intro to SCADA Cyber security | \$660 |



Photo from WWAC 2012 in Orlando, Florida

For more information see: www.visitorlando.com



Refreshingly simple solutions

Learn more at the 2014
ISA Water/Wastewater
and Automatic Controls
Symposium August 5-7,
Orlando, Florida.

Water is an essential natural resource that needs to be actively protected and preserved. To help accomplish this, Phoenix Contact is constantly expanding our offering of innovative products that are the foundation of effective and sustainable solutions for managing water resources.

Phoenix Contact has developed a wide range of product and application solutions for secure, scalable industrial networks, remote connectivity, and reliable power to ensure the availability and reliability of control and SCADA systems for water management.

Visit us at the symposium to learn more about our refreshingly simple solutions for water management.

Get more information at
www.phoenixcontact.com/water



Announcing the 2014 ISA Water/Wastewater Division Student Scholarships

By Michael Fedenyszen, 2014 Scholarship Chair

The ISA water/wastewater industry division (WWID) is pleased to announce the 2014 ISA WWID Student Scholarship Program. Eligible students can win up to \$2000 in scholarship to money to help them pursue higher education.

Students can apply by filling out the application form, accompanied by:

- 200-word essay on why they should win
- a copy of their academic transcript
- confirmation of enrollment form/letter

The application deadline is January 31, 2014.

The division is pleased to continue to providing up to \$2000 of scholarship money to encourage WWID members and their sons/daughters to pursue higher education. In addition, winners will receive a complementary 2-year student ISA membership.

Applications are due by postal mail or email by January 31, 2014. Winners will be notified by February 28, 2014 via telephone and email, and will be required to provide a photo and short biography that can be used for publicity reasons. Scholarship money will be distributed by check and mailed after the winner is contacted and has supplied the required photo/bio.

Scholarships will be awarded at the sole discretion of the WWID scholarship committee, with preference being given to students enrolled in technical programs that lead to careers in the water/wastewater sector.

Download and view the student scholarship application form at www.isa.org/wwid.

Please email completed application form, along with 200 word essay, confirmation of enrollment and copy of academic transcript to:

scholarship@isawwsymposium.com

AND

mfedenyszen@vanderweil.com

We strongly encourage students to **send in their applications by email** (PDF scans of documents) as this is preferred over postal mail.



**Water/Wastewater
Industry Division**

WWID Student Scholarship Last Year's 2013 Recipients

The ISA Water/Wastewater Industries Division is pleased to announce the winners of the 2013 WWID Student Scholarships. Open to college and university students, the water/wastewater division's scholarships are given out to promote higher learning. The 2013 recipients are Jennifer Holmes-Smith and Ben Lueders. Each will receive a \$1000 USD scholarship to help defray the costs of their education.



Photo credit:
Jennifer Hartman.

2013 ISA Water/Wastewater Industries
Division Student Scholarship winner
Awarded: \$1000

Jennifer Holmes-Smith
University of Arkansas
Fayetteville, Arkansas, USA



2013 ISA Water/Wastewater Industries
Division Student Scholarship winner
Awarded: \$1000

Ben Lueders
Villanova University
Villanova, Pennsylvania, USA

**Evolve your Plant with a
Field Wireless Solution**

Control Proof Future Proof

Power Proof

vigilantplant. **YOKOGAWA** ◆
www.yokogawa.com/us

The advertisement features three Yokogawa field wireless devices against a dark blue background with light streaks. The devices are labeled 'Control Proof', 'Future Proof', and 'Power Proof'. The 'Control Proof' device is a rectangular box with an antenna. The 'Future Proof' device is a circular meter with a display and an antenna. The 'Power Proof' device is a larger, more complex unit with multiple ports and an antenna. The Yokogawa logo and website are at the bottom right.



2014 WWID Student Scholarship

APPLICATION FORM

The ISA Water/Wastewater Division (WWID) is pleased to award up to \$2000 of scholarship money to encourage WWID members and their sons/daughters to pursue higher education. In addition, winners will receive a complementary 2 year student ISA membership, which includes a print subscription to ISA InTech magazine. Applications are due by postal mail or email by January 31, 2014. Winners will be notified by February 28, 2014 via telephone and email, and will be required to provide a digital photo, a 3-4 sentence biography, and a 1-2 sentence "thank-you quote" that can be used for publicity reasons. Scholarship money will be distributed by check and mailed after the winner is contacted and has supplied the required photo/bio/quote. Scholarships will be awarded at the sole discretion of the WWID scholarship committee, with preference being given to students enrolled in technical programs that lead to careers in the water/wastewater sector.

Eligibility (check one)

- ISA WWID member, ISA Member # _____
- ISA WWID student member, ISA Member # _____
- Parent/Guardian ISA WWID member, Their Name: _____ & ISA Member # _____

Other criteria (check off each one)

- Currently attending 2-4 year university/college program
- Confirmation of enrollment letter (or scan of student card) attached
- 200 word essay about "why I should win the scholarship" attached
- Copy of previous year's academic transcript attached

Applicant's Name: _____
 Program of Study: _____
 Institute Name: _____
 Institute Address: _____
 Dean of Admissions Name: _____
 Institute Phone: _____

Address while at School

Street: _____ Apt. _____
 City: _____
 State: _____
 ZIP: _____ Country: _____
 Phone: _____
 Email: _____

Home Address

Street: _____ Apt. _____
 City: _____
 State: _____
 ZIP: _____ Country: _____
 Phone: _____
 Email: _____

Applications can be either sent by mail or emailed. Submission of applications by email (as scanned PDFs) is preferred.

Mail completed application to:
 Michael Fedenyszen
 WWID Scholarship Chairman
 60 Whittier Street
 Haverhill, Massachusetts, 01830, USA

OR **Email completed application as scanned PDFs to:**
scholarship@isawwsymposium.com
 AND
mfedenyszen@vanderweil.com

APPLICATIONS MUST BE RECEIVED BY JANUARY 31, 2014

www.isa.org/wwid

WWID holds its first Technical Webinar on March 6, 2013 – Cyber Security

By Kevin Patel, WWID Director-elect

On March 6, 2013 the ISA water/wastewater division held a webinar that discussed cyber security threats and techniques for how to manage the risk. We are pleased to make the webinar available as a video. These are available as PDF file of the slides and a WMV video file of the actual presentation.

These files found online at the following addresses:

<http://isawwsymposium.com/cyber-security-webinar-video-from-march-6-2013-isa-waterwastewater-division/>

or

http://www.isa.org/MSTemplate.cfm?Section=Cybersecurity_Webinar&Site=Water_Wastewater_Division&Template=/ContentManagement/MSHTMLDisplay.cfm&ContentID=92774

This webinar focused on the ever increasing needs for implementing cyber security strategies for operations involving control systems. It includes a brief overview of the evolution of the cyber threat, the trends in the market as they relate to addressing these issues, and some general recommendations for addressing concerns related to cyber security. Additionally, our presenters provided insights and perspectives on United States FEMA's recent National Level Exercise (NLE) 2012.

The NLE is part of a series of US congressionally mandated preparedness exercises that are held each year with the intent of preparing and educating the industry in the event of a catastrophic event on the nation's infrastructure. Each year, different hazards are examined and often involving one or more of the nation's critical infrastructures. In 2012, the NLE examined a national response to a major cyber-attack, and it included notional impacts to control systems for several markets, inclusive of water/wastewater. Various levels of government, emergency responders, utilities from several states and software manufacturers themselves were involved in the exercise to help gain an understanding of the potential impacts of, and responses to, a cyber-attack.

The presentation runs approximately 45 minutes with a Q&A session held during the last 15 minutes of the Webinar.

Special thanks to our presenters Chris Fogle from [Delta Risk](#) and Rick Hidalgo from [Signature Automation](#).

We are also currently in the process of planning our next webinar which is a highlight from the 2013 ISA WWAC Symposium. Make sure you visit the ISA Symposium website to get up-to-date information on the next webinar at www.isawwsymposium.com.

**NO ONE
PROTECTS
WATER
SCADA
SYSTEMS
BETTER
THAN
FALCON
ELECTRIC**

Get the Highest Level of Power Protection:

- U.L. Listed Wide-Temp Online UPS
- Operates in -30°C to 65°C
- 4-Year Rated Batteries at 50°C
- True Double-Conversion Online Sine Wave Design

Keeping water process control and test systems operational 24x7

800.842.6940  sales@FalconUPS.com

**Signature
Automation**

Providing automation solutions today
for a better tomorrow

Office: 469-619-1241 Fax: 469-619-1242
info@sig-auto.com

www.signature-automation.com

Partnerships with WEF, FWEA, FSAWWA, ITA and OCU Renewed for 2014

By Graham Nasby, WWID Director

I am pleased to announce that we will again be partnering with various other organizations to put on our 2014 ISA Water/Wastewater and Automatic Controls Symposium.

Our 2014 technical co-sponsors will again be:

- WEF Automation and Information Technology Committee, Water Environment Federation (WEF AIT)
- Florida Section of the American Water Works Association (FSAWWA)
- Florida Water Environment Association (FWEA)
- Instrumentation Testing Association (ITA)

Part of these partnerships means discounted symposium rates for AWWA, WEF, FSAWWA, FWEA and ITA members. Members of these organizations are able to register at a discounted rate compared to the normal list price. (ISA members also get a discount as well.)

We will again be offering a tour of a local water treatment plant as part of the 2014 WWAC Symposium. Note: An announcement about which facility we will be touring will be made closer to the symposium.

We look forward to reporting more details about these partnerships in the next issue of this newsletter.



27 Years of SCADA

VTScada
Software for Monitoring & Control

Solutions that evolve with you.
www.trihedral.com

- Extend your vision
- Easy to understand information for your operators
- Remote video monitoring
- Wireless or wired solutions
- Integration of video/alarming with your process control system
- Rugged industrial cameras

www.ivcco.com

IVC
INDUSTRIAL VIDEO & CONTROL

LINEATOR™
Advanced Universal Harmonic Filter

#1 Performing Passive Harmonic Mitigation Filter

An easy to apply, passive filter capable of reducing Adjustable Speed Drive (ASD) harmonics by up to 10 times with none of the inherent problems of conventional filters.

- High-efficiency harmonic solution
- Exceeds 18-pulse performance
- Guaranteed to meet IEEE 519 standards

Real-world expertise in a variety of Wastewater / Water treatment applications:

Dewatering centrifuges
Aeration blowers
Raw Sewage Pumps
Grit Pumps
Lift Pumps

www.mirusinternational.com
1-888 TO MIRUS (1-888-866-4787)



Wireless Puts You Back in Control

You need a flexible, cost-effective, integrated solution for water management.

Cooper Bussmann is the market leader in water/wastewater wireless solutions.*



We provide a comprehensive water/wastewater solution with a SCADA system, Network Management System, ELPRO wireless radios and wired Ethernet switches.

Wireless I/O and repeater functionality provides a flexible, low power, integrated solution. Real-time monitoring over extended distances provides immediate indication of key data points and faults. Network management software keeps you on top of your operations.

Our water management solution delivers cost savings, provides reliability and ensures safety to keep you in control of your assets.

Contact us to find out how.

*Source: #1 Supplier of Industrial Wireless Solutions for Water & Wastewater, ARC Advisory Group 2012 Wireless Devices for Process Manufacturing Worldwide Outlook.

2013 Symposium Boasts 250 attendees!

Official ISA news release from August 13, 2013

Research Triangle Park, North Carolina, USA. The International Society of Automation (ISA) is pleased to report that the 2013 ISA Water/Wastewater and Automatic Controls (WWAC) Symposium enjoyed record attendance numbers. Held in Orlando, Florida, USA, on 6-8 August at the Crowne Plaza Orlando-Universal Hotel, the symposium attracted more than 250 attendees. Additionally, the symposium's two short courses, one on in-depth cybersecurity and the other on water flow meter selection/sizing, were sold out with more than 40 participants from water and wastewater utilities from across North America.

The record attendance numbers, which represent more than a 50% increase from the previous year, highlight the growing importance of automation, data analytics and cybersecurity in the municipal water/wastewater sector. The surge in attendance is also testament to the symposium's continued focus on today's challenges in automation, instrumentation and SCADA (supervisory control and data acquisition) for the important role that water/wastewater holds in our public infrastructure.

Now in its eighth year, the annual ISA WWAC symposium is experiencing a new-found growth in popularity thanks to growing alliances with the Water Environment Federation (WEF), the Florida Section of the American Water Works Association (FSAWWA), the Florida Water Environment Association (FWEA) and the Instrument Testing Association (ITA). By forming strong partnerships with other associations, the symposium has been able to reach out to automation, instrumentation and SCADA professionals across the industry. For members of these associations, the symposium represents targeted professional development, training and networking opportunities that they could not find elsewhere.

"Our secret is our focus," says Bob Lindeman, the past-President of ISA who gave the opening remarks at the symposium. "Our annual ISA water/wastewater symposium specifically caters to the needs of professionals involved with automation, instrumentation and SCADA in the municipal water and wastewater sectors. It is a niche event and we are proud of its increasing popularity. There is no other event like it in North America."

The symposium is also specifically positioned so that municipal utilities could easily send their staff. Thanks to the symposium's sponsors, including Schneider Electric, Phoenix Contact, Cooper Bussmann/Eaton, IBM, Yokogawa, and Eramosa Engineering, among others, the symposium was able to offer inexpensive registration rates for all its attendees. Additionally, thanks to partnerships with the AWWA and WEF, attendees were able to gain approved Continuing Education Units (CEUs) and Professional Development Hours (PDHs) that could be used towards continuing education requirements for a wide variety of state-issued operator, engineering and technician licenses.

Attendees were treated to hot breakfasts, fully catered lunches and an exhibitor hall where they could learn about new products and services. The symposium's exhibitors, who were all focused on automation, instrumentation and SCADA products and services, enjoyed the show's focus and the ability to talk with attendees in a targeted, yet intimate, atmosphere.

This year's technical program featured some 42 speakers, arranged in two parallel speaking tracks, who spoke on a variety of SCADA-related topics. Presentations ranged from advanced process control, instrumentation and alarm management techniques to better control room design, SCADA retrofit, and cybersecurity best practices.

2013 Symposium: Quick Stats

250 symposium attendees

40 ISA training course attendees

4 technical co-sponsors

24 exhibitors

20 sponsors

12 media Partners

Headliner speakers included a keynote by IBM's Carey Hidaka on the advantages of data analytics; an invited talk by John Cusimano about the state of cybersecurity in municipal water plants; and an invited talk by P. Hunter Vegas who gave a humorous, yet highly informative, presentation on some of the challenges associated with SCADA retrofit projects. Guest presenters also included speakers from the ISA Tampa Bay section, the Water Environment Federation, and the Florida Section of the AWWA.

As a lasting benefit of the symposium, this year's participants also received copies of the conference proceedings in a two-volume bound book and PDF-based digital versions, which made it easy for them to take their newfound knowledge home with them.

In the symposium's closing remarks, the General Symposium Chair Graham Nasby, of Eramosa Engineering, spoke about the need for greater collaboration in the sector. He also talked about the growing importance of automation, instrumentation and SCADA in the municipal water/wastewater sector, and how the ISA WWAC Symposium is a natural "niche event" that specifically caters to professionals involved with these unique aspects of our collective public infrastructure.

The 2014 ISA Water/Wastewater and Automatic Controls Symposium will be taking place 5-7 August 2014 at the Crowne Plaza Orlando-Universal Hotel in Orlando, Florida. The Call for Abstracts for the 2014 technical program is now available and can be found at www.isawwsymposium.com.

Photos from 2013 Symposium

Thanks to all the participants who contributed photos. This year's photographers included Heidi Cooke, Pavlov Seedy, Andres Perez, Laura Shemanski, Kevin Patel & Rodney Jones.



Our symposium hotel – Crowne Plaza Orlando-Universal



Symposium registration desk with Rodney Jones, ISA staff



Speakers Dinner with volunteer Pavol Segedy (white shirt)



Cyber Security training course with instructor John Cusimano



On the Symposium Tour Bus, with tour coordinator Kevin Patel (standing in the back with the green shirt).



Symposium chair Graham Nasby gives the opening remarks.



On Day 1 it was standing room only in the presentation room.



Setting up in the Exhibit Hall



Vince from Schneider Electric showing customers their live demo



Invited Speaker John Cusimano talking about SCADA Cybersecurity.



WEF & ISA Team: Barry Liner, Tom DeLaura and Graham Nasby



ISA Past-President Bob Lindeman giving opening remarks via Skype.



Invited Speaker P. Hunter Vegas talks about the perils of how to manage SCADA retrofit projects.



Penny Chen from Yokogawa gives a presentaoitm on the latest ISA100 wireless developments



WEF Automation and Info Tech Committee Chair Tom DeLaura shares a coffee with keynote speaker Carey Hidaka from IBM



Applications engineers at the Xylem booth demonstrate their products to attendees.



Tom Shaefer from Rockwel Automation talks about the benefits of Ethernet-based VFD interfacing. Moderator Dave Hobart looks on.



Incoming 2014 Symposium Chair Kevin Patel gives outgoing 2013 chair Graham Nasby "Dude" bag as a thank you for a job well done.



Johnathan Mitchell from CDM Smith speaking about how to estimate expected SCADA equipment lifetimes.



Volunteer appreciation dinner in Orlando after the symposium. Seated in the foreground are longtime moderator Paul Lanzillotta (blue shirt) and program chair Joe Provenzano (white shirt).



ISA Technical Divisions information booth.

Thanks to our 2013 Symposium Sponsors

The symposium organizing committee would like to thank our 2013 symposium sponsors:

Platinum Sponsors



Gold & Keynote Sponsor



Gold Sponsors



Symposium Technical Co-Sponsors



Symposium Tour Sponsors



Tour sponsor



Tour Transportation Sponsor

Silver Sponsors



Media Partners



WATER DESALINATION REPORT

How to Become a Sponsor for 2014

For more information on how to become a sponsor of the ISA Water/Wastewater and Automatic Controls Symposium, please refer to our 4-page full-color sponsorship opportunities brochure: www.isawwsymposium.com/exhibit-sponsor/.

Now is the time to consider sponsoring WWAC 2014!

Thanks to our 2013 Symposium Exhibitors



Exhibit Booth Information for WWAC2014

Exhibitor tables are now available for WWAC 2014, which will be taking place August 5-7, 2014 in Orlando, Florida at the same hotel.

Exhibitor tables at the 2014 ISA Water/Wastewater and Automatic Controls Symposium will be priced at \$875 each which include:

- one six foot table with skirting, 2 chairs, duplex electrical outlet
- two full conference passes, which include ID badges and full conference access (an \$850 value)
- additional vendor passes can be purchased for \$200 each
- breakfasts, coffee breaks, and lunches on Day 1 and Day 2
- admission to the general reception with cash bar on the evening of Day 1
- exhibits room hours: Day 1 & 2 (8:00am-5:00pm), and during Aug. 6th evening reception
- exhibit setup: on Tues August 5, 2014 from 6pm-9pm. exhibit teardown is Thursday, August 7 from 5pm-8pm

SAVE THE DATE
2014 ISA Water/Wastewater Symposium
Aug 5-7, 2014 – Orlando, Florida

advancing*innovation

Electrical & Power Systems Services
 Arc Flash Hazard Analysis | Applications Programming
 Instrumentation and Controls | Water Supply
 Wastewater/Reclamation | Sustainable Development

Brown AND Caldwell

100% Environmental | Employee owned | Offices Nationwide
 BrownandCaldwell.com

Note: The WWAC2013 exhibit hall is now sold out!

How to Sign up as an Exhibitor

For more information on how to exhibit at the symposium please refer to our 4-page full-color sponsorship and exhibitor opportunities brochure: www.isawwsymposium.com/exhibit-sponsor/. Now is also a good time to start thinking about WWAC 2014. Reserve your spot today!

Symposium Tour Report

Kevin Patel, 2013 Symposium Tour Coordinator

At this year's 2013 ISA WWAC Symposium, attendees had the opportunity to tour the Orange County Utility's South Water Reclamation Facility at no additional cost. This facility is permitted as a 43.0 MGD design capacity activated sludge treatment facility, with flow equalization, chemical feed facilities, tertiary filtration, and high-level disinfection. The facility consists of three process trains: a 15 MGD north train with Modified Ludzank-Ettinger (MLE) process, a 7.5 MGD southeast train with Carrousel oxidation ditch treatment process and a 20.5 MGD southwest train with modified step-feed treatment biological nutrient removal (BNR) process.



Tour attendees in front of the Tour Bus – with our hosts from Orange County Utilities out front

The reclaimed water from these three trains can be directed to separate pump stations or they may be combined together. The reclaimed water system includes citrus irrigation, rapid infiltration basins, golf course irrigation, small commercial and residential irrigation, and other onsite uses. This facility, in partnership with City of Orlando's wastewater facility, provides reclaimed water to the first of its' kind, Conserv II reclaimed water distribution system.

The solids handling system includes waste activated sludge storage, gravity belt thickeners, digesters, belt filter presses and a loading station. Stabilized biosolids are land applied on permitted land application sites.

This facility utilizes an extensive instrumentation and SCADA control system to provide continuous monitoring of the plant processes and data collection to maintain and document compliance with regulatory requirements.

Tour attendees got to learn about the plant's treatment process and its fully automated control system. Major pieces of equipment were explained and insight was offered as to how the plant's automated control system worked. The tour comprised of a walking tour where attendees had the chance to "walk through the process." In addition to walking through the plant, attendees had the opportunity to see the plant's central control room and see how the operators used the plant's SCADA system to remotely control the various parts of the plant. The tour was hosted by the OCU's EWRF Plant Manager Tim Madhanagopal.



Aerial View of the plant

Tim Madhanagopal is the Plant Manager for Orange County Utilities' (Florida, USA) Eastern Water Reclamation Facility. The Eastern Water Reclamation Facility he helped design, is considered a model facility and is included in the United Nations technical source book as a reference for the benefit of developing nations. Mr. Madhanagopal holds a BE in civil engineering from NIT, MSCE in environmental engineering from Wayne State University, Michigan and an MBA from University of Central Florida. He is a member of professional and technical societies, including the ASCE, WEF, AWWA, and APWA. Mr. Madhanagopal has received awards for his achievements including a Distinguished Service Award by NSPE in 2007, Engineer of the Year honor from the Florida section of ASCE in 2005, the WEF 'Quarter Century Operator' in 2003, and one of the Top 10 Public Works Leaders of the Year from AWWA in 2003.



Plant security was tight!

Orange County Utilities Department provides water, wastewater and solid waste services to the unincorporated areas of Orange County, Florida. Orange County operates the South Water Reclamation Facility (SWRF), which has a treatment capacity of 43 million gallons per day (MGD); the Eastern Water Reclamation Facility (EWRF), which has a

treatment capacity of 19 MGD and the Northwest Water Reclamation Facility (NWRf), which has a treatment capacity of 10.5 MGD. Orange County also maintains 1716 miles of wastewater pipes and 687 wastewater pump stations.



You know the plant is big when you use a bus to get around



Plant Manager Tim (white shirt) keeps an eye on us



Some of the plants many aeration basins.



Just in case you weren't sure what the plants treats, symposium chair Graham Nasby points it out



Tom shows us the plant's new VFDs for the raw lift pumps



In the plant's new central control room

2013 WWAC Symposium Award Winners

By Graham Nasby, 2013 Symposium Chair

As general symposium chair it is my pleasure to announce the awards for best papers, best presentation and best poster from this year's 2013 WWAC Symposium. These award winners were selected based on input from symposium attendees and the program committee. Please join myself and program chair Joe Provenzano on congratulating this year's winners!

BEST PAPER

- 1st **Taking DeNitrification to the Next Level: An Upgrade of Proven Technology with 21st Century I&C** - Jaime A. Alba, CDM Smith
 - 2nd **WWTP Operator: The poor cousin? Opportunities for Better Wastewater Plant Control Room Design** - David Lee, User Centered Design Services
 - 3rd **A Strategic Approach to SCADA Cyber Security: Water and Wastewater Network Architecture and Segmentation** - Norman Anderson and Bill Phillips, CH2M HILL
- Honorable Mention **Smart Water Networks for Operational Efficiency Gains** - Brian Heimbigner and Mark Bitto, ABB

BEST PRESENTATION

- 1st **Reinventing the Role of the SCADA Historian: Distributed Redundancy, Centralized Access** - Blair Sooley, Trihedral Engineering
 - 2nd **Owner Specific SCADA Standards: What They Are and Why Should You Have Them** - Emile Richard, Portland Water District (Portland, Maine, USA)
 - 3rd **Is There an Oversight in UV Reliability? Examining the Critical Role of Reliable Power in UV Disinfection** - Grant Van Hemert, Schneider Electric
- Honorable Mention **Gaining Control of Effluent Residual** - Narciso Santiago, EMA

BEST POSTER

- 1st **Designing NFPA 820 Compliant Monitoring Systems for Wastewater Pumping Stations** - Tom Ridgik and Greg Yarberry, CH2M HILL

Our 2013 Symposium award winners will be recognized in person at a ceremony that will be held as part of our 2014 symposium on August 5-7, 2014 in Orlando, Florida. The winners will each be presented with a personalized award plaque to recognize their achievement. A news release will also be issued shortly at www.isa.org

Wonderware
Mobile Workforce and
Decision Support System

What your
SCADA system
can't see,
can hurt you.

Windows Mobile

Don't be surprised by events in the field. Take the guesswork out of field maintenance of assets that are outside of your SCADA network. Wonderware IntelTrac mobility solutions empower your field personnel to maintain and manage all assets as if they were right next door.

IntelTrac mobile workforce and decision support system will help you:

- Enforce standard operating procedures
- Improve safety and ensure compliance
- Increase workforce productivity
- Maintain asset availability with reduced costs.



info@wonderwarecanadast.ca www.wonderwarecanadast.ca

Wonderware CanadaEast, 2140 Winston Park Drive, Suite 202 East
Oakville, Ontario L6H 5V5 905-829-9300

Thank you to 2013 Symposium Committee



Graham Nasby, P.Eng., PMP
Eramosa Engineering Inc.
General Symposium Chair
& Director, WWID



Kevin Patel, PE
Signature Automation
Assistant Symposium Chair
& Director-elect, WWID



Jon DiPietro
Bridge-Soft LLC & Domesticating IT
Marketing Chair
& Past-Director, WWID



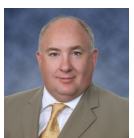
Pavol Segedy
Brown & Caldwell
ISA Members Liaison
& Membership Chair, WWID



Tom DeLaura, PE
Eramosa Engineering International
WEF Liaison



David Wilcoxson, PE
MWH Global
Committee Member
& Secretary/Treasurer, WWID



Derrick Stableford, MIET, LCGI
Associated Engineering
Committee Member



Bob Loncar
Region of Halton (Ontario, Canada)
Committee Member



Dr. Gerald Cockrell, PhD
Indiana State University (Prof. Emeritus)
Higher Education Liaison



Michael Fedenyszen
R.G Vanderweil Engineers LLP
Honors & Awards Chair
& Student Scholarship Chair, WWID



Rob Penfold
Sylvite Industrial Chemicals
Program Booklet Designer



Rodney Jones
ISA Staff
Senior Administrator,
ISA Technical Divisions

avid solutions
industrial process control

Life Sciences • Specialty Chemical
Pulp & Paper • Power Generation

www.avidolutionsinc.com
888.771.1774

Endress+Hauser

People for Process Automation

“We’ve revolutionized samplers”
Monitoring station that collects samples
and measures various parameters at the same time

www.us.endress.com/watersampling

Thank you to our 2013 Program Committee



Joe Provenzano, MSc
Program Committee Chair

KRPO Engineering Services
Naugatuck, Connecticut, USA



Richard Birdsell, PE
Orange County Sanitation District
Orange County, California, USA



Peter Craan, PE, CAP
Hazen and Sawyer
New York, New York, USA



Jon DiPietro
Bridge-Soft LLC & Domesticating IT
Manchester, New Hampshire, USA



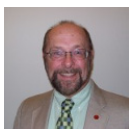
Bob Dusza
Manchester Water and Sewer Dept.
Manchester, Connecticut, USA



Joshua Gelman, PE
CDM Smith
Fairfax, Virginia, USA



David Hobart, P.Eng.
Hobart Automation Engineering
Stowe, Vermont, USA



Michael Fedenyszen
R.G Vanderweil Engineers LLP
Boston, Massachusetts, USA



Paul McGuire
North East Ohio Regional Sewer District
Cleveland, Ohio, USA



Graham Nasby, P.Eng., PMP
Eramosa Engineering Inc.
Guelph, Ontario, Canada



Kevin Patel, PE, MBA
Signature Automation
Dallas/Fort-Worth, Texas, USA



Matthew Phillips, P.Eng.
City of Guelph Water Services Department
Guelph, Ontario, Canada



Steve Valdez
GE – Water/Wastewater Division
New York City, New York State, USA

The average citizen uses 100 gallons of water every day. Good thing 100 million of them are served by treatment plants that rely on Emerson automation solutions. One hundred million – that's no drop in the bucket. Emerson's Ovation® control and SCADA technology is helping municipalities of all sizes meet the growing demand for clean, safe, reliable water. www.EmersonProcess-Water.com/OvationWater

OVATION®
EMERSON Process Management

The Emerson logo is a trademark and service mark of Emerson Electric Co. ©2011 Emerson Electric Co. Ovation and the Ovation logo are registered trademarks of Emerson Process Management.

EMERSON. CONSIDER IT SOLVED.

Thank you from the 2013 Symposium Chair

By Graham Nasby, 2012 & 2013 Symposium Chair

Leading our symposium for the past 2 years has been a great experience, but now it's time for me to sing my swan song. But before I do, I'd like to take this opportunity to share some of my thoughts and insights on what it has been like coordinating our symposium for the past two years.

During the past 2 years our symposium has undergone an incredible resurgence. It has been quite an adventure to be involved with rebuilding our symposium from the humble state it was in back in 2011 to the very-successful conference that you see today.

Looking back to what I saw in 2011, I'm still not 100% sure why I took on the job at the time as 2012 symposium chair.

Things were looking pretty bleak in 2011. At the time the WWAC symposium was being held in St. Louis and was not well publicized. I had only heard about it by word of mouth from an ISA colleague. I was there as a speaker with a client of mine to give a talk about a SCADA Standardization project we had just undertaken. We were astonished to find on arrival that the 2011 symposium only had 31 attendees. Thankfully the technical content was good, but we were really scratching our heads about the low turnout. Especially with the knowledge that there are over 16,000 water plants and 21,000+ wastewater plants in the USA alone, and every single one of them makes use of SCADA.

So when I was approached by ISA leadership in late-2011 to be the 2012 symposium chair, I wasn't sure what to think. Why was an event that should be a slam-dunk doing so poorly?

The reasons were complex, but could be traced to a problem that had been years in the making. Due to a combination of retirements and staffing reductions because of the recession, many of the ISA staff and volunteers who used to make the symposium "work" simply were not there anymore. What was left was a much smaller staff apparatus and only a handful of volunteers – not exactly a recipe for success.

Once I had a good handle on the internal reasons the symposium was struggling, I then got on the phone with my vendor contacts to find out if there was interest. There was, but each had some friendly advice on how to approach it. These calls were then followed by several more to contacts I knew at water utilities and at other engineering firms. All said they would be interested in sending staff to a symposium for training but there were certain things they wanted to see. The symposium had to be in some way associated with the AWWA and WEF, the event had to give state-recognized CEU training credits (only possible with AWWA/WEF involvement) for operating staff, it had to be focused, it had to be affordable, and lastly it needed to have a critical mass of 200-300 attendees. It also wouldn't hurt if it was somewhere "fun" like in Orlando (think: Disney), and it should be in the summer so they could bring the kids. Also make sure it does not conflict with WEFTEC or ACE. So there was interest.

So then I made the harder phone calls, I called up my vendor contacts again and asked if they would support the symposium by verbally committing to be gold and platinum sponsors. Thus began the involvement of Schneider Electric, Phoenix Contact and Gray Matter Systems with the symposium. Others like Cooper Bussman and Trihedral soon followed.

With vendor support in hand, I then agreed to take on the role as 2012 symposium chair in late-2011. The rest sort-of just fell into place after that.

Many hands make light work, so I concentrated on building a large committee of volunteers for the symposium.

We moved the symposium back to its traditional home in Orlando, Florida for 2012. We found an inexpensive hotel and went back to the original early-August timeslot.


We launched a new symposium website at www.isawwsymposium.com and made extensive use of social media to promote the event. We made a new marketing plan.

We partnered up with the Florida AWWA, Florida WEA, the WEF Automation and Info Tech Committee, Instrumentation Testing Association and local ISA sections to co-promote each other.

But most of all we, as the symposium committee, listened to our stakeholders and the rest is history.

The stats speak for themselves. From just 31 attendees in 2011, we grew to 171 in 2012 and then 250 in 2013. The committee should be very proud of this accomplishment.

It's been a pleasure to be general symposium chair for the past 2 years, and I wish our incoming 2014 symposium chair Kevin Patel every success. He is inheriting a great team.



Investing In Today For Tomorrow

**Electrical
Engineering**

SCADA

**Instrumentation
& Control**

**Information
Technology**

Asset Management

www.eramosia.com
Guelph · Calgary · Detroit
519 · 763 · 7774

excellence. period.



We Bring Monster Solutions to the World



 **JWC**
Environmental®
Trust Monster Quality

Founded 40 years ago in Southern California we've become a world leader in solids reduction and removal solutions. From powerful, pump-protecting Muffin Monsters®, to heavy-duty, high-flow fine screens. Find a world of solutions at www.jwce.com or visit us at WEFTEC booth 4617.

(800) 331-2277 | (949) 833-3888

TECHNICAL ARTICLE

Grounding Introduction

By Derrick Stableford MIET, LCGI, EngTech

Some of my colleagues would say that grounding is a passion of mine. Me, I just say I'm well-grounded in the subject. I prefer to think that the grounding of an installation is actually the most important part of the electrical or instrumentation installation. I like to refer to it as the electrical fireman, most of the time it sits there looking pretty, not really looking like it's doing anything. However this image is incorrect because it does many things at the same time, in fact it's one of the most industrious parts of our plants

At the higher energy level, it provides lightning protection to the treatment plant, diverting potentially destructive energy levels away from the building, and for our purposes, away from sensitive control, and communication systems.

The ground also provides our functional safety, allowing current to rise to the point where the protective device operates.

At the lower energy level, it's the great equalizer, giving serial communication networks common reference points for their conversations to take place, a bit like diplomats agreeing on a language to discuss the latest bi-lateral agreement.

All of this supposed inactivity hides a dark side which can bite us, if we are not careful. Like the fireman, many people don't really want to pay for them, but if you have a crash you want them there in no time flat, and you couldn't pay enough for the service.



Figure 1- Example Ground Bar in a Control Panel

This is particularly true for grounding I've found. The current electrical codes in North America are very reticent to ask for mandatory testing of grounding, yet for most installations this is as easy to test as plugging a ground fault loop meter in to a control panel receptacle, and hitting the test button. The meter then gives us a readout of the prospective fault current. Some

of you may be thinking that is the realms of the dark side of the force, the electricians. I would say there are probably more electricians that cross trained into controls and instrumentation, than you think.

Why should we do it, well I recently imported an installation tester from Europe, it was for my own benefit really, I wasn't happy with a circuit breaker that didn't trip in my own home, but not long after sliding it past the eagle eye of the customs agent, I was asked to visit two water and wastewater treatment plants, one having had a fire in an MCC, another was having issues with a variable speed drive, and motor bearing. I applied my instrument, to both plants and found both had main ground issues. In both I found that main protective devices would not operate. Resolution in one case was easy- the electrician had forgotten to connect to the Xo (neutral) of the transformer to the correct place. The other was more problematic, and required a combination of resolutions, particularly as it involved a high voltage supply.

$P=E^2/R$ $I=E/R$ $Z=$ Impedance from test device.
Substituted for R in the equations.

The figures below represent one of the two problematic sites-

Site #1: This one is a site with a 5000A main incoming service. The example below is taken at the incoming switchboard. The instrument is rated for 500V, hence a single phase test at 347V for a 575V service keeps the device in rating.

$E=347V$
 $Z=0.96$
 $I=361.45A.$
 $P=125.4kW$

Fire had occurred in a downstream MCC, 400A submain feeder.

The current of 361A is what would of occurred in a phase to ground short. The protective devices would not have even seen the fault.

Site #2: This is what a fault on the main 600v switchgear at another site would develop to provide comparison to site #1.

$E=347V$
 $Z=0.03$ (measured at feed to 600V subpanel)
 $I=11,566.67A$
 $P=4.01MW$

Here the protective devices would all operate correctly based on the time current curves.

Discussion: There are many other problems we can have with an installation, the most common for instrumentation, is ground loops, caused by connecting the cable shield to an instrument at both end of the cable. Normal practice, which is often missed by junior installers, is grounding the shield only at the source of energisation. The use of loop isolation/splitter modules can help with a complex repeated 4-20mA signal. Shields should be insulated, with heat shrink/sleeves.

It's always worth the time, talking to junior electricians, as your installation may be the first serious instrumentation project they have worked on.

But even good working practices can come undone occasionally. Flowmeters can pose problems with some manufacturers supplied cable. One installation which I helped commission, had one of the manufacturers cable with a clear insulator on one of the flowtube antenna cables. The electrician was also using clear sleeves on their shields. To all quick visual inspections, it looked ok(as seems usual with flowtube locations it was in a dark, difficult to access confined space) even operated correctly at low flow levels, except that at high flows, the figures were out to lunch. Much frustration resulted, especially as high flow levels were difficult to plan for during the start-up, due to existing site operating conditions. The problem was traced to an exposed conductor that was hard to see due to see-through insulation on the cable.

As can be seen above we have only glanced at two small areas of installation grounding. I hope this has sparked an interest in further researching the often overlooked area of grounding. Especially as more and more automation makes the quality of the plant's grounding take on a lot bigger, multifaceted role.

About the Author-

Derrick Stableford MIET, LCGI, EngTech is a continental transplant from the UK to Canada, and has worked in the water industry on both sides of the Atlantic. A member of the Calgary ISA section. As a former electrician, has worked in all areas of electrical and automation practice, including Trade School Lecturer. Currently a designer, specializing in communications and automation for Associated Engineering. Contact: stablefordd@ae.ca

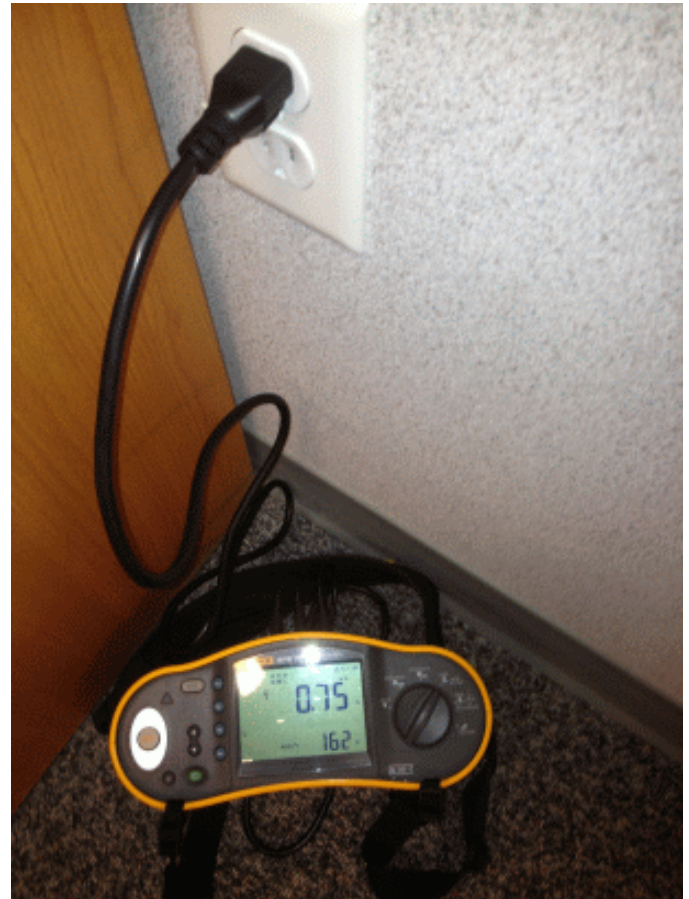


Figure 2 – Example of a Ground Fault Loop Meter

Glenmore Water Treatment Plant Control Centre

Associated Engineering provides consulting engineering, project management, and asset management services in the infrastructure, water, environmental, transportation, energy, and building sectors.

Sustainability is part of our business, as well as every project we undertake. This is our commitment to improving the environment and reducing our carbon footprint.

The Many Benefits of ISA Membership

Are you taking advantage of your ISA Membership?

- Information exchange and networking - 154 local sections for professional Members and 115 for student Members
- Free online viewing of ISA's automation standards - ISA has published more than 150 standards, recommended practices, and technical reports through the dedicated efforts of a network of industry experts
- Free technical library - unlimited downloads of over 2,500 technical papers published at ISA conferences and symposia
- Free access to over 40 online, pre-recorded web seminars
- Free *InTech* magazine and *Automation Weekly* e-newsletter
- Technical Division membership, connecting Members within 19 industries, sciences, and technologies—around the world
- Free online access to *ISA Transactions* - covering the latest advances in the science and engineering of measurement and automation
- Email list serves for open-forum discussions
- ISA Jobs website for free career and job postings
- Professional development opportunities, including free Leadership Development Certificate Program and volunteer opportunities that bring professional recognition
- Free Mentoring Program to enhance workforce development and careers

Setting the Standard for Automation™

Show your success With ISA Senior membership

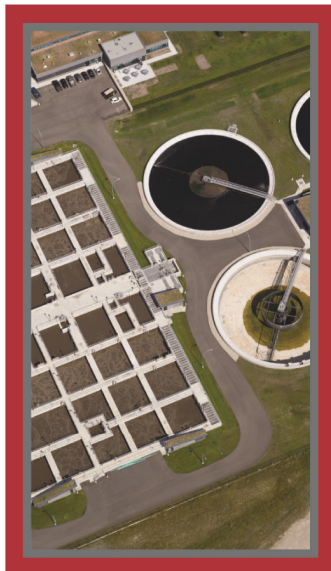
Pssst, been in the business ten years? Or, have a degree and six years of work experience? Sounds like you may qualify for ISA Senior Member grade. Why apply? ISA Senior Member grade is a statement of your knowledge and experience. It's also a requirement for becoming a candidate for ISA Fellow grade or to hold a Society-level office.

Find all the details and an application form at www.isa.org/seniormember or call (919) 549-8411.



**Brag a little. Apply today
for ISA Senior Member grade.**

6112864



However ambitious your requirements, our Intelligent Motor Control provides the drive.

LISTEN.
THINK.
SOLVE.®

For simple speed control to precise torque and position control, Rockwell Automation supports you with application knowledge, industry experience and a complete family of PowerFlex drives from 0.25kW to 25MW, helping you achieve the control you need.

<http://ab.rockwellautomation.com/Motor-Control>



 Allen-Bradley • Rockwell Software

**Rockwell
Automation**

Copyright © 2011 Rockwell Automation, Inc. All Rights Reserved.

TECHNICAL ARTICLE

Improving Reliability of Wireless SCADA Systems

By Joel J. John

For a regional water authority operating 55 water plants that deliver water to municipal water districts, a cost-effective method to collect, control, and report regional operations of these plants was necessary. To improve reliability of control, a Supervisory Control and Data Acquisition (SCADA) system, using a commercial cellular network and the Modbus serial communications protocol, was designed to collect data from each remote water plant at a central operations center as is shown in Figure 1.

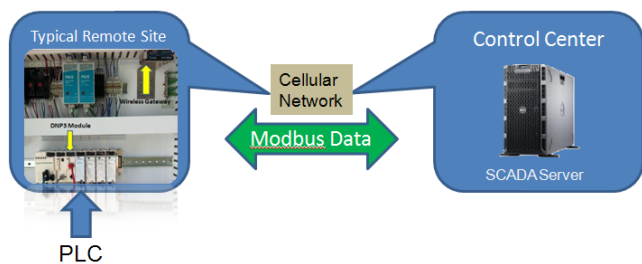


Figure 1 - SCADA System Architecture. Control center communicates via a cellular network to 55 remote water plants.

Cellular networks inherently have periods of intermittent communication losses. During these periods, the Modbus protocol cannot collect data which prevents the SCADA server from collecting flow data that is critical to the authority’s reporting. As a result, the authority’s ability to produce credible monthly reports is compromised and leaves them in need of a solution to reliably collect data across the communication network. As a solution, the use of the Distributed Network Protocol or DNP3 was proposed to improve the reliability of the data communication.

DNP3 was created in 1993 by Westonic as an open, non-proprietary protocol dedicated for SCADA communications between remote outstations and master stations. (Source: www.DNP3.org).

A major benefit of this protocol is that it buffers data on an outstation DNP3 module during a period of communication loss. Only data defined in a user-defined database are buffered onto the DNP3 module. When the network is restored, the data is then transmitted from the remote outstation to the master station. This process is known as backfilling.

Backfilling between outstations and master stations only includes “new” data (known as events), and are transferred through RS-232, RS-485 or Ethernet. An event is created whenever a tag’s value exceeds a configured deadband and takes on a new significant value. For example, a new event would be created for a Boolean tag if it went from on-to-off or

for an analog tag if its current value exceeded a configured deadband.

Events are transmitted to the master station during normal communications via an unsolicited response by the outstation or through a class poll by the master device. Class polling assigns poll times to events and prioritizes them into Class 1, Class 2 or Class 3 groups with Class 1 receiving the highest level of priority (Source:www.DNP3.org). Once transmitted, the event counter in the module is reset to zero.

Users must define data to be backfilled in a user-defined database that is separate from the Programmable Logic Controller (PLC) program and includes the data type for each tag and their DNP3-specified object group variation, which further specifies the data within the group. This database, as well as the DNP3 configuration, resides on the DNP3 module of the outstation device.

Figure 2 displays the communication between an outstation and its master. During normal operation, data is transferred regularly and the DNP3 module’s buffer is continuously reset to zero. However, during periods of communication loss, the events that are generated are buffered on the outstation.

As a DNP3 module can only hold a certain amount of events, it is imperative that users set event deadbands at a reasonable level so that events are not continuously generated. When a DNP3 module reaches its limit, the latest time-stamped events are deleted to accommodate the newest data.

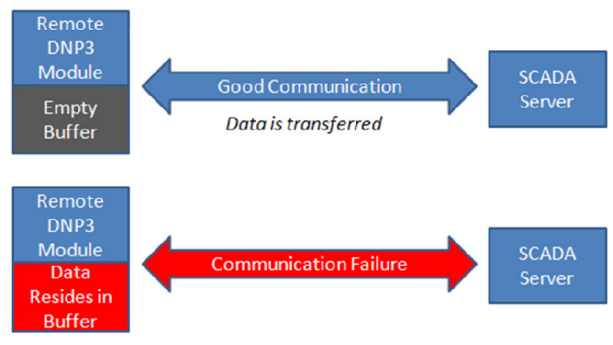


Figure 2-Data resides on the DNP3 module during communications failures but is transferred once communications is restored.

For the water authority, each of their 55 remote sites was equipped with a Schneider Electric M340 PLC and a wireless gateway responsible for linking the site to the cellular network. As part of the hardware system, a DNP3 module was configured with a user-defined database and the remote IP address of the master SCADA server. Each DNP3 module was setup to collect over 65000 analog and over 1000 binary events.

Initially, all data tags were configured to transmit unsolicited data responses. However, due to the costly nature of cellular data service (particularly overage charges), this was modified so that all tags were assigned to the Class 1 group with 15 minute poll times. Fifteen minutes was determined to provide a reasonable level of operational functionality while staying within the limits of the cellular contractual agreement. Increasing the deadband on analog values reduced the monthly cellular data usage as well as decreasing the number of new events created by each remote site. After incorporating these changes, each DNP3 module collected fewer data events and as a result transmitted less data for its 15 minute poll cycle.

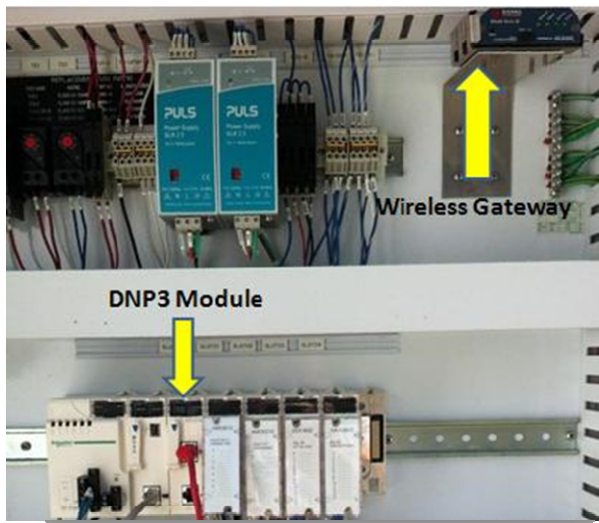


Figure 3-Typical field PLC and DNP 3 module installation. Extra hardware costs to implement this DNP3 application were minimal.

Tuning the deadband value was necessary to ensure all significant process value changes were captured as events. For example, one site's ground storage tank level was configured with a deadband of one foot, which meant the level would have had to increase or decrease by one foot before an event was generated.

Figure 4 displays this scenario and clearly shows that the data did not backfill after any of the three communication losses. The reason for this is because the deadband was set too high preventing new events from being generated. As a corrective measure, the deadband level was decreased to ensure proper event generation and data collection.

Testing the functionality of the DNP3 protocol was done by selecting a site and disconnecting it from the cellular network for a period of one hour. Simulated flow data was forced at the test site and their corresponding time-stamps were recorded. During this testing period, data was not collected as was reflected on SCADA trends. However, when the tests were completed and the network connection was restored, the DNP3 module backfilled the outstation's buffered data with the correct time-stamps into the SCADA server. The SCADA

trend, which had shown nothing for the testing period, now displayed the simulated flow data at the accurate times.

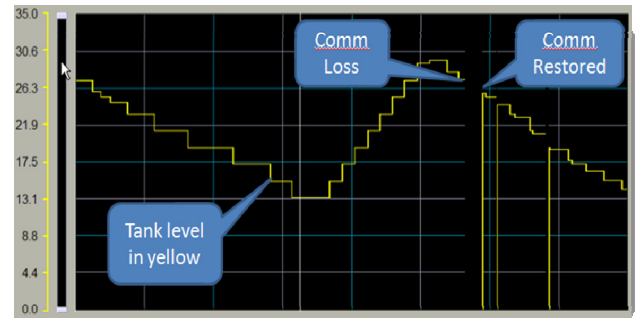


Figure 4-Tuning the DNP3 deadband parameter was necessary to ensure data backfilled during moments of communication failure. Shown on the trend in yellow is the GST level for a site and the gaps in data causes by having the deadband value too high.

Data backfilling and accurate time-stamping have occurred multiple times in the system due to cellular communication failure demonstrating the reliable functioning of the DNP3 configuration. Figure 5 shows a SCADA flow trend for a site that experienced a communication loss for a period of a few hours. The red line represents the Modbus data collection while the green line represents the DNP3 data.

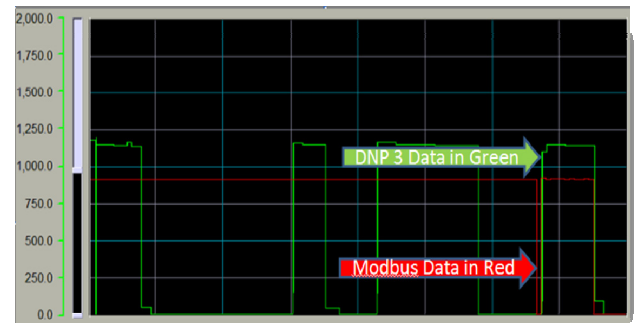


Figure 5-DNP3 vs Modbus. During a period of communication failure, DNP3 backfilled all processes flow data into the SCADA server whereas Modbus only retained the last good value before the network outage.

As is clearly visible, the Modbus trend retained its last good value while the DNP3 backfilled the accurate process values into the system when communication to the site was restored. Backfilling such as this has proven to be invaluable in providing a data backup in times of cellular communication loss or network hardware failures. Without the backfilling of data provided by DNP3, the operational flow report would be incomplete and in certain instances unusable.

To date, event limits have not been exceeded as prolonged communications outages have not been experienced. Furthermore, as the configured deadbands for individual tags

are reasonably set, excessive events are not generated. This has provided increased reliability in the system as event data has not been deleted due to a full buffer.

Cost of implementing the DNP3 protocol for data collection in cellular SCADA system is not significant. A DNP3 module would need to be purchased and configured as previously described. In addition to this, a PLC mapping data table would need to be created but strenuous PLC to DNP3 configuration is not necessary. For the regional water authority, the cost of implementing DNP3 proved its worth as it provided increased data reliability.

Overall, the DNP3 system has performed well and has proven to be extremely reliable in collecting data during network communication failures. Communication losses in the network are not apparent in monthly flow reports as DNP3 backfills the data into the SCADA servers. Through the results gathered on this project, it is clear that the DNP3 protocol provides increased data reliability in the implementation of wireless SCADA systems.

About the Author

Joel John works for CDM Smith as an automation engineer in Houston, TX and has over 7 years of experience in the water and wastewater industry as a PLC and HMI programmer. Along with field programming, Mr. John designs SCADA and control systems for municipal and industrial clients
Contact: JohnJJ@cdmsmith.com

listen. think. deliver.

Water
Environment
Transportation
Energy
Facilities

CDM Smith
cdmsmith.com

Is the world thirsty for water management?

The World Bank estimates that global costs from leaky water pipes total \$14 billion annually. Our water infrastructure, in service for upwards of 100 years in many regions, is under pressure, to say the least.

Worldwide, up to **60%** of water is lost due to leaky pipes—to the tune of **US\$14 billion every year.**

30% of the pipes are between **40 and 80 years old** in water systems that serve **100,000 or more people.**

In the United States alone, an average of **700** water main breaks occur every day—that's **240,000 per year.**

A faucet that drips just once per second wastes **2,700** gallons of water annually.

Water use has been growing at more than **2x** the rate of population increase in the last century.

The total estimated cost to fix U.S. water systems is **\$335 billion** over 20 years.

Global water usage continues to increase at twice the rate of population growth. Clearly, something must be done to better manage our water supply for a sustainable future. To find out how, visit ibm.com/smarterplanet/water

*Environmental Protection Agency
 **United Nations
 †American Society of Civil Engineers
 ‡Environmental Protection Agency

Setting the Standard for Automation™

Are you taking advantage of ISA's free web seminars?

Don't forget—as a Member of ISA, you have free, unlimited access to a library of more than 40 online, pre-recorded web seminars—valued at \$225 each. It's just one of the many benefits you receive as a Member of ISA.

Take advantage of this vast resource of knowledge and keep up-to-date on the latest industry practices, developments, and philosophies. It's one of your FREE benefits as an ISA Member! Visit www.isa.org/webseminars.

ISA PUBLISHING

ISA publishes new book on how to establish and manage industrial control groups, and how to initiate and execute industrial control projects

Our friends at ISA headquarters have published a new reference book that outlines how to establish and manage industrial control groups, and how to initiate and execute industrial control projects.

“The book, [Managing Industrial Controls](#), is designed to fill the void in the marketplace for essential reference information dedicated to managers of industrial control groups,” says the book’s author, Nabil (Bill) E. Battikha, P.E., a widely recognized expert in process instrumentation and control engineering, and president of BergoTech, Inc., a firm specializing in online engineering courses. “Up to this point, there has been very little guidance available to industrial control managers. More often than not, these people have been getting promoted to these positions with no or very limited training.”



Industrial control groups, Battikha explains, exist principally in three business areas: manufacturers of industrial control equipment; organizations that implement control systems in plants (such as engineering consultants); and plants (the end users) that rely on control systems to operate efficiently.

The book is organized into three components:

- A foundational component that includes an overview of industrial control systems, organizational, training and human resources issues; the tools for business development; and the corporate standards that guide implementation and ongoing execution.
- A central component that covers three essential topics: (a) learning how to assess plant needs and a take a quantified approach to decision making; (b) selecting the management tools to justify the budgets needed to implement industrial control systems; and (c) defining what constitutes the active management of industrial control projects, from project definition and scheduling to front-end and detailed engineering.
- The final component encompasses the post-engineering phases, including equipment installation, check out, commissioning, start-up and ongoing maintenance activities. (The last two chapters in this section focus on auditing, a key process that managers need to identify control system implementation problems and to measure compliance with plant needs.)

The book, Battikha emphasizes, is a valuable resource for:

- All managers of industrial control groups, especially those seeking a handy manual that covers the key matters relating to industrial controls from a management perspective
- Professionals working in industrial controls who intend to become industrial controls group managers or supervisors.

For more information or to purchase a copy of this valuable resource, visit www.isa.org/PR13/Books/MIC.

Battikha is the president of BergoTech Inc. During his more than 30 years of experience in process measurement and control, Battikha has worked for suppliers of control equipment, engineering consultants and end users on a diverse range of engineering, management and training projects. He has published three other ISA books: *The Management of Control Systems* (1992), *Developing Guidelines for Instrumentation & Control* (1994), and *The Condensed Handbook of Measurement and Control* (now in its third edition)—a best seller in its first year of publication and a winner of the R.D. Molloy Award in 1998. He also has written numerous technical articles, co-authored a patent and a commercial software package and teaches part time at various universities across North America.

Beginning in October of this year, Battikha will be teaching an online certificate program on managing industrial controls

For more information or to purchase a copy of this valuable resource, visit www.isa.org/books

www.exida.com

excellence in Dependable Automation

ULTRASONIC FLOW METERS

RENTAL & SALES

- ✓ NEXT DAY DELIVERY
- ✓ EASY TO USE
- ✓ FREE TRAINING
- ✓ FREE SUPPORT

Instruments Direct INC.

PH: 1(888)722-5543
WWW.INSTRUMENTSDIRECT.COM

**New WWID Members****Recently joined July 2013 to September 2013****July 2013**

Mr. Andre Thomas Abromaitis - Painesville, OH, USA
Mr. Stu Affleck - Regina, SK, Canada
Mr. Norman R. Ansell, PE - Moorestown, NJ, USA
Federico Guillermo Arango - White Plains, NY, USA
Mohammad Ashrafzadeh - Woodland Hills, CA, USA
Mr. Benjamin P. Auclair, CCST - Louisville, KY, USA
Mr. Thackoor Persad Balliram, CCST - Waterdown, ON, Canada
Mr. Vicente Uvero Baluyot - Pasig, Philippines
Mr. Antuione L. Bargains - Allen, TX, USA
Diego Fernando Bautista Cotte - Bogota, Cundinamarca, Colombia
Ms. Prerna Bhatnagar - Hicksville, NY, India
Mr. Mark-Anthony Biro - Ottawa, ON, Canada
Mr. Ronald M. Bough - Billings, MT, USA
Mr. Arthur W. Bradshaw - Bridgeport, CT, USA
Mr. Gene Brownlow - Dallas, TX, USA
Mr. Eric Bunke - Milwaukee, WI, USA
Mr. Clinton B. Camper - Billings, MT, USA
Mr. Steven V. Cates - Rancho Santa Margarita, CA, USA
Mr. Ed Cellucci - Riverside, CA, USA
Mr. Adnen Chaabane - Salinas, CA, USA
Mr. Michael Chiasson, ISA84 SFS - Baton Rouge, LA, USA
Mr. Charles C. Chung - Walnut Creek, CA, USA
Mr. Donald D. Cloud - Simi Valley, CA, USA
Mr. Anthony Bruce Corso - Cincinnati, OH, USA
Mr. Alan Couch - Kitchener, ON, Canada
Claude Cyr - Coteau Du Lac, QC, Canada
Mr. Timothy D'Apice - Goffstown, NH, USA
Mr. Alvin M. Derr - Matthews, NC, USA
Bob Devereaux - Alexandria, VA, USA
David M. Dinsmore - Laurel, MD, USA
Mr. David Dlugos - Stratford, CT, USA
Ms. Shirlane C. Dudash - Denver, CO, USA
Mr. Jim T. Espinosa - Colorado Springs, CO, USA
Mr. Joshua J. Ezak - Amherst, NY, USA
Mr. Henrique Campos Fernandes - Belo Horizonte, 0, Brazil
Mr. Robert C. Frazee, CCST - Franklin, OH, USA
Mr. Natale Francis Gallo, P.Eng - Newmarket, ON, Canada
Mr. Tom T. Garry - Humble, TX, USA
Mr. Brad S. Gradwell - Brisbane Queensland, 0, Australia
Mr. Johnny Gutierrez - Tyler, TX, USA
Mr. Scott D. Guzlecki - Milwaukee, WI, USA
Mr. Richard F. Halloran, Jr. - Medway, MA, USA
Christopher P. Henning, CCST - Atlanta, GA, USA
Mr. Thomas B. Hewitt - Clarkston, GA, USA
Mr. Edward Heyob - Dublin, OH, USA
Greg Horn - York, PA, USA
Larry Housden - Alexandria, VA, USA
Mr. John A. Hudec, CCST - La Grange, TX, USA
Jacob R. Irvin, CCST - Cumming, GA, USA
Richard P. Johanning - San Antonio, TX, USA
Mr. Phil Johnson - Calgary, AB, Canada
Mr. John G. Johnston, Jr. - Columbus, OH,
Mr. Thomas Z. Jreige - Deakin West, ACT, Australia
Mr. Goodwin Kaisara - Gaborone, 0, Botswana
Mr. Michael Karpa - Hellertown, PA, USA
Mr. Gerald F. Kessler - Lancaster, NY, USA
Mr. Larry W. Kiel - Oviedo, FL, USA
Mr. Andrew L. Klopp - Moon Township, PA, USA
Leslie Klug - Middleburg Heights, OH, USA
Mr. Russell H. Kraiterman - Sharon, MA,
Mr. Nanda Kumar - Dubai, United Arab Emirates
Mr. Thomas M. Kurata, P.E. - Lawrence, KS, USA
Mr. Ben Lamar - Birmingham, AL, USA
Steve Lee - Alexandria, VA, USA
Mr. Robert J. Liscinsky, CCST III - Shelton, CT, USA
Mr. Sreekanth Sreenivasan Madhavasherry - Bangalore, Karnataka, India
Mr. Cedric Madison - Batavia, IL,
Mr. Brian Lee Mast - Seattle, WA, USA
Mr. Ronald L. Matuszek - Simi Valley, CA, USA
Mr. Matt McElroy - Laurel, MD, USA
Mr. Shawn T. McIntyre - Hayward, CA, USA
Mr. Larry Mclean - Vaughan, ON, Canada
Mr. Charles A. Mertes, CAP - Indianapolis, IN, USA

Mr. Benjamin Gilles Metman - Caringbah, AP, Australia
Mr. Arnold J. Moser - Ventura, CA, USA
Mr. Jonathan M. Mungcal, CCST - San Luis Obispo, CA, USA
Mr. Ryan Craig Paul Nabozniak - Calgary, AB, Canada
Mr. Diep Nguyen, CSE, DGCP, EE, FPE, PE - Fremont, CA, USA
Mr. Ron Novak - Laguna Niguel, CA, USA
Mr. Charles S. Nuzzo - Cape Coral, FL, USA
Mr. John Olson - Milwaukee, WI, USA
Mr. Cornelius O'Regan, PE - Bayville, NJ, USA
Joel Ortiz - Wellington, FL, USA
Mr. Daniel Oshaben - Rancho Cucamonga, CA, USA
Mr. William Overbeek - Longwood, FL, USA
Mr. Shailesh Mojubhai Parmar - Mississauga, ON, Canada
Mr. Carlos Mario Pimienta Bolivar - Bogota DC, Cundinamarca, Colombia
Mr. Jesse M. Powers, III, CCST - Vanceboro, NC, USA
Mr. Brian L. Pozwick - Cleveland, OH, USA
Mr. Juan Ramirez - Santa Ana, CA, USA
Mr. Dennis Rentschler - North Chelmsford, MA, USA
Mr. Tom Roberts - Encinitas, CA, USA
Mr. Chris Roy - Winston Salem, NC, USA
Mr. Jeffery Sears - Slough, Great Britain
Mr. Pavol Segedy - Willow Spring, NC, USA
Mr. John Shen - Acton, MA, USA
Mr. Rusty Sietsema - Holland, MI, USA
Mr. Jeremiah D. Smith - Phoenix, AZ, USA
Mr. Larry Wayne Thompson, II - Houston, TX, USA
Mr. Joe S. Trass - Wood Dale, IL, USA
Mr. John S. Trofatter - West Wareham, MA, USA
Mr. Rick Walkemeyer, CAP - Placentia, CA, USA
Mr. Leigh Weber - Harleysville, PA, USA
Oliver Welsh - Alexandria, VA, USA
Mr. Jamie Whitcomb - Round Rock, TX, USA
Mr. Timothy Gene Wiley - Orlando, FL, USA
Mr. Kevin Lee Willis - Buda, TX, USA
Dr. Sunao Yamashita - Shinjoko Tokyo, , Japan
Mr. Gary Allen Yocum - Cocoa, FL, USA

August 2013

Mr. Vijay Acharya - Peterborough, ON, Canada
Mr. SAIF Y. Bualrougha ALZAABI - Abu Dhabi, 0, United Arab Emirates
Mr. Charles E. Amann - Marine On Saint Croix, MN, USA
Mr. Michael W. Anderson - Corona, CA, USA
Ms. Mohana Sundari Arumugam - Katpadi, 0, India
EMMETT ASHFORD - Southfield, MI, USA
Raymundo Atianzar - Westchester, CA, USA
Mr. Craig Hedgepeth Balkin - Northglenn, CO, USA
Mr. Rajiv Bhala - Phillipsburg, NJ, USA
Mr. Luiz Carlos Bircak - Sao Paulo, SP, Brazil
Mr. David Blanchard - Norfolk, VA, USA
Mr. Jeffery S. Blue, CAP - Henderson, NV, USA
Mr. Vincent J. Brashear, PE - Folsom, CA, USA
Mr. Steve E. Brice - Stafford, TX, USA
Ms. Rebecca Buhner - Baltimore, MD, USA
Mr. Orlando Camarillo - Houston, TX, USA
Sebastian Cardenas - Bogota, Colombia
Mr. John Devin Carroll, PE - Raleigh, NC, USA
Tomasz Ciosek - Mississauga, ON, Canada
Mr. Patrick A. Collins - Hudson, WI, USA
Ms. Raluca F. Constantinescu - Los Angeles, CA, USA
Mr. Charles P. Cuyulis - Closter, NJ, USA
Mr. Paul Dalia - Farmingdale, NY, USA
Ms. Beverly J. DeLege - Elmira, CA, USA
Charles Dias, II - Blasdel, NY, USA
Mr. Ken Donahue - Virginia Beach, VA, USA
Mr. Darin Drisner - Edmonton, AB, Canada
Ashraf Mohamed Mahmoud Eid - Cairo, 0, Egypt
Mr. Chris Fehser - La Crescenta, CA, USA
José Rigoberto Flores Ábrego - Antiguo Cuscatlán, 0, El Salvador
Mr. Kenneth Frische - Lakesite, TN, USA
Robert Fugiel - Oakbrook Terrace, IL, USA
Mr. Paul J. Gauche - Detroit, MI, USA
Mr. Michael L. Gore - Sanford, FL,
Mr. Oskar A. Granquist - Carlsbad, CA, USA
Mr. Steve M. Hanlon - Ballwin, MO, USA
Brandon Hansen - Castle Rock, CO, USA
Mr. Max L. Hanson, P.E. - Olga, WA, USA
Ms. Amy Huynh - Calgary, AB, Canada
Mr. Azmat Elahi Janjua - Kaarachi, Pakistan



Mr. David M. Jones - Columbus, OH, USA
Mr. Roger Knuteson - Saint Paul, MN, USA
Mr. Christos Kyrou - Fort Wayne, IN, USA
Mr. David L. Labonte - Walpole, MA, USA
Marcel Laes - Liefdaal, Belgium
Mr. Frank J. Langro - Port Washington, NY, USA
Mr. Albert W. Libke, PE - Royalton, MN, USA
Mr. David A. Lunden - Ellicott City, MD, USA
Joanne MacDougall - Houston, TX, USA
Mr. Evangelos Manoloulis - Winthrop, MA, USA
Mr. Mike A. Marandi - Lincoln, CA, USA
Jonny Marin Perez - Bogota, Colombia
Mr. John P. McClanahan, CCST - Georgetown, TX, USA
Mr. Troy McDonald - Grand Rapids, MI, USA
Mr. John McKenzie - Edmonton, AB, Canada
Mr. Nathaniel Brady Melchior - Olympia, WA, USA
Mr. E. Charles Meyers, Jr. - Spokane, WA, USA
Dr. Alexander G. Mikulin - Walnut Creek, CA, USA
Mr. Greg Michael Miller - Pensacola, FL, USA
Randall Minnis - Denton, TX, USA
Mr. Riaz K. Moinuddin, PE - Fountain Valley, CA, USA
Mr. Scott M. Molinari - Azusa, CA
Mr. Carlos Morais, CCST - Thornhill, ON, Canada
Mr. James H. Mulligan, Jr., PE - Centennial, CO, USA
Mr. Bracy Nesbit - Austin, TX, USA
Mr. Dustin M. Oswald - Henderson, NV, USA
Mr. Chad Paxson - Marietta, GA, USA
Sudhir Hindurao Pisal, CCST - Irvine, CA, USA
Mr. Joe Quinn - Horsham, Great Britain
Mr. Steve G. Rabinowitz - Concord, CA, USA
Eddy Ritter Ramirez Bustos, Sr. - Esmeraldas, O, Ecuador
Jose I. Ramirez Giraldo - Medellin Antioquia, O, Colombia
Mr. Vijay Rengaraju - Elk Grove, CA, USA
Mr. Walter Richters - Petersburg, VA, USA
Mr. James L. Robinson - Florence, KY, USA
Mr. Paul S. Roth, CCST - Hudsonville, MI, USA
Craig Scheibel - Acworth, GA, USA
Mr. Colin J. Schmidt - Boise, ID, USA
Michael Schuhen - Carlsbad, NM, USA
Mr. Tushar K. Shah - Hurricane, WV, USA
Mr. Dave Shook - Edmonton, AB, Canada
Mr. Robert J. Shull, CCST - Raleigh, NC, USA
Mr. Perry Skaug - Salt Lake City, UT, USA
James Slone - Addison, IL, USA
Mr. Kenneth Smith - Wichita, KS, USA
Vijayan Srinivasan - Chennai, TAMILNADU, India
Michail P. Stavrianakos - Athens, Attiki, Greece
Mr. Trevor Steffler - Shelley, ID, USA
Mr. Roger Aston Teague, III - Houston, TX, USA
Diego Elian Thomas Uribe - Medellin Antioquia, O, Colombia
Jeffrey Tilleman - San Tan Valley, AZ, USA
Mary To - Edmonton, AB, Canada
Mr. Varun Toshniwal - Liverpool, NY, USA
Mr. Oscar B. Tromp - Marietta, GA, USA
Mr. Fred W. Utick - Gastonia, NC, USA
Mr. Frederic Wenzel - Katy, TX, USA
Mr. Jason Whitesock - Grand Forks, ND, USA
Mr. Bruce P. Winfield, CCST - Venice, FL, USA
Mr. Daniel T. Wolford, CCST - Dundee, IL, USA
Mr. Albert Wong - San Jose, CA, USA
Ms. Jane S. Yu - Laurel, MD, USA
Mr. John D. Thomas - Morton Grove, IL, USA

September 2013

Mr. Michael A. Abbott, CCST - Gulf Breeze, FL, USA
Mr. Ali Ahmed Alyami - Dhahran, Saudi Arabia
Mr. Brian Anderson - Houston, TX, USA
Mr. Steve Biela, PE, CAP, CCST III - Monroe, MI, USA
Mr. Donald Brent Block - St Albert, AB, Canada
Mr. James P. Bohan - San Jose, CA, USA
Mr. Ed C. Budde - Saint Michael, MN, USA
Mr. Danny L. Burns - The Woodlands, TX, USA
Mr. Christopher Caglioti, CCST - North Fort Myers, FL, USA
Leonard Campolietta - Syracuse, NY, USA
Bing-Song Ben Chen - Cupertino, CA, USA
Mr. Larry Clement - Marietta, GA, USA
Mr. Kenneth Convertito - Westport, CT, USA
Willis Costello - Dublin, CA, USA

Mr. Dominic A. DeBaggis - Petaluma, CA, USA
Mr. Jamshid Dorafsha - Walnut Creek, CA, USA
Mr. Ronnie Dryburgh - Trois Rivieres, QC, Canada
Mr. Michael B. Fedenyszen - Boston, MA, USA
Jose Manuel Fernandez Mas, Sr. - S S De Los Reyes / Madrid, O, Spain
Mr. Emilio Fernandez Toran - Madrid, Spain
Mr. Aldo Ferrante - Ponte Vedra Beach, FL, USA
Mr. Albert B. Fischbein - West Chester, PA, USA
Mr. Anthony L. Franey - Bakersfield, CA, USA
Mr. Patrick Keith Godbey - Greenville, NC, USA
Mr. Berton F. Herr - McAllen, TX, USA
Mr. Charles E. Hessler - Naperville, IL
Mr. Raymond E. Heullitt - Wayne, NJ, USA
Mr. Leo D. Hogue - Calgary, AB, Canada
Mr. Thomas M. House - York, PA, USA
Mr. Wayne C. Hunte, CCST - Orlando, FL, USA
Mr. Anup Jain - Toronto, Canada
Joel John - Pasadena, TX, USA
Mr. Akhil Kumar Kala - Bangkok, Thailand
Mr. Parm Kler - Vernon, BC, Canada
Mr. Steven A. Lacey - Chino, CA, USA
Mr. Riley Findlay Locke - Edmonton, AB, Canada
Mr. Michael J. Loehr - Decatur, IL, USA
Mr. Jose Otavio Mattiazzo - Curitiba, PR, Brazil
Mr. James McGlone - Richmond, VA, USA
Mr. Murray McKay - Memphis, TN, USA
Mr. Shawn Eric Montano, CCST - Denver, CO, USA
Mr. Chad A. Morris, CCST - Sachse, TX, USA
Mr. Chris Muller - Doraville, GA, USA
Mr. Steve Mustard, BEng, CEng, FIET, CAP - Spring, TX, USA
Mr. John Nel - Phoenix, AZ, USA
Mr. Russell E. Norton, CAP - Reno, NV, USA
Mr. Robert J. Osnoe - East Haddam, CT, USA
Mr. Martin Ouellet - St-henri, QC, Canada
Mr. Ciprian Panfilie - Mississauga, ON, Canada
Erin Gordon Parker - Baton Rouge, LA, USA
Mr. Randy Ream - Birdsboro, PA, USA
Mr. Aldo J G Rosa - Sao Paulo, SP, Brazil
Mr. Kenneth C. Roslan - Bakersfield, CA, USA
Steve Siddens - Lake Villa, IL, USA
Mr. Don G. Sorensen - Loveland, CO, USA
Mr. Ruben Sosa - City of Industry, CA, USA
Mr. Larry R. Spink, CCST - Perrysburg, OH, USA
Mr. Garry K. Stanhope - Moose Jaw, SK, Canada
Mr. William Sumpter - Tulsa, OK, USA
Mr. Dean A. Taylor - Appleton, WI, USA
Dr. Itoh Toshiaki - Kyoto City, Japan
Mr. David Joseph Tress - Las Vegas, NV, USA
Mr. Steven A. Tripmacker - Muscatine, IA, USA
Mr. Gerry B. Ward - Hamilton, ON, Canada
Mr. David Robert Wilcoxson - Walnut Creek, CA, USA
Mr. Shannon Scott Wise, CCST - Akron, OH, USA
Mr. Jalal Bouhdada - Amsterdam, AE, Netherlands
Dr. Edgar Chacon - Mérida, ME, Venezuela
Darrell E. Miller, CCST - Elma, WA, USA
Mr. Trishin Naidu - Mississauga, ON, Canada
Mr. Ivan R. Radovic - Doha, Qatar
Mr. James P. Ryan - Saint Clair Shores, MI, USA



WWID is on LinkedIn

LinkedIn is a social media site that is geared towards professionals and business people. Located at www.Linkedin.com, the site features online profiles, discussion groups and tools for identifying and keeping track of contacts. As of January 2013, LinkedIn has over 200 million members in more than 200 countries and territories.

In an effort to provide the latest news and information relating to instrumentation and control systems in water and wastewater management, the Water and Wastewater Industry Division has created a LinkedIn group. We invite anyone affiliated with or interested in the water and/or wastewater industries to join the group and participate in the dialog.

You may use the following link to join the group <http://www.linkedin.com/groupRegistration?gid=2031271>



About LinkedIn

LinkedIn is an interconnected network of over 200 million experienced professionals from around the world, representing 250+ industries and 200 countries. You can find, be introduced to, and collaborate with qualified professionals that you need to work with to accomplish your goals.

When you join, you create a profile that summarizes your background and professional accomplishments. Your profile helps you find and be found by former colleagues, clients, and partners. You can add more connections by inviting trusted contacts to join LinkedIn and connect to you.

Your network consists of your connections, your connections' connections, and the people they know, linking you to thousands of qualified professionals.

There are already many ISA members and automation professionals on LinkedIn, as well as several other ISA-related groups. If you'd like to learn more about LinkedIn, the article "100+ Ways to Use LinkedIn" at the website www.linkedinintelligence.com/smart-ways-to-use-linkedin/ provides many different perspectives on how the site can be leveraged. We hope you'll join us there and network with other ISA, water, and wastewater professionals.

Yokogawa Wireless, Go Further

Yokogawa Wireless Features

- Total Wireless Solution
- Huge Coverage Area
- Variety of Interfaces
- Low Cost, Field Replaceable batteries

The diagram illustrates a multi-tier network architecture. At the top, a **Control System** (including SMARTDAG+ and ISA100 Gateways) is connected to a **Field Backbone Network (Ethernet)**. This backbone network is linked to various **Flexible Interface** options: **2-wire Instrumentation Cable IF**, **Optical IF**, and **ISA100.11a Interface**. The ISA100.11a interface connects to **ISA100 Access Point** units. These access points form a **4 hop, 3km/hop ISA100 wireless networks**. The network also includes **Wireless LAN** and **Media Converter** components. On the left, a **Total Wireless Solution** is shown, encompassing **Wi-Fi AP**, **Cellular Phone**, **Mobile HIS**, and **Camera**. A **Control System** is also shown with **500 Devices** and **1 sec Switching** capabilities. The bottom of the diagram features logos for **vigilantplant**, **ISA100Wireless**, and **YOKOGAWA**.

* Interoperable with other party based on WCI

Call for Newsletter Articles

The WWID newsletter is published four times a year (winter, spring, summer, fall) and reaches the WWID's over 1,600 members. Each issue is approximately 32-44 pages long, and is electronically printed in color PDF format. A notification email goes out to all WWID members and it is available for public download at www.isa.org/wwid/.

We are always on the lookout for good articles, and we welcome both solicited and unsolicited submissions.

Article submissions should be 500-2000 words in length and be written for a general audience. While it is understood that the articles are technical in nature, the use of technical jargon and/or unexplained acronyms should be avoided. We actively encourage authors to include several photos and/or figures to go along with their article.

We actively welcome articles from all of our members. However, we do ask that articles be non-commercial in nature wherever possible. One or two mentions of company and/or product names for the purposes of identification is acceptable, but the focus of the article should be technical content and not just sales literature. If you are unsure of whether your article idea is workable, please contact our newsletter editor for more information – we are here to help.

Some examples of the types of articles we are looking for include:

- Explanatory/teaching articles that are meant to introduce or explain a technical aspect of automation and/or instrumentation in the water/wastewater sector.
- Biographical stories about personalities and/or leaders in the water/wastewater sector.
- Case Studies about plant upgrades and/or the application of new technologies and techniques. This type of article must include at least two photos along with the article text.
- Pictorial Case Studies about a plant upgrade consisting of 4-6 photos plus a brief 200-500 word description of the project undertaken. The article should ideally include one to two paragraphs about lessons learned and/or advice for other automation professionals.
- Historical reflections on changes in technology pertaining to specific aspects of instrumentation or automation, and how these changes point to the future.
- Discussions about changes in the water/wastewater sector and how these affect the automation professionals.

Once we receive a submission, we will work with you to edit it so it is suitable for publication in the newsletter.

Article submissions can be sent to the WWID newsletter editor Graham Nasby at graham.nasby@eramosa.com.

WWID Newsletter Advertising

The WWID newsletter is an excellent way to announce new products and services to the water/wastewater automation community. With a distribution of 2,000+ professionals in the automation, instrumentation and SCADA fields, the WWID newsletter is an effective targeted advertising tool.

The WWID newsletter is published quarterly, on the following approximate publication schedule:

- Winter Issue – published in January/February
- Spring Issue – published in May/June
- Summer Issue – published in August/September
- Fall Issue – published in October/November

Advertising in the newsletter is offered in full page and quarter page formats. Advertisements can be purchased on a per issue basis or for four issues at a time. The newsletter itself is distributed as a full-color PDF, so both color and black/white artwork is acceptable.

The current advertising rates are as follows:

Per Issue:

- Full page, full color (7" x 9"): \$400
- Half page, full color (7"x4.5" or 3.5"x9"): \$200
- Quarter page, full color (3.5" W x 4.5" H): \$100

Per year (4 issues):

- Full page, full color, 4 issues (40% discount): \$1200
- Half page, full color, 4 issues (25% discount): \$600
- Quarter page, full color, 4 issues (25% discount): \$300

Other sizes of advertisements are available, but are priced on an individual basis. Contact us for more information.

Please book advertising space as early as possible before the intended publication date. Artwork for advertisements should be submitted a minimum of two weeks prior to the publication date; earlier is always better than later. Artwork for advertisements can be submitted in EPS, PDF, PNG, JPG or GIF formats. EPS, PDF and PNG formats are preferred. Images should be at least 300dpi resolution if possible.

The ISA Water/Wastewater Industry Division is run on a non-profit basis for the benefit of its members. Monies raised from the sale of advertising in the newsletter are used to help offset the cost of division programming and events. Like its parent organization, the ISA, the WWID is a non-profit member-driven organization.

For more information, or to discuss other advertisement sizes not outlined above, please contact the WWID newsletter editor Graham Nasby at graham.nasby@eramosa.com.



WWID Board Member Contacts

Director

& Newsletter Editor

Graham Nasby, P.Eng., PMP
Eramosa Engineering Inc.
Tel: (519) 763-7774
Fax: (519) 763-7757
graham.nasby@eramosa.com

Director-Elect & 2014 Symposium Chair & Asst. Newsletter Editor

Kevin Patel, PE, MBA
Signature Automation
Tel (469) 619-1241
knpatel@sig-auto.com

Secretary Treasurer

David Wilcoxson, PE
MWH Global
Tel: (925) 627-4561
david.r.wilcoxson@mwhglobal.com

Past-Director & Honors/Awards Chair

Jon DiPietro
Bridge-Soft LLC & Domesticating IT
Tel: (603) 606-5937
jon.dipietro@gmail.com

Membership Chair

Pavol Segedy
Brown and Caldwell
Tel: (919) 424-1443
psegedy@brwnccald.com

Membership Asst. Chair

Juliana Oyeniyi
CDM Smith
Tel: (214) 346-2821
oveniyijo@cdmsmith.com

Program Chair

Joe Provenzano, MSc.
KPRO Engineering Services
Tel: (203) 775-0903
Fax: (203) 560-1816
provenzano2@comcast.net

Program Committee

Josh Gelman, PE
CDM Smith
Tel: 703-485-6500
gelmanjl@cdmsmith.com

Program Committee

David Hobart, P.Eng, CAP
Hobart Automation Engineering
Tel (802) 253-4634
dgh@sterlingvalley.com

WEF Liaison

Tom DeLaura, PE
Eramosa Engineering International
Tel (919) 610-3559
tom.delaura@eramosa.com

Social Media Coordinator

Bosco "Bob" Loncar
Waster/Wastewater Services, Halton Region
bob.loncar@halton.ca

Student Scholarships Chair

Michael Fedenyszen
Vanderweil Engineers LLP (Power Group)
Tel: (617) 956-4573
mfedenyszen@vanderweil.com

Student Scholarship Committee Members

Sean McMillan, CDM Smith, mcmillanse@cdm.com
Steve Valdez, General Electric, svaldez1210@gmail.com
Kevin Patel, Signature Automation, knpatel@sig-auto.com
Wally Ingham, Stantec Consulting, swingham@shaw.ca
Thomas C. McAviney, I&C Engineering, incengrg@centrylink.net

ISA Staff Contact

Rodney Jones
ISA Headquarters, Research Triangle Park, North Carolina
Tel: (919) 549-8411
Fax: (919) 549-8288
rjones@isa.org

2014 Symposium Details

Date: August 5-7, 2014
Location: Orlando, Florida, USA
Venue: Crowne Plaza Orlando-Universal Hotel
General Symposium Chair: Kevin Patel, PE, MBA
Website: www.isawwsymposium.com

2015 Symposium Date – Save the Date

Date: August 4-6, 2015
Location: Orlando, Florida, USA
Venue: to be announced
General Symposium Chair: Kevin Patel, PE, MBA

About the ISA Water/Wastewater Division

The ISA Water and Wastewater Industry Division (WWID) is concerned with all aspects of instrumentation and automated-control related to commercial and public systems associated with water and wastewater management. Membership in the WWID provides the latest news and information relating to instrumentation and control systems in water and wastewater management, including water processing and distribution, as well as wastewater collection and treatment. The division holds the annual ISA Water/Wastewater and Automatic Controls Symposium each summer, which features presentations by industry practitioners and published proceedings. For more information see www.isa.org/wwid/

About the ISA

Founded in 1945, the International Society of Automation is a leading, global, nonprofit organization that is setting the standard for automation by helping over 30,000 worldwide members and other professionals solve difficult technical problems, while enhancing their leadership and personal career capabilities. Based in Research Triangle Park, North Carolina, ISA develops standards; certifies industry professionals; provides education and training; publishes books and technical articles; and hosts conferences and exhibitions for automation professionals. For more information see www.isa.org