



## Calendar of WWID Events

June 11-13, 2016 **ISA Spring Leaders Meeting**  
Raleigh, North Carolina, USA

Aug 2-4, 2016 **2016 ISA Water/Wastewater and Automatic Controls Symposium**  
Wyndham Lake Buena Vista Resort  
Orlando, Florida, USA

Sept 24-27, 2016 **ISA Fall Leaders Meeting & 54<sup>th</sup> ISA Honors & Awards Gala**  
Newport Beach, California, USA

### In this Issue

- 1..... Newsletter Editor's Welcome
- 1..... Director's Welcome
- 2..... Message from your Director-Elect
- 2..... ISA Water/Wastewater Calendar of Events
- 3..... Save the date for WWAC 2016
- 5..... Symposium Planning & Technical Program Update

### 2016 Symposium Preview

- 6..... About the Symposium Hotel
- 5..... Symposium Program Overview
- 7..... Registration & Exhibitor Information
- 8..... **2016 Call for Abstracts – Last Call!**
  
- 10..... ISA WWID was at WEFTEC 2015 – Trip Report
- 11..... Technical Article – Density Meters in Wastewater Treatment
- 14..... ISA Releases New Book on Applying Foundation Fieldbus
- 15..... A Primer on ISA's Strategic Goals
- 16..... ISA's welcomes its 2016 Society President
- 17..... A word from our ISA Society President Jim Keeveney
- 22..... WWID Contacts

PLUS: 2016 ISA WWAC Symposium – Conference Preview Brochure

# Newsletter Winter 2016

## Newsletter Editor's Welcome



Welcome to the Winter 2016 issue of our division newsletter!

I am pleased to write to you from the desk of newsletter editor, a position I first moved into back in 2010. At the time, I was new to the division and just starting on my volunteer journey. From initially helping with marketing the division, then as Director-elect, and then finally as Director it has been a pleasure to watch our division grow and evolve over time. Serving as director of our division has been a unique pleasure, and I have made many friends in the process. Now that my term as Director is complete, I look forward to again spearheading our division newsletter during the course of the coming years.

Please join me in welcoming Kevin Patel as our incoming Director and Pavol Segedy as our incoming General Symposium Chair.

In this issue you will read about our upcoming 2016 ISA Water/Wastewater and Automatic Controls Symposium. Thinking of submitting an abstract to present? There is still time, but do so quickly. The program committee is already hard at work assembling this year's program.

Our division was busy this past fall. You will read about the technical session we held at WEFTEC 2015 in Chicago, and also about us going to the 2015 ISA Fall Leaders Meeting. Lastly, in this newsletter you will also find a welcome message from our incoming 2016 ISA Society President Jim Keaveney.

**Graham Nasby**  
WWID Newsletter Editor  
graham.nasby@guelph.ca

## Director's Welcome



Welcome to a new year with the Water/Wastewater Industry Division. I am extremely pleased to have jumped into the role of the Division Director while passing the Director-Elect and Water/Wastewater and Automatic Controls (WWAC) Symposium duties to Pavol Segedy. I want to thank our outgoing Director, Graham Nasby, for all he has done to improve the division and put our division on the map within the ISA organization. Under his direction our division has proudly taken home division of the year awards and several leader awards within the organization. It's great to have an extremely talented and dedicated leadership team involved to make the division successful.

As we move forward and look to the future, we continue to brainstorm ideas and concepts that will provide the most benefit to our members while keeping everyone informed of the latest trends and technologies in our industry. One of the highlights of each year is the extremely popular WWAC symposium held during the first week of August. Each year we attract brilliant minds within the water/wastewater automation industry to share ideas, products, and trends that help every member advance in their career.

For the next two years, we will be planning more webinars, improving the successful symposium, ensuring our members take advantage of the college scholarship opportunities, and continuing our support network within our division, because let's face it, it truly is a small world and it never hurts to get to know the others that are working in the same industry you are. Onward and upward!

**Kevin Patel**  
WWID Director 2016-2017  
knpatel@sig-auto.com

## Message from your Director-Elect



It is my honor to provide this first message as the director-elect in our ISA Water / Wastewater Industry Division Newsletter.

As the New Year has begun, many of us may have new personal goals in place. I am hoping that we are staying motivated and remaining focused on our goals. One of my personal goals is to be an active ISA member and help lead a successful 2016 ISA Water and Wastewater Symposium. Both Graham Nasby and Kevin Patel did an excellent job over the past several years. I want to thank them for their hard work and leadership in ISA and in our division. The success from this event is only as good as the team they helped put together. I will continue to lean on our well assembled group of volunteers that help frame the program and ensure that all the activities planned during the week are beneficial for our members.

It has been 6 months since our 2015 ISA WWAC Symposium which took place in Orlando, Florida. We have received a lot of great feedback about our new facility and technical program. We are hoping to continue where we left off last year and are working on some new ideas including a mobile app for the symposium. I would encourage all of the Water and Wastewater Industry members to stay up-to-date on the symposium happenings on our website at [www.isawwsymposium.com](http://www.isawwsymposium.com).

Please read this newsletter about our upcoming 2016 WWAC Symposium scheduled for August 2 – 4, 2016 in Orlando, Florida. This symposium is a great place to meet new professionals in our industry and share knowledge among each other that will help us all become better in our careers.

We all can recognize tremendous benefits in employing automation at water and wastewater facilities. If we are not seeking to automate our facilities to the maximum, we will be doing the public a disservice by not fully optimizing plant performance. However, new technology can also be a two-edged sword. These days it is too easy to rely on technology and not be fully prepared when it fails us. We also need to think about properly securing and deploying new technology in plants that follows industry standards like the Industrial Automation and Control Systems Security known as ISA 99 (IEC 642443) and Human-Machine Interfaces known as ISA 101 standards.

As a final note, I would like to say that our sector is continuously growing and automation is playing a big role in our industry. It is great to be a part of the industry that slowly but surely adapts to these new demands. As part of the symposium we plan to look at how to provide “High Performance Automation for Operations and Maintenance.” See you there!

**Pavol Segedy, PE**  
WWID Director-Elect  
[psegedy@nc.rr.com](mailto:psegedy@nc.rr.com)

## Upcoming Events

Here are some upcoming events for the Water/Wastewater Automation Professional:

ACE 2016 – American Water Works Association (AWWA)  
June 19-22, 2016  
Chicago, Illinois, USA  
Venue: McCormick Center

**ISA WWAC Symposium 2016**  
**August 2-4, 2016**  
**Orlando, Florida, USA**  
**Venue/Hotel: Wyndham Lake Buena Vista Resort**

WEFTEC 2016 – Water Environment Federation (WEF)  
Sept 26-28, 2016  
New Orleans, Louisiana, USA  
Venue: New Orleans Morial Convention Center

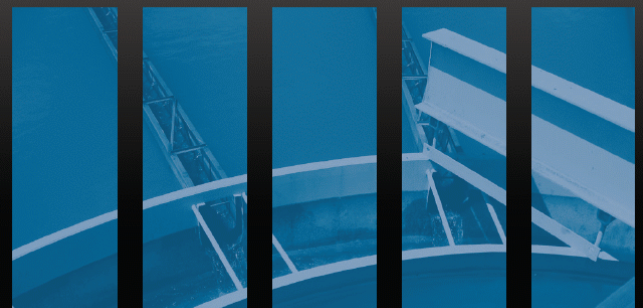
ISA WWAC Symposium 2017  
August 8-10, 2017  
Orlando, Florida, USA  
Venue/Hotel: to be announced

ISA WWAC Symposium 2018  
August 7-9, 2018  
Orlando, Florida, USA  
Venue/Hotel: to be announced



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# SAVE THE DATE

## August 2-4, 2016

### 2016 ISA Water/Wastewater and Automatic Controls Symposium



August 2 to 4, 2016 • Wyndham Lake Buena Vista Resort • Orlando, Florida, USA  
Presented by the ISA Water/Wastewater Industries Division – [www.isawwsymposium.com](http://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

#### 2016 TECHNICAL PROGRAM

The 2016 symposium has a special focus on how automation will be involved and integrated into many of our day-to-day activities. The two day technical program will include a keynote address, a special welcome from the director of the ISA water/wastewater division, and an invited speaker. Guest speakers from the AWWA and WEF will also speak about the current advances in using instrumentation and SCADA in their sectors.

Interested in speaking at next year's symposium? Authors can present a 30-minute talk, 6-12 page paper, or a large format poster. The Call for Abstracts is now available at [www.isawwsymposium.com/call-for-abstracts/](http://www.isawwsymposium.com/call-for-abstracts/). Abstract submissions (250 words) are due December 15, 2015. See the website for the full author kit, including the abstract submission template and paper topic ideas.

#### 2016 REGISTRATION FEES:

Regular Rate .....	\$425	Conference Hotel Rate .....	\$89/night
ISA Member Rate .....	\$325	Hotel Rate cut-off date.....	July 1, 2016
AWWA, WEF, FWEA, ITA Member Rate .....	\$375	Discounted block of rooms are first-come, first-serve.	
Author/Speaker Rate .....	\$125		

#### 2016 OPTIONAL SYMPOSIUM TRAINING COURSES

##### Wireless Networking

##### **Applications of Industrial Wireless Systems (SP25C)**

Date: August 2, 2015 (Tues)

Length: 1 day

CEU Credits: 0.7

Cost: \$720 (\$575 for ISA members)

This course concentrates on industrial wireless applications. Using the broad range of wireless applications-such as video monitoring and security systems, asset tracking (which may rely on a multitude of wireless technologies), mobile operator needs (PDAs, tablet PCs), remote tank farm monitoring, wireless SCADA systems, Voice over wireless LAN- the multitude of operational considerations associated with industrial wireless field transmitter for monitoring, and even control systems are examined. The logical intersections with the plant's IT department are addressed.

##### In-Depth SCADA Cyber Security

##### **Using the ANSI/ISA-99 Standard to Secure Your Control System / In-Depth SCADA Cyber Security (IC32)**

Date: August 1-2, 2016 (Mon-Tues)

Length: 2 days

CEU Credits: 1.4

Cost: \$1585 (\$1265 for ISA members)

This two day intensive course provides an overview of the ANSI/ISA-99 Security for Industrial Automation and Control Systems family of standards and how these can be applied in a typical water or wastewater district. You will be introduced to the terminology, concepts, and models of ANSI/ISA-99 Cyber Security. As well, the elements of creating a Cyber Security management system will be explained along with how these should be applied to commonly used SCADA, DCS and Automation Systems in the water and wastewater sectors.

#### 2016 EXHIBITOR & SPONSORSHIP OPPORTUNITIES


Exhibitor booths for WWAC 2016 are priced at \$875 and come with 2 vendor passes.

Symposium sponsorships are available at \$500, \$1500 and \$3000 levels, with increasing numbers of free passes and pre/post-event exposure.

For more information visit

[www.isawwsymposium.com](http://www.isawwsymposium.com)





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## 2016 Symposium Planning Update

By Pavol Segedy, 2016 Symposium Chair



Happy New Year! Year! With the new year, comes another ISA Water/Wastewater and Automatic Controls Symposium. WWAC Symposium will be on August 2 - 4, 2016 in Orlando, Florida at the Wyndham Lake Buena Vista Resort located on the Walt Disney World property near the Disney Springs (previously known as Downtown Disney).

We have been able to keep a discounted hotel rate of \$89/night. 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 breakfasts, lunches, a general reception, plant tour, and a set of proceedings. ISA members can attend for \$325, AWWA/WEF/ITA members can register for the discounted rate of \$375, and students can register for \$125.

The theme for our 2016 symposium will be “High Performance Automation for Operations and Maintenance.” 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.

Though our program committee is already starting to put together our technical program, we do have a few speaking slots still available. Please send in your abstract as soon as possible to Joe Provenzano. You can see Joe’s update on the symposium program. Being a speaker comes with perks! One of these perks is a discounted registration rate of only \$125 (vs. the \$425 list price).

Don’t forget to set aside your training dollars for 2016. The symposium offers a very cost effective way to get relevant training for the annual CEUs/and PDHs and learn valuable information for your field of expertise.

I look forward to seeing everyone at the 2016 ISA WWAC Symposium in Orlando, Florida.

Want to get involved? Feel free to contact me personally at +1 (919) 427-5313 or [psegedy@nc.rr.com](mailto:psegedy@nc.rr.com)

Read about our 2016 Symposium

August 2-4, 2016

[www.isawwsymposium.com](http://www.isawwsymposium.com)

## 2016 Symposium Technical Program Update

By Joe Provenzano, 2016 Symposium Program Chair



Wastewater facilities.

The technical program for the 2016 Symposium is starting to take shape. The technical program supported by our exhibitors make our attendees aware of the work going on in the field and the products, technologies, and services employed as we continue to automate our Water and

Our symposium reaches out to those automation professionals that continually serve our two industries. This includes treatment plant people (operations, maintenance, engineering and management), AE firms and System Integrators. There is something for everyone.

Receive the latest technical information, network with your peers and take a positive step in your professional development.

Our symposium is a three day event where attendees will experience a breath of learning and continuing education opportunities. Our symposium starts with two optional training courses. This is followed by early-bird symposium badge-pick up and a plant tour. Then we have two full days dedicated to technical presentations and exhibits. In all, we are planning on having 30+ speakers spread between two speaking tracks.

### It’s not too late to submit an abstract!

We still have a few speaking slots available in our technical program. Interested?

Please submit a 250 word write-up about your proposed speaking topic to myself ([provenzano2@comcast.net](mailto:provenzano2@comcast.net)) and to [abstracts@isawwsymposium.com](mailto:abstracts@isawwsymposium.com)





## About the Symposium Hotel

The 2016 ISA Water/Wastewater Symposium will be held at the Wyndham Lake Buena Vista Resort Hotel Orlando, Florida, USA. This modern hotel offers luxury accommodations and located right on the Walt Disney Resort property. It is also situated close to both Sea World and Universal Studio's theme parks. We have negotiated a special \$89/night hotel rate for attendees. This rate is good from August 3 to 7, and is available for symposium attendees, speakers, exhibitors, and training course participants.

### Wyndham Lake Buena Vista Resort

1850 Hotel Plaza Boulevard, Lake Buena Vista, FL, 32830  
(located at Walt Disney World!)  
<http://www.wyndhamlakebuenvista.com>  
[info@wyndhamlakebuenvista.com](mailto:info@wyndhamlakebuenvista.com)  
Reservations: 1 877-999-3223 (toll free)  
Local: 1 407-828-4444

### Symposium Hotel Rate: \$89 per night

The hotel is approximately 18 miles from [Orlando International Airport](#) (airport code: MCO). Click here for [directions](#) (courtesy of Google Maps).

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](http://www.mearstransportation.com) or by calling 1-800-223-3868. A one-way taxi trip from the airport to the hotel typically costs around \$40 USD.



2016 WWAC Symposium Hotel – Wyndham Lake Buena Vista Resort

## 2016 WWAC Symposium Program Schedule Preview

Presented by the Water and Wastewater Division of ISA, our symposium helps in the water and wastewater industry understand how instrumentation, SCADA (supervisory control and data acquisition), and automatic control applications are vital to the treatment and distribution of water; the collection and treatment of wastewater; and the management of storm water.

The preliminary program schedule is as follows:

### Monday – Tuesday, August 2-3, 2016

- Optional 2-day training course
- Optional 1-day training course
- Symposium Registration
- Local Water Treatment Plant Tour (Tues afternoon)

### Wednesday, August 3, 2016

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

### Thursday, August 4, 2016

- Invited & Guest Speakers
- Forum Session
- 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  
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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.

## Symposium Registration

Registration for the symposium is now open! Attendees can register online or using the provided PDF registration form.

[www.isawwsymposium.com/register](http://www.isawwsymposium.com/register)

### Symposium Registration (Aug 2-4, 2016) includes:

- 2 full days of papers and presentations
- poster session
- networking events
- tour of a local water/wastewater facility late-afternoon of Tues, Aug 2
- admission to supplier showcase
- light breakfasts on Aug 3 and Aug 4
- full buffet lunches on Aug 3 and Aug 4
- evening reception on Wednesday, Aug 3 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 / ITA members: .....	\$375
Students: .....	\$125
Authors/Speakers: .....	\$125

### Optional Training Courses (Aug 1-2):

2-day Training Course .....	See website
1-day Training Course .....	See website



Photo of the presentation room at WWAC 2015 in Orlando, Florida

## Exhibit Booth Information for WWAC2016

Exhibitor tables are now available for WWAC2016, which will be taking place August 2-4, 2016 in Orlando, Florida at the Wyndham Lake Buena Vista Resort.

Exhibitor tables at the 2016 ISA Water/Wastewater and Automatic Controls Symposium are 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. 3th evening reception
- exhibit setup: on Tues August 2, 2016 from 12pm-9pm. exhibit teardown is Thursday, August 4 from 5pm-8pm

## 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/exhibitor-sponsor/](http://www.isawwsymposium.com/exhibitor-sponsor/) . Now is a good time to start thinking about our upcoming 2016 symposium. Reserve your spot today!

Visit our Symposium website  
[www.isawwsymposium.com](http://www.isawwsymposium.com)



# 2016 ISA Water/Wastewater and Automatic Controls Symposium



August 2 to 4, 2016.....Wyndham Lake Buena Vista Resort.....Lake Buena Vista, Florida, USA  
Presented by the ISA Water/Wastewater Industries Division – [www.isawwsymposium.com](http://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, guest speakers and is focused on 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/](http://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](mailto:abstracts@isawwsymposium.com) AND [provenzano2@comcast.net](mailto:provenzano2@comcast.net)

### Deadlines

Abstracts Due .....December 15, 2015  
Notification of Acceptance .....January 16, 2016  
First Draft Due .....March 9, 2016  
Final Draft Due.....May 18, 2016

A full author information package, along with sample abstracts, templates and a list of topic ideas can be found at [www.isawwsymposium.com](http://www.isawwsymposium.com)

For additional information, contact:

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### 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**

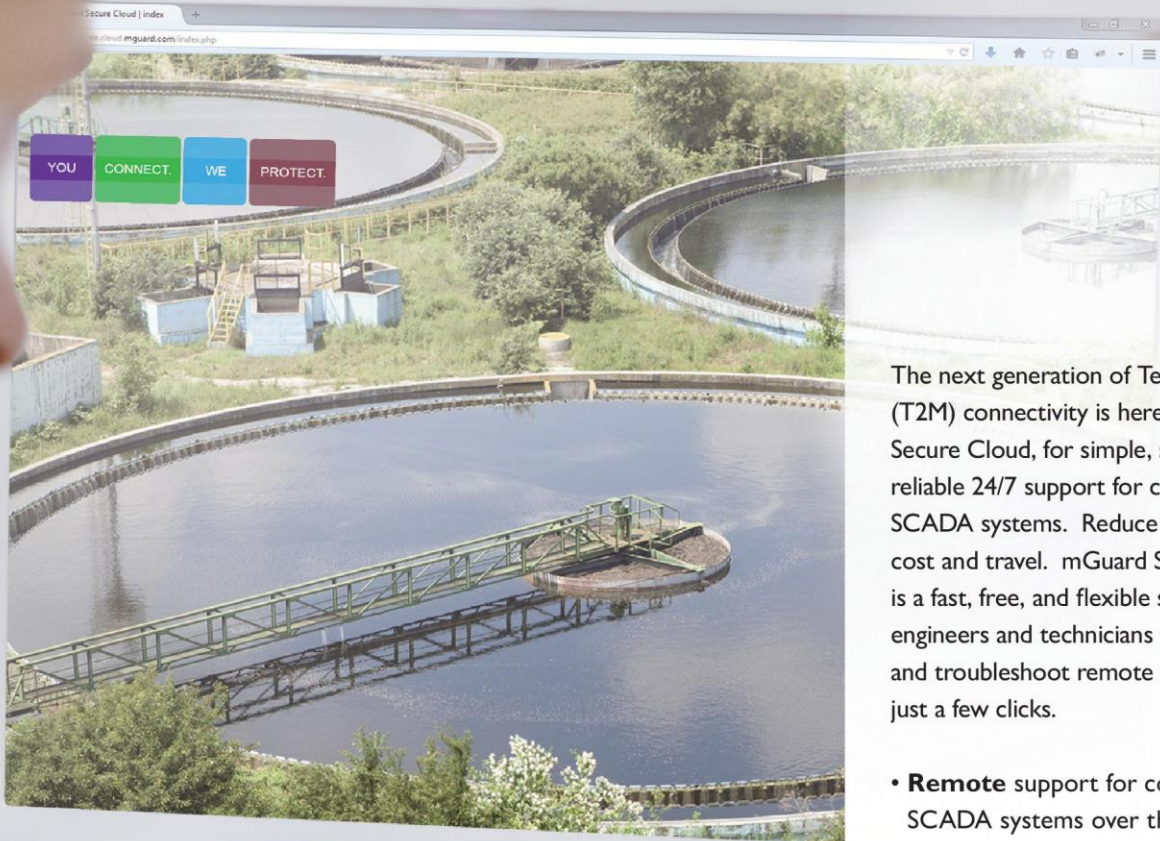
#### Speaking Track 2 – Future of Automation

- 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**



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WWID OUTREACH

### ISA was at WEFTEC 2015 in Chicago *Alarm Management & High Performance HMIs*

ISA WWID was at WEFTEC to present a technical session focused applying High Performance HMIs and Alarm Management to SCADA/DCS systems in the wastewater sector. The session highlighted three top papers from the 2015 ISA Water/Wastewater and Automatic Controls Symposium. The WEF Automation and Information Technology Committee has partnered with the ISA to present this niche ISA symposium which takes place during the first week of August each year. This WEFTEC feature session provided WEFTEC attendees the opportunity to listen to three of the best speakers from this joint ISA-WEF event.

Kevin Patel and Graham Nasby from the WWID attended WEFTEC 2015 – this year in Chicago Illinois on Sept 28-30, 2015. As the largest water quality event in the world, WEFTEC boasts over 1200 exhibitors and 22,000 attendees every year. Kevin and Graham were on hand to host a special “Highlights of the ISA Water/Wastewater Symposium” that showcased papers on the topics of Alarm Management and High Performance HMIs. Also on hand was Tom DeLaura, a long-time ISA and WEF volunteer, who helped by moderating the session and fielding questions from the audience.

The papers in the session were:

**“Effectively Deploying Alarm Management to SCADA Systems: How to realize the benefits of ISA-18.2 in systems that were never designed for it”**

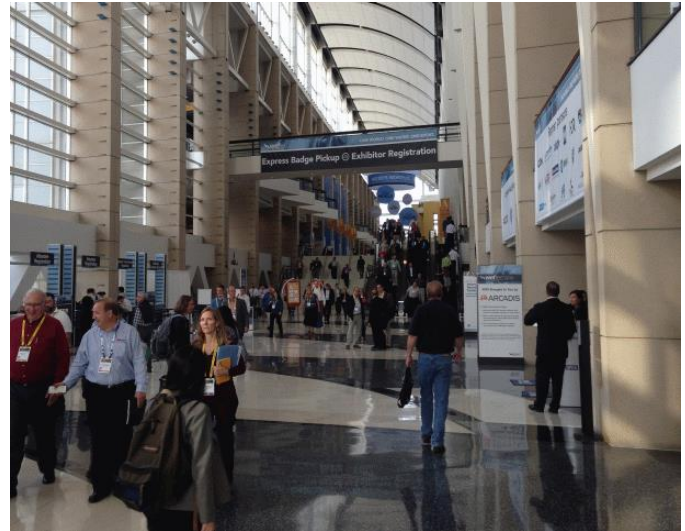
— Graham Nasby

**“The Art of the HMI is Changing: Migrating an Existing HMI Application for Situational Awareness”**

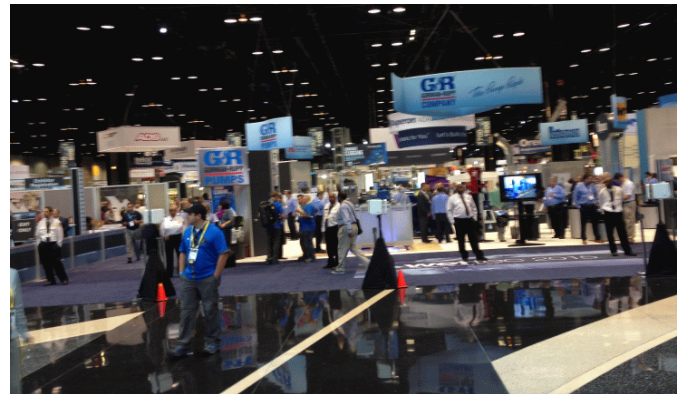
— Kevin Patel, Signature Automation

**“Achieving Operator Buy-In of High Performance Graphics: lessons learned in Lynchburg, VA”**

— Jason Hamlin, City of Lynchburg VA, and Carter Farley, Instrulogic



Entrance Area to the exhibitor hall at WEFTEC 2015.



View of the exhibit hall, with over 1200 exhibitors



Moderator Tom DeLaura introducing the session.



View of “Cloud Gate” sculpture in Millenium Park at night

TECHNICAL ARTICLE

**Density Meters in Wastewater Treatment**

*Challenges in Wastewater Treatment*

By Zachary Wagner, MPV

Challenges faced by the wastewater treatment industry have been looming for the past decades. According to Black and Veatch, the main challenges in the wastewater treatment industry are the growing population, the aging workforce and infrastructure, and the increasingly stringent regulations placed on water.

As a growing population demands more water, the current levels of water treated and recycled per day are only on the rise. As of March 2015, 54 percent of the world’s population lives in urban areas. This number has increased from 35 percent in 1963. It is estimated that the number will be as high as 60 percent in the year 2030. As more people live in a more concentrated area, plants in those areas become quickly overburdened. Black and Veatch estimates that the number of megacities will exceed 25 by the end of 2015.

The World Health Organization estimates that globally more than 40 million cubic meters of water are used every day. With more than 70 percent of water going to agricultural purposes, 20 percent going to industrial purposes, and 10 percent going to domestic purposes, the demand from the agricultural and industrial sectors are increasing at a greater rate than that of domestic use which is still growing as well. The United States Geological Survey approximates that the average person uses almost 140 tons of water every year.

An increased demand on an aging infrastructure leads to a decrease in efficiency. Globally, an aging and overburdened infrastructure resulting from investments that fail to keep pace with the population and economic growth lead to out-of-date equipment and techniques that cannot keep up with the demand. It is estimated that more than \$57 trillion dollars infrastructure investments will be need between 2015 and 2030 to break even with the demand globally. This amount is 60 percent bigger than what it was from 1995 and 2013. In the United States, more than two trillion dollars of infrastructure is needed to update both the water and waste industries. However, only one third of the needed infrastructure will be spent resulting in nearly 7.5 trillion dollars in revenue loss due to not updating to newer, more efficient methods.

Increased demand coupled with more stringent regulations leads to an already at capacity plant falling further behind. Increasing regulations imposed by the Environmental Protection Agency (EPA) and other governing bodies lead to more treatment being needed to meet standards. Meeting more demanding standards is both time consuming and cost inducing.

Even though these challenges are present in the wastewater treatment industry, there are a growing number of solutions that can alleviate these challenges.



***Problems with the Current Sampling Methods***

Sampling occurs at certain points in the wastewater treatment process in order to test for chemical and biological properties in a sample, but can also be used to measure the density of a sample. Samples are bottled, and each bottle represents the process at an instant in time. Because of the long turnaround time, samples become outdated and no longer indicative of what is currently happening in the process. Automating the collection and weighing of the sample saves time and money.

Sampling has many drawbacks. The process is very slow. Some samples can take upwards of 24 hours to receive the data. This is down time that only has limited relevance to the current sewage in the system.

Samples are also inefficient. Due to evaporation and other sources of error, samples can be inaccurate when testing for density. Long wait times between when the sample is taken and when it is measured leads to error in the measurement.

Samples are also not representative of the system as a whole. They simply provide a snapshot of the system at one point in time. The mass flow is constantly changing in the system, possibly changing every second. Therefore, it is important to see how the density is changing.

Finally, sampling is highly dependent on where the sample is taken from. Feed loops where small portions branch off from the main pipeline may have different flow patterns of solids. This means that the density inside of the feed loop may have a different composition than what is in the rest of the system.

The sample may also have a different percent solids depending on where in the cross-section the sample is taken. Heavy substances will settle towards the bottom of the pipe line. A sample taken from the bottom will have an inflated density measurement. The inverse is true of a sample taken from the top of the pipeline.



### Density Meters

At its core, a density meter measures the density of a sample travelling through a pipe. For most applications, they are used to determine the amount of solids moving through a piping system. Density measurements lead to important information. The percentage of solids, the specific gravity, and the mass flow of the system inform the user on how the process is behaving. Understanding how the process is behaving allows for a more dynamic approach to the wastewater treatment process.

With a density meter, the density value can be converted automatically into a specific gravity value – the comparisons of the densities when compared to a reference (usually pure water). The specific gravity shows how much heavier the sewage is compared to pure water. The heavier the sewage is the more treatment is needed to remove impurities. As sewage moves through the plant, knowing the total mass moved facilitates the process.

#### *The Benefits of Density Meters in the Waste Water Industry*

While density meters have been used in various industries over the years, their functionality has not been fully taken advantage of within the waste water treatment industry.

The increased demand caused by a growing population causes the industry to innovate or fall behind. In order to not fall behind, the process needs to be expedited. The process can be expedited by gaining more information into the process. Density meters have been shown to increase the accuracy in the mining industry to over 90 percent in some cases. Knowing the composition of the mining slurry leads to a greater efficiency in the process in some processes. More precise amounts of extracting material can be used to greater results. In some instances of adding density meters to mining

applications, the efficiency of the process was doubled. The speed of the process was increased as well as the reactant was used more efficiently. Similarly, knowing the contents of the pipe in the process will allow a history to be made to refine the process. Without this data, no improvements can be made.

On average, 30 cubic meters of untreated water enters the plant every second. Because some plants are already at capacity, about 19 percent of the incoming water is directly discharged without any kind of treatment. Untreated water goes back into the environment; every liter of untreated water contaminates an additional eight liters of water. As more water is being treated by the process, the plant can run at a higher capacity significantly lower the amount of untreated runoff that gets put back into the ecosystem.

As governing bodies enforce more and more stringent standards, it becomes more and more vital to know the contents of what is flowing through the pipe. According to Black and Veatch, complicating the process is one of the largest issues plaguing the industry. Taking out one variable is instrumental in simplifying the process. Inevitably, this also leads to lower cost. Using the appropriate amount of flocculent cuts cost while not sacrificing quality.

Density meters give vital information about what is going on during the waste water treatment process. Density meters at strategic locations can give valuable and precise information that can be used to reduce cost and eliminate errors that result from using more imprecise density measurement.

#### *How Density Meters Benefit the Wastewater Treatment Industry*

Density meters work using various methods to measure density. Even though different meters have different approaches, they all provide information on how the total suspended solids are moving through the process.

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Density measurements can be used to determine both the percentage of liquid and dry solids. The percentage of liquid in the system is the maximum amount of water that can be salvaged from the sewage. Having real time data allows for treating the wastewater as it is currently and not how it was (as is often the case when taking samples).

Density meters can be used to calculate the mass flow of the system. The mass flow of the system is also represented by the percentage of solids moving through the system. The percent solids of the system is important in the determining the amount of particulates in the water. This leads to understanding the exact, real time composition of the sewage at all times.

Automated operating equipment communicates with one another and facilitates what needs to happen further down the line. Density meters come equipped with alerts and alarms to indicate when abnormal changes happen in the system. Density meters can also detect changes in pressure, temperature, and mass. Data received from the density meter can even be logged. Logging information provides a detailed history of the past and a precedent to base future decisions. This information is vital to update the process and see where faults in the process lie. Building on the past allows plant operators to update the process and improve efficiency. Without this information, the process stagnates and never improves.

Density meters also can provide continuous and real time data. These meters provide up to date data that gives an accurate representation of what is currently happening in the system. Reducing the wait time provides a more proactive way to treat waste water. A proactive approach leads to more productivity, better quality, and higher consistency. Density meters are also able to measure the specific gravity of a liquid in the pipeline. Larger specific gravities indicate that there are larger amounts of solids in the water. Liquids with larger specific gravities need more treatment than those with lower specific gravities.

***Where Density Meters Fill Gaps in the Waste Water Process***

A density meter can be located at multiple points in the wastewater treatment process. Each step of the process gives



access to pieces of information that are vital for process control and improvement.

During the preliminary screening process, it is important to note how much sewage is entering the plant. This information is important because it can give a baseline for how much sewage needs to be treated. A density measurement before any treatment has occurred provides an indication to how much work each step of the process needs.

A density meter after the screening process gives information on how much debris is removed by the screens. The build-up of debris can be measured and the screen can be raked accordingly. This process can be automated allowing for a more efficient plant. The density calculation indicates the amount of untreated sewage entering the primary treatment portion of the process. Density meters are able to measure the fats, oil, and grease removed from the process. Since these substances are lighter than water, a density meter can detect drops in density and measure how much has been removed by a skimmer.

After the preliminary process has removed the large pieces of debris, a density meter functions to indicate how much weight enters and leaves the primary treatment stage. A density meter can function at multiple places in this stage. A meter indicating how much debris is being removed can be placed inside the grit chamber. This measurement tells how much grit needs to be disposed. A density meter on an effluent pipe that leads to the secondary process provides information on how much polymer is needed to treat sewage moving into the secondary process.

In many cases, samples are taken at this point to test for suspended solids and for biological oxygen demand (in some other cases the more general chemical oxygen demand as well). Density meters can calculate the suspended solids content continuously and more accurately than a sample test. Being a continuous process contributes to a greater accuracy and provides greater control of the process. A continuous process gives information of how the system has reached its current state. Continuous data shows the complete history of the process. Abnormalities are seen and able to be analyzed. With sampled data, the abnormalities are missed and corrections can never be implemented. Real time information is invaluable to make informed judgments on how to properly treat the process.

In the secondary process, the most intricate part of the waste water treatment, the waste water is treated with a polymer to form flocculations. Creating flocculations using polymer is very expensive. Facilities must frequently over estimate the amount of polymer to be used due to inaccurate readings. Overusing polymer is a large cost that can be reduced if the percentage of solids is measured properly. Using a density meter to get a reading reduces the waste from overusing polymer allowing for a more cost effective process.

Another benefit of using density meters is that pinpoint flocculation caused by breakup in an aeration process can be detected. Removing these solids before moving on to the tertiary process is vital to verify what is heading to the advanced treatment process. During advanced treatment, more stringent regulations are enforced by governing organizations. Unwanted particles affect certain processes leading to error.

Determining the percentage of solids in a dewatered sludge provides a more accurate prediction to how to extract biofuel and biogas during anaerobic treatment. An inaccurate measurement in the amount of solids leads to over drying the sludge. This creates waste as excess fuel or gas being burned off. Tracking the solids flowing through the plant allows for better decision making.

#### *The Future of Wastewater Treatment*

Density meters located at multiple points in the process provide a way to continuously calculate the amount of solids suspended in a liquid. Each point has significant advantages in automating the process. Automation leads to cost savings and efficiency.

Advanced methods in meters do more than just optimize the process. They also can carry potential for building relations with clients and customers by offering specific accurate data about the consumption and treatment of water. While old methods had their place, modern wastewater treatment facilities use density meters to provide accurate results quickly, saving time and money.

#### References

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#### **ABOUT THE AUTHOR**

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#### ISA PUBLISHING

### **ISA publishes new book on the application of FOUNDATION Fieldbus**

The ISA is pleased to announce the publication of Applying FOUNDATION Fieldbus, a new ISA book that serves as a comprehensive and practical guide to the theory, engineering and implementation of FOUNDATION Fieldbus in process control systems.



#### **Applying FOUNDATION Fieldbus** By B.R. Mehta and Y.J. Reddy

Copyright 2016  
ISBN: 978-1-941546-71-0  
Length: 338 Pages  
Format: Softbound Book  
Publisher: ISA  
Price: \$109 USD (Member Price: \$87)

The book, authored by Bharat Ratilal (B.R.) Mehta, Ph.D. and Jaganmohan (Y.J) Reddy, Ph.D., examines:

*The theory of the operations and basic concepts of the FOUNDATION Fieldbus standards.*

*The different topologies and installation options available in FOUNDATION Fieldbus standards and their applications for enabling engineers to design control systems for solving industry problems.*

*The critical factors to consider when using FOUNDATION Fieldbus -based host systems and field transmitters.*

*The pivotal issues in FOUNDATION Fieldbus from the perspective of an experienced practitioner at a leading company that was a major Foundation Fieldbus installation.*

“This book is aimed at providing the knowledge that engineering and maintenance teams require in applying FOUNDATION Fieldbus,” explains Dr. Mehta, Senior Vice President at Reliance Industries Ltd., in Mumbai, India. “The technology benefits and areas for improvement are unbiased. And because the book is written from a user’s point of view, it bridges the gap between theory and technician-level coverage on a practical basis.”

Essential to the book, Dr. Mehta says, are its clear coverage of concepts and applications, straightforward guidelines for implementing process control systems with FOUNDATION Fieldbus technology, and real-world examples of deployments that have translated theory into practice.

“The book offers a pragmatic approach to the subject, based on industrial experience and taking into account the latest technologies and professional practices,” he adds. “It’s suitable as an important introduction for junior-level professionals as well as an essential reference for more experienced practitioners.”

To buy a copy visit: [www.isa.org/books/](http://www.isa.org/books/)



ASSOCIATION NEWS

**A Primer on ISA’s Strategic Goals**

By Graham Nasby, VP-elect Industries and Sciences

Throughout 2014 and 2015, the leadership of the ISA has been hard at work developing a set of strategic goals for our society to focus on for the next few years. Thanks to the leadership of Dr. Peggie Koon (2014 society president) and Rick Roop (2015 society president), and countless volunteer and staff hours, the ISA has developed a set of five strategic goals.

The goals are, in no particular order: *Big Data*, *Content*, *Cooltest Delivery*, *IACS Cybersecurity* and *Career Advocacy*.

**Big Data** – The world generates in excess of 2.5 billion gigabytes of data every day, 80 percent of which is considered “unstructured,” meaning everything from images, video and audio to social media is available in cyberspace, but who manages it? ISA is committed to operate as a market-driven organization, using internal and external data to better understand trends, improve decision-making, and better align products and services with market dynamics and demands.

**Content** – ISA will consistently deliver relevant content to target audiences at the right time, across all marketing channels, and in a manner in which it was intended. Automation professionals and the industries and communities they serve can rely on ISA for essential information tailored to their needs and interests.

**Cooltest Delivery** – ISA will develop communication channels that deliver our content easily, in an engaging, informative, and forward-thinking way that appeals to multiple generations of automation professionals. A great example is our recently introduced InTech Plus mobile device, an interactive and easy-to-use tool that enables automation professionals to rapidly access, scan, and digest a diverse range of technical and educational content.

**IACS Cybersecurity** – ISA will enhance its worldwide reputation as a leader in the development of industrial cybersecurity standards, training, certificate programs and educational resources. The ISA99/IEC 62443 series of IACS standards are integral components of the federal government’s plans to combat cyberattack because they’re designed to prevent and offset potentially devastating cyber damage. The National Institute of Technology (NIST) and the Department of Homeland Security (DHS) support ISA as a global authority on industrial cybersecurity.

**Career Advocacy** – ISA will develop programs, products, and services that enhance the awareness and proficiency of automation professionals. We will use a cradle-to-grave approach, promoting automation careers to children and students; providing early career education for young professionals; offering leadership and management skills for mid-career individuals; and providing programs to mentor others and give back to the profession for our retirees and late-career professionals.



## SOCIETY NEWS

## Welcome to our new 2016 Society President: James “Jim” Keaveney

The International Society of Automation (ISA) is pleased to announce [James Keaveney](#) as its 2016 President. In this position, Keaveney will work with Society leaders and staff to increase awareness of the value and relevance of the ISA brand and build on ISA’s proven range of capabilities and resources for automation professionals, which includes standards development, education, training, certification, certificate programs, publications, and technical symposia and conferences.

Keaveney, who serves as the Northeast Regional Manager and Key Account Director at Emerson Process Management, brings a strong track record in automation technologies sales and marketing and business planning to his role as Society President. He’s been an active ISA member for more than 30 years and has served in numerous leadership positions, including Society Treasurer, Finance Committee Chair and District 2 Vice President.

“I am extremely excited and honored to serve as the 2016 President of ISA, an organization that has benefited me immensely, both professionally and personally,” says Keaveney. “The automation profession continues to make our world a better place and ISA, by setting the standard for automation, plays a pivotal role in this process. Through its diverse capabilities, ISA helps its members and other automation professionals improve their technical skills and knowledge, and enables companies increase throughput, reduce waste, and improve productivity and profitability—both safely and securely.”

ISA in 2016, Keaveney states, will remain focused on achieving its five strategic goals (Content, Data, Coolest Delivery, Cybersecurity and Advocacy) while placing additional emphasis on:

- Helping industry leaders as well as the public better recognize the value and benefits of automation.
- Accelerating ISA’s presence and successes internationally by addressing the unique needs and challenges within different parts of the world.
- Gaining continual feedback from its key stakeholders—members, leaders, partners, and end-user companies and professionals—to gauge progress and improve processes and solutions.
- Encouraging more members to seek leadership positions within the Society.

“I have never been so optimistic about the future of ISA and its ability and potential to inspire technological innovation, and support growth and career advancement in manufacturing.

Join us as we move the automation profession—and the world—forward,” Keaveney says.

Keaveney has received numerous ISA honors, including the Distinguished Society, District 2 Golden Eagle and Lehigh Valley Section Dannenberg Service Awards. He also received a Certificate in Instrumentation from the Philadelphia Section of ISA.

Keaveney received a bachelor’s degree in business administration from Temple University and a master’s degree in business administration from Penn State University.

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## SOCIETY NEWS

**Setting ISA's priorities for 2016 and beyond**

By Jim Keaveney, 2016 ISA President



In I am really excited and honored to become the President of ISA in 2016. I've been an active member of the Society for than 30 years and have served in numerous leadership positions. I feel confident that my experience and exposure with various operations of ISA have prepared me for this position.

I'm looking forward to working with our Executive Board to build on the progress we've made over the last several years. We have a great process in place and we will remain focused on our five strategic goals: Content, Data, Coolest Delivery, Cybersecurity, and Advocacy.

Without question, ISA has helped me, both professionally and personally. The reason that I first joined ISA was to learn more about process controls and become a more effective automation professional. That investment also has allowed me to develop a network of industry contacts and subject matter experts that can provide technical guidance as well as different perspectives. I also have proactively taken advantage of ISA's many leadership and training opportunities.

Anyone who has been involved in any professional association knows that successfully leading a group of dedicated volunteers requires a skill set that can also help you be more successful at work. ISA has made me a better automation professional, manager, and leader. Why did you become a member of ISA?

It's essential that we always encourage our volunteer leaders to bring their perspective and experience to their ISA roles. My background, as you may know, is in sales and marketing, with a decent dose of business planning. I've always emphasized the importance of gaining different viewpoints since experience proves that an inclusive approach leads to better business decisions. Ensuring that every leader brings their unique perspective and experience to our discussions can only help create a better ISA.

**Building on our strengths**

The automation profession continues to make our world a better place. We should all be proud to be a part of the positive change automation has created. ISA plays a pivotal role in this process—helping our members and other automation professionals improve their technical skills and knowledge, and enabling companies increase throughput, reduce waste, and improve productivity and profitability, both safely and securely.

ISA has an obligation to help industry leaders as well as the public better recognize the value and benefits of automation. Through our work with the Automation Federation, we have defined our profession through the Automation Competency Model (ACM). This has allowed us to work with schools to develop automation and controls curricula to help seed the next generation of professionals. We need to continue to reach out to and partner with schools, teachers, and educational leaders in preparing young people for STEM-focused career fields.

**Priorities for 2016 and beyond**

Though we've made great strides in our planning process, there is still much work to be done. In 2016, we'll be keenly focused on alignment, leadership, globalization, and the voice of the customer.

**Alignment** – We need to take our message to the corporate offices of our members and customers. Industry has made it clear that workforce development, process safety, and cybersecurity are concerns. Who better than ISA to work with companies to help address these critical needs?

**Leadership** – Volunteer organizations are challenged to attract leaders and ISA is no exception. Did you notice that half of our Society leadership positions in our past election attracted only one candidate? Fortunately, we had great candidates but we need more to step forward to offer their time and talent in leadership positions. The leadership challenge, of course, incorporates many aspects, including search, nomination, succession planning, mentoring, diversity and inclusion, and training. Our Board will be examining our current processes and brainstorming on possible improvement opportunities.

**Globalization** – We must accelerate our focus on what works outside North America, knowing that equivalent does not always mean effective and there may be more than one model for all. Understanding local cultures, challenges, and opportunities, while protecting our brand and intellectual property, will be the basis for us to truly become an international association.

**The Voice of the Customer** – We need to continually improve our ability to obtain feedback from and communicate with all of our stakeholders—members and local volunteer leaders, partners, and “end user” companies and professionals. It is the only way that we can become better. Please share and e-mail me your thoughts on new content, trends we should monitor, products you want to see ISA offer, or new ways to deliver our services through isa.org. We also need to ensure that all our stakeholders clearly understand the difference that ISA is making. Please consider being an advocate for ISA within your company.

I left out “having fun along the way.” Though there is much work to be done, we have a great group of leaders and staff



partners that are passionate about our profession and ISA. We work hard but we also know how to have fun and enjoy the camaraderie. I encourage you to take a look at all the ways you can contribute, collaborate, and apply your time and expertise. Contact your local section, district, or division to see how you can help. Get involved!

**Optimistic about our future**

I have never been so optimistic about the future of ISA. I am hoping that each of you will join us and make a difference in both ISA and our profession. Together we can help ISA achieve our vision to set the global standard for automation and enable automation professionals across the world to work collectively for the benefit of all. Please contact me at [President@isa.org](mailto:President@isa.org). I look forward to hearing from you and working with you as we move ahead in 2016.

**Jim Keaveney**

2016 ISA President

*Note: This article previously appeared in January 2016 issue of ISA Insights. Reprinted with permission.*

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### WWID is on LinkedIn

LinkedIn is a social media site that is geared towards professionals and business people. Located at [www.Linkedin.com](http://www.Linkedin.com), the site features online profiles, discussion groups and tools for identifying and keeping track of contacts. As of January 2014, LinkedIn has over 300 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>



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## Call for Newsletter Articles

The WWID newsletter is published four times a year (winter, spring, summer, and 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/](http://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 are 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@grahamnasby.com](mailto:graham.nasby@grahamnasby.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@grahamnasby.com](mailto:graham.nasby@grahamnasby.com).





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### 2016 Symposium Details

Date: August 2-4, 2016  
Location: Orlando, Florida, USA  
Venue: Wyndham Lake Buena Vista Resort  
General Symposium Chair: Pavol Segedy, PE  
Website: [www.isawwsymposium.com](http://www.isawwsymposium.com)

### Future Symposium Dates – Save the Date

WWAC2017:  
August 8-10, 2017 in TBD  
WWAC 2018:  
August 7-9, 2018 in TBD

### About the ISA Water/Wastewater Division

The ISA Water / 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/](http://www.isa.org/wwid/)

### About the ISA

The International Society of Automation ([www.isa.org](http://www.isa.org)) is a nonprofit professional association that sets the standard for those who apply engineering and technology to improve the management, safety, and cybersecurity of modern automation and control systems used across industry and critical infrastructure. Founded in 1945, ISA develops widely used global standards; certifies industry professionals; provides education and training; publishes books and technical articles; hosts conferences and exhibits; and provides networking and career development programs for its 40,000 members and 400,000 customers around the world. For more information see [www.isa.org](http://www.isa.org)





# 2016 Water / Wastewater and Automatic Controls Symposium

August 2-4, 2016 • Wyndham Lake Buena Vista Resort • Orlando, Florida, USA

Presented by the ISA Water / Wastewater Industries Division - [www.isawwsymposium.com](http://www.isawwsymposium.com)

Technical Co-Sponsors: WEF Automation and Info Tech Committee, Florida AWWA Section, Florida Water Environment Association, ISA Tampa Bay Section, and Instrumentation Testing Association

## Conference Preview



*Setting the Standard for Automation™*



## About the Symposium

Presented by the ISA Water and Wastewater Industries Division, in collaboration with the Florida AWWA Section, the WEF Automation and Info Tech Committee, the Florida Water Environment Association, and the Instrumentation Testing Association, 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; the collection and treatment of wastewater; and the management of stormwater. The symposium also provides an excellent opportunity to gain valuable technical information, network with other professionals, professional development, and continuing education credits (CEUs and PDHs).

This 3-day symposium 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.



- 2 full days of speakers/presentations
- Track 1 – Instrumentation, System Integration, Automation, Plant Case Studies, New Technologies, Process Optimization
- Track 2 – SCADA Workplace Integration, HMI, Human Factors, Alarm Management
- Two Optional ISA Training Courses before the symposium
- Plant Tour of a local Water/Wastewater 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

## Attendee Profile

The symposium is targeted at anyone involved with automation, instrumentation, and/or control systems in the water/wastewater sectors. Attendees typically range from plant operators, maintenance, and technical personnel to engineers, programmers and system integrators.

Meet and network with professionals who are responsible for the automation, instrumentation and operating aspects of water and wastewater facilities across North America. According to a recent US EPA study there are over 16,000 publicly-owned water plants across the USA, and another 21,000+ wastewater treatment plants throughout the country.

This knowledge-driven event focuses on bringing together individuals who are looking for technical solutions to their water and wastewater challenges. They are looking for products, services, and partners they can trust to make their jobs easier.

## Schedule of Events

### Monday - Tuesday, August 1-2, 2016

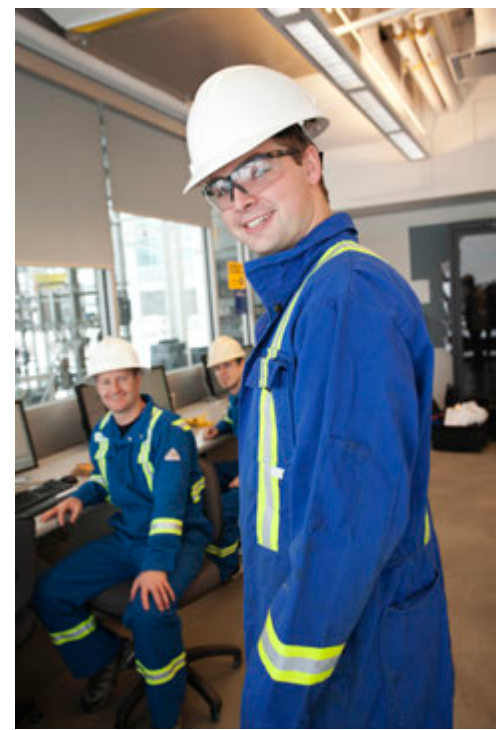
- Optional training courses
- Symposium Registration
- Local Water/Wastewater Plant Tour (late afternoon Tuesday)

### Wednesday, August 3, 2016

- Keynote Speaker
- Invited Speaker
- Presentations and Papers
- Light Breakfast, Coffee Breaks and Buffet Lunch Provided
- Supplier Showcase
- Evening Reception

### Thursday, August 4, 2016

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



## Technical Program

This year's symposium has a special focus on how automation will be involved and integrated into many of our day-to-day activities. The two day technical program will include a keynote address, a special welcome from the director of the ISA water/wastewater division, and two invited speakers. Guest speakers from the AWWA and WEF will also speak about the current advances in using instrumentation and SCADA in their sectors along with a panel session on what consumers want from manufacturers.

## Local Plant Tour

Attendees will have the option of attending a tour of a local treatment facility on the late afternoon of Tuesday August 2, 2016. The tour is free to all registered symposium attendees. Complimentary bus transportation from the hotel to/from the tour site is included. Invitations to RSVP for the bus tour will be sent to all registered attendees approximately 3 weeks prior to the symposium.

## Optional Short Courses

### Using the ANSI/ISA-99 Standard to Secure Your Control System / In-Depth SCADA Cyber Security (IC32)

Date: Mon. - Tues., August 1 - 2, 2016

Length: 2 days

CEU Credits: 1.4

Cost: \$1585 (\$1265 for ISA members)

This two day intensive course provides an overview of the ANSI/ISA-99 Security for Industrial Automation and Control Systems family of standards and how these can be applied in a typical water or wastewater district. You will be introduced to the terminology, concepts, and models of ANSI/ISA-99 Cyber Security. As well, the elements of creating a Cyber Security management system will be explained along with how these should be applied to commonly used SCADA, DCS and Automation Systems in the water and wastewater sectors.

### Applications of Industrial Wireless Systems (SP25C)

Date: Tues., August 2, 2016

Length: 1 day

CEU Credits: 0.7

Cost: \$720 (\$575 for ISA members)

This course concentrates on industrial wireless applications. Using the broad range of wireless applications-such as video monitoring and security systems, asset tracking (which may rely on a multitude of wireless technologies), mobile operator needs (PDAs, tablet PCs), remote tank farm monitoring, wireless SCADA systems, Voice over wireless LAN- the multitude of operational considerations associated with industrial wireless field transmitter for monitoring, and even control systems are examined. The logical intersections with the plant's IT department are addressed.

## Exhibitor Opportunities

Exhibitor tables are priced at \$875 each which includes:

- one six foot table with skirting, 2 chairs, duplex electrical outlet
- two vendor passes, which include ID badges and full conference access
- additional vendor passes can be purchased for \$200/each
- breakfasts, coffee breaks, and lunches on Aug. 3 & 4
- admission to the general reception with cash bar on the evening of Aug. 3rd
- exhibit room hours: Aug. 3 & 4 (8:00am-5:00pm), and during Aug. 3rd evening reception
- exhibit setup: Aug. 2 (6:00pm-9:00pm); exhibit take down Aug. 4 (5:00pm-8:00pm)

## Why you should attend

*Opportunity to learn from others and "talk shop" with people who understand the challenges of your sector*

*Cost effective professional development and continuing education.*

*Keep your skills current.*

*Get to compare experiences and lessons learned*

*Learn about new technologies, products and services*

*Be actively involved in your professional development*

*Establish contacts in the industry*

*Share ideas and experiences with others in the sector*

*Learn Something*

*Have Fun*

## Benefits for Water Utilities

*Inexpensive professional development*

*2.5 days of training for \$425*

*Group discounts available*

*Opportunity for staff to learn about new ideas and industry innovations*

## Benefits for Engineering Firms

*Exposure to new ideas*

*Learn from plant case studies*

*Talk to operations and maintenance professionals in an informal environment*

*Learn about new products and techniques*

## Registration & Fees

### Full Symposium

List Price -	\$425
ISA Members -	\$325
AWWA & FSAWWA Members -	\$375
WEF, ITA & FWEA Members	\$375
Students -	\$125
Authors / Speakers -	\$125

### Optional Cyber Security Course

List Price -	\$1585
ISA Members -	\$1265

### Optional Wireless Systems Course

List Price -	\$720
ISA Members -	\$575

The symposium hotel rate is \$89/night



# 2016 Water / Wastewater and Automatic Controls Symposium

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. ISA is the founding sponsor of The Automation Federation.



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*For more information visit:*

[www.isawwsymposium.com](http://www.isawwsymposium.com)