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Setting the Standard for Automation™

Onsite Program



EWAC ISA Energy & Water Automation Conference 2019

Orlando, FL USA • Training: 5-6 August • Conference: 7-8 August

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A Message from the Chair(s):

Welcome to the 2019 ISA Energy & Water Automation Conference

It is our pleasure to welcome you to this hybrid industry experience bringing together the best and brightest professionals in the municipal and industrial water/wastewater treatment and energy sectors.

This all-new event combines elements from ISA's legacy POWID and WWID Division-sponsored annual symposia into a one-of-a-kind, enhanced technical conference experience. We're excited to offer attendees a meaningful and comprehensive technical program that brings expertise from multiple industries to bear on today's most pressing challenges. This approach gives us an opportunity to identify and discuss new technological solutions from a holistic perspective, learning from each other and widening our professional networks.

Whether you are a regular attendee, supporter of ISA conference events, or a first-timer, we feel this year's newly faceted event has something for everyone, with powerful keynote and invited topics, three comprehensive content tracks, a vendor networking showcase, and additional technical training short course opportunities to round out your professional development goals.

The joint program committee has done an excellent job laying out the two-day program and identifying subject matter experts on a variety of topics. We would like to thank AIChE (American Institute of Chemical Engineers) for collaborating with us on this event and adding relatable subject matter focusing on industrial water process applications and discussions, to our program content deliverables.

A special thanks goes out to all of our authors for agreeing to develop and present the various sessions during this two-day event. Thank you to our sponsors/vendors for your support and for sharing your technological innovations and services. Your participation by providing knowledge, expertise, and perspectives continues to make ISA conference events a valuable technical content resource for the automation community.

We also wish to thank our melded program committee who has worked tirelessly to support, define and deliver this new combined event, and by providing their time and talents, even if it was in standby mode in case we needed them.

Be sure to make the most of your ISA EWAC 2019 and Orlando experience by networking with the various participants at this year's event.

Enjoy the ride!



ISA Water/Wastewater Division

Manoj Yegnaraman,
PE, CP, CE

Associate Vice President
and Principal I&C Engineer
Carollo Engineers, Inc.



ISA POWID Division

Josiah Long, ISA84 SIS Expert

Senior Control System Engineer
Bechtel Corporation

Conference Committee:

Conference Chair—Water

Manoj Yegnaraman, PE, CP, CE
Carollo Engineers

Conference Chair—Energy

Josiah Long, Bechtel, Chair

Program Chair—Water

Joe Provenzano, KPRO Engineering Services

Program Co-Chair—Water

Hassan Ajami, PCI

Program Chair—Energy

John Sorge, Southern Company

ISA POWID Director—Energy

Xinsheng Lou, GE Energy

Recognition/Awards

Donald Labbe, Schneider Electric

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Bob Dusza, City of Manchester Water
and Sewer Department

Carter Farley, InstruLogic, LLC

Joshua Gelman, PE, CDM Smith

Jon Grant, Woodard & Curran, Inc.

Jason Hamlin, Lynchburg Regional
Wastewater Treatment Plant

David Hobart, PEng, CAP, ISA84-SFS,
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Lucas Jordan, PE, MR Systems

Maxym Lachance, PEng, BBA

Paul McGuire, PE, North East Ohio Regional
Sewer District

Jonathan Mitchell, c2i Inc.

Tony Morelli, PE, Publix Super Markets

Vickie Olson, Honeywell Process Solutions

Kevin Patel, PE, Signature Automation

Matt Phillips, City of Guelph Water Services Dept.

Pavol Segedy, PE, HDR, Inc.

David Wilcoxson, PE, LEED AP, ENV SP, Stantec

Get Involved

Share your experience online. Let us and others know your favorite part of the event, whether it's a speaker, presentation, training class, or networking by using the event hashtag below.

#ISAEWAC2019



..... Keynote Speakers - *Heritage Park*

Wednesday, 7 August



Tom DeLaura, PE
President/CEO
DeLaura Consulting
Water
Environment
Federation
(WEF)

Asset Management—An Approach to Achieving Sustainability

Tom has enjoyed 45 years in the public utility workspace, applying advanced technology through innovative management practices to achieve business goals. His water community first-hand experiences and wide-ranging perspectives help clients leverage automation to create environments of full understanding, collaboration and well-founded decision making, by utilizing human and technical resources to produce optimum results.

He understands the day-to-day activities that lead to the complete lifecycle management of assets, and therefore how automation can support every component of asset management. Connecting people (organization), processes (workflows), and technology, under the framework of the asset management philosophies of regulatory agencies, will identify the needed data, make it available, believable, and understandable to help planning, capital, and operational initiatives.



Dean Ford,
CAP, PE
Managing
Principal
Engineer/
Executive VP
Westin
Technology
Solutions

Automation Maturity—Where Does the System Live?

Dean's entire 22+ year career has involved automation systems engineering and consulting. He currently serves the water industry as the managing principal engineer and executive vice president of Westin Technology Solutions engineering practice where he leads a dedicated and passionate staff of automation engineering professionals. He is a licensed Control Systems Engineer in 18 states and a Certified Automation Professional®.

Ford's presentation will review an Automation Maturity Model and how it can be used to drive your organization toward a comprehensive system and approach that addresses all the factors in automation: people, process, technology. He will address development and use of a vision and mission statement, importance of executive and leadership buy-in and support, automation master planning, how to better justify automation projects, people power—how to engage the organization, and the real power of standardization.

Thursday, 8 August



Mark Delfunt
Director of
Knowledge
Management
InSource
Solutions

Why You Need a Digitization Strategy

Mr. Delfunt has over 42 years in manufacturing, municipal, and industrial process control. Mark serves on the leadership team at InSource Solutions, headquartered in Richmond, VA, where he has responsibilities for managing strategic knowledge assets used to create value for clients and employees designed to help them be more successful and make the complex simple.

Prior to this, Mr. Delfunt held positions in engineering design, instrument engineering, automation & controls, continuous improvement consulting, business development, and various management and leadership positions at various end-users and consulting organizations.

Beginning his career in water/wastewater treatment, Mr. Delfunt worked in various municipal sites in Alabama, Tennessee, Georgia, and Texas. Additionally, Mark has worked in various vertical industries such as food and beverage, chemical, pulp and paper, power generation, engineered materials, fibers, and textile throughout North America.

Monday, 5 August

IC30C1 - Introduction to SCADA Systems Integration

Instructor: Cameron Kamrani

Seminole A

This course explains the parts and technologies that make up a Supervisory Control and Data Acquisition (SCADA) system and shows you how to evaluate potential benefits of applying the technology to your process application.

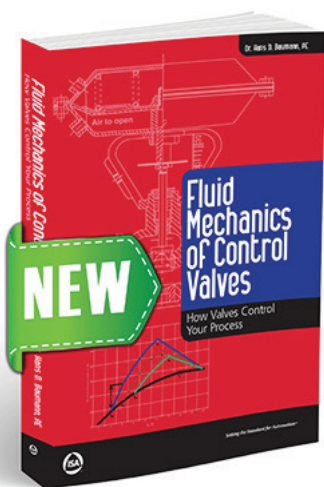
IC39C - Introduction to the Management of Alarm Systems

Instructor: John Bogdan

Seminole B

This course focuses on the key activities of the alarm management lifecycle provided in the ANSI/ISA-18.00.02 standard—Management of Alarm Systems for the Process Industries. The activities include the alarm philosophy development, alarm rationalization, basic alarm design, advanced alarm techniques, Human Machine Interface (HMI) design for alarms, monitoring assessment, management of change, and audit.

How do valves control your process?



Reflecting the latest knowledge of fluid mechanics and acoustics relating to control valves, this practical, best-practice reference guide explains the function and purpose of control valves along with their various types, features, and limitations.

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Setting the Standard for Automation™



Tuesday, 6 August

MT05C - Project Management for Technical Professionals

Instructor: Cameron Kamrani

Seminole A

This course provides a project management overview for professionals responsible for managing technical projects as well as for anyone interested in enhancing their project management knowledge and skills. It broadly overviews the concepts and practices of the project management lifecycle and presents the techniques, concepts, and tools needed to define, plan, monitor, control, and close a technical project.

IC87C - CyberSensors: Advancements in Automation CyberPhysical Security

Instructor: Sterling Rooke

Seminole B

This course presents a substantial change to cybersecurity and cyberphysical security that is arising in the electric utility SCADA domain. Advances in technology as well as business operation changes are presented with specific impacts on legacy SP95/99 (Purdue Model and zones & conduits) architectures. Modern advances in sensor technology, IT/OT cognizant systems, the latest wireless and Internet of Things (IoT and Industrial IoT) are layered into the “cybersensors” discussions providing implications for seamless integration into IT security and OT operational systems. Numerous examples of real-world deployments are covered for facilities using supervisory control and acquisition (SCADA) systems.

Registration:

Member: 650 USD

Community Member/List: 815 USD

Time: 8:00 a.m. – 4:00 p.m.

CEUs/PDHs: .7/7



Conference Agenda

See presenter list on page 8

WEDNESDAY, AUGUST 7th			
7:00 a.m.	Registration - Salon Foyer Networking/Refreshments/Exhibits - Grand Salon		
8:00 a.m.	Welcome/Opening Remarks - Heritage Park Manoj Yegnaraman, EWAC 2019 Chair - Water/Wastewater Division		
8:15 a.m.	Introduction of Keynotes Joe Provenzano, EWAC 2019 Program Chair - Water/Wastewater Division		
Keynote Speakers			
8:30 a.m.	Tom DeLaura, President/CEO Delaura Consulting Water Environment Federation (WEF) “Asset Management—An Approach to Achieving Sustainability”		
9:15 a.m.	Dean Ford, CAP, PE Managing Principal Engineer/Executive VP Westin Technology Solutions “Automation Maturity—Where Does the System Live?”		
10:00 a.m.	Networking Break/Exhibits - Grand Salon		
	TRACK 1 - Heritage Park	TRACK 2 - Poinciana A	TRACK 3 - Poinciana B/C
	SCADA, ALARM MANAGEMENT AND OPTIMIZATION	INSTRUMENTATION AND COMMUNICATION	INDUSTRIAL CYBERSECURITY & SAFETY
10:30 a.m.	Synchronization of alarm management, graphics, and workstations	Adoption of Fieldbus Networks For Plant Upgrades	Functional Safety Assessment Stage 3 - in Practice
11:00 a.m.	An Emerging Approach to SCADA Infrastructure Methodology for 21st Century Water Infrastructure	TBD	Surprises in a Decade of Evolving SCADA Security Advice
11:30 a.m.	Effluent Water Handling and Operational Efficiency	Five Guidelines to Ensure the Integrity of Your Industrial Operations	Nuclear Main Control Room Obsolescence & Cyber Security Regulations Are New Challenges To Overcome
Noon	Lunch Break/Exhibits - Grand Salon		
	TRACK 1 - Heritage Park	TRACK 2 - Poinciana A	TRACK 3 - Poinciana B/C
	SCADA, ALARM MANAGEMENT AND OPTIMIZATION	INSTRUMENTATION AND COMMUNICATION	INDUSTRIAL CYBERSECURITY & SAFETY
1:30 p.m.	Process Control System Migrations	Smart Transmitters Enable Smart Sensors	Implementing ISA / IEC 62443 Strategies to Protect Process Control Systems
2:00 p.m.	Implementation of Functional Safety Management, Cost-Saving or Gold Plating	Connecting the last mile of Industrial IoT – new enablers for the energy and water infrastructure	Converge Asset and Vulnerability Management Processes and Controls Across IT and OT to Close Exploitable Gaps
2:30 p.m.	Typical controls and SCADA upgrades versus next generation hybrid systems	Secure Data Communication Strategies for Predictive Maintenance of Control Valve Actuators	Visibility and ICS Security in Water and Wastewater Process Automation
3:00 p.m.	Networking Break/Exhibits - Grand Salon		
3:30 p.m.	Session Wrap-up/Closing Remarks - Heritage Park		
	Parking Lot Session Discussions		
	ISA Power & Water Award Recognitions		
5:00 p.m.	Opening Night Reception - Grand Salon		

Conference Agenda

See presenter list on page 8

THURSDAY, AUGUST 8th			
7:00 a.m.	Registration - Salon Foyer Networking/Refreshments/Exhibits - Grand Salon		
8:00 a.m.	Welcome Back/Introduction of Keynote - Heritage Park Josiah Long, EWAC 2019 Chair - Power Industry Division		
	Keynote Speaker		
8:15 a.m.	Mark Delfunt, Director of Knowledge Management InSource Solutions "Why You Need A Digitization Strategy"		
	TRACK 1 - Heritage Park	TRACK 2 - Poinciana A	TRACK 3 - Poinciana B/C
	SCADA, ALARM MANAGEMENT AND OPTIMIZATION	INSTRUMENTATION AND COMMUNICATION	INDUSTRIAL CYBERSECURITY & SAFETY
9:00 a.m.	Saving Money and Improving Operations Through RO Plant Automation	The impact of efficient calibration during outages	Experience with ISA 67.04 with Digital Safety Systems at DOE Non-Reactor Nuclear Plants
9:30 a.m.	What Does All This Data Mean to Drinking Water and Wastewater Plant Operations?	TBD	How Final Element Proof Test Can Effect Your Safety Instrumented Function (SIF)
10:00 a.m.	Creating Cohesive and Unified SCADA Systems	Equipment Tagging: A user with this Username already exists!	SCADA and Cybersecurity Improvements at LRWWU
10:30 a.m.	Networking Break/Exhibits - Grand Salon		
	TRACK 1 - Heritage Park	TRACK 2 - Poinciana A	TRACK 3 - Poinciana B/C
	SCADA, ALARM MANAGEMENT AND OPTIMIZATION	INSTRUMENTATION AND COMMUNICATION	INDUSTRIAL CYBERSECURITY & SAFETY
11:00 a.m.	Envisioning a Smart Utility - A SUEZ Approach	Distributed Sewer Infrastructure: A Solution to Replace Septic Tanks	ISA/IEC 62443 Certifications are Expanding and Becoming a Household Name
11:30 a.m.	Dynamic Simulations of Low Load Operation of Steam Power Plants	Gain More Confidence in Your Flow Measurement	Tales from the Field: Industrial Attack Surfaces seen in Real World Plants
Noon	Central Control Room Project for Jejan Water Infrastructure, A Case Study	Transforming Data Into Information: Implementing Data Management Solutions to Drive Efficiencies	Overview of NETL Sensors & Controls Development for Fossil Energy Power Generation
12:30 p.m.	Lunch Break/Exhibits - Grand Salon		
	TRACK 1 - Heritage Park	TRACK 2 - Poinciana A	TRACK 3 - Poinciana B/C
	SCADA, ALARM MANAGEMENT AND OPTIMIZATION	INSTRUMENTATION AND COMMUNICATION	INDUSTRIAL PROCESS WATER TECHNOLOGIES & APPLICATIONS
1:30 p.m.	Integrating CCR/ELG System Controls into the Power Plant Distributed Control System	PLC-Based Real-time Rheological Process Analyzers for Non-Newtonian Processes	Automatic Advanced and Intelligent control to Optimize treatment and distribution of produced water in the Oil and Gas Industry
2:00 p.m.	TBD	Calibrating multivariable instrumentation	TBD
2:30 p.m.	TBD	TBD	TBD
3:00 p.m.	Networking Break/Exhibits - Grand Salon		
3:30 p.m.	Session Wrap-up - Heritage Park		
	Parking Lot Session Discussions		
4:00 p.m.	CLOSING REMARKS/ADJOURN		

Paper Titles

Title	Name	Organization	Day/Track
Synchronization of alarm management, graphics, and workstations	Benjamin Poski	Emerson Automation Solutions	Wed/Track 1
An Emerging Approach to Scada Methodology for 21st Century Water Infrastructure	Jeffrey Dorsey	Great Lakes Water Authority	Wed/Track 1
Effluent Water Handling and Operational Efficiency	Fakhri Musameh	kuwait oil co.	Wed/Track 1
Implementation of Functional Safety Management, Cost-Saving or Gold Plating	Keveh Geramifar Arsham Ahmadi	Fluor ThinkersGrid	Wed/Track 1
Typical controls and SCADA upgrades versus next generation hybrid systems	Jose Pina	Schneider Electric	Wed/Track 1
Adoption of Fieldbus Networks for Plant Upgrades	David White Andrae Rauch Mike Seamons	Sacramento Regional County Sanitation District	Wed/Track 2
Five Ways to Ensure the Integrity of Your Industrial Operations	Michael Rothschild	Indegy	Wed/Track 2
Connecting the last mile of Industrial IoT – new enablers for the energy and water infrastructure	Murat Ocalan	Rheidiant	Wed/Track 2
Smart Transmitters Enable Smart Sensors	Steven Smith	Endress+Hauser	Wed/Track 2
Secure Data Communication Strategies for Predictive Maintenance of Control Valve Actuators	Jason Reed	Phoenix Contact	Wed/Track 2
Implementing ISA / IEC 62443 Strategies to Protect Process Control Systems	Garth Harrison	Owl Cyber Defense Solutions	Wed/Track 3
Converge Asset and Vulnerability Management Processes and Controls Across IT and OT to Close Exploitable Gaps	Ted Gary	Tenable	Wed/Track 3
Visibility and ICS Security in Water and Wastewater Process Automation	Katherine Brocklehurst	Claroty	Wed/Track 3
Nuclear Main Control Room Obsolescence & Cyber Security Regulations Are New Challenges To Overcome	Otto Fest	Otek Corporation	Wed/Track 3
Surprises in a Decade of Evolving SCADA Security Advice	Michael Firstenberg	Waterfall Security Solutions	Wed/Track 3
What Does All This Data Mean to Drinking Water and Wastewater Plant Operations?	Pam Moss	Hach	Thurs/Track 1
Saving Money and Improving Operations Through RO Plant Automation	Mike Stoup	McKim & Creed, Inc.	Thurs/Track 1
Process Control System Migrations	Richard Brooks	Hatch	Thurs/Track 1
Central Control Room Project for Jazan Water Infrastructure, A Case Study	Jasir Sabri	CONSYST Technologies	Thurs/Track 1
Creating Cohesive and Unified SCADA Systems	Lucas Jordan	MR Systems	Thurs/Track 1
Dynamic Simulations of Low Load Operation of Steam Power Plants	Xinsheng Lou	GE Steam Power	Thurs/Track 1
Integrating CCR/ELG System Controls into the Power Plant Distributed Control System	Mike Bergin	Schneider Electric	Thurs/Track 1
SUEZ SCADA National Standards	Manoj Gopu	SUEZ Water	Thurs/Track 1
Distributed Sewer Infrastructure: A Solution to Replace Septic Tanks	James Ruiz	ITG Technologies	Thurs/Track 2
PLC-Based Real-Time Rheological Process Analyzers for of Non-Newtonian Processes	Michael Mwembeshi	Bechtel	Thurs/Track 2
Functional Safety Assessment Stage 3 - in Practice	Keveh Geramifar Arsham Ahmadi	Fluor Thinkersgrid	Thurs/Track 2
The impact of efficient calibration during outages	Ned Espy	Beamex	Thurs/Track 2
Calibrating multivariable instrumentation	Ned Espy	Beamex	Thurs/Track 2
Equipment Tagging: A user with this Username already exists!	Kalyani Ganesan	Carollo Engineers, Inc.	Thurs/Track 2
Transforming Data into Information: Implementing Data Management Solutions to Drive Efficiencies	Ken Kuruc	Hach	Thurs/Track 2

Title	Name	Organization	Day/Track
Gain More Confidence in Your Flow Measurement	Vincent Miller	Emerson	Thurs/Track 2
SCADA and Cybersecurity Improvements at LRWWU	Jonathon Grant	Woodard & Curran Inc.	Thurs/Track 3
Experience with ISA 67.04 with Digital Safety Systems at DOE Non-Reactor Nuclear Plants	Josh Long	Bechtel	Thurs/Track 3
How Final Element Proof Test Can Effect Your Safety Instrumented Function (SIF)	Loren Stewart	exida	Thurs/Track 3
ISA/IEC 62443 Certifications are Expanding and becoming a Household Name	Ted Stewart	exida	Thurs/Track 3
Automatic Advanced and Intelligent control to Optimize treatment and distribution of produced water in the Oil and Gas Industry	Hector Perez-Rodriguez	West Engineering	Thurs/Track 3
Tales from the Field: Industrial Attack Surfaces seen in Real World Plants	Katherine Brocklehurst	Claroty	Thurs/Track 3
Overview of NETL Sensors & Controls Development for Fossil Energy Power Generation	Ben Chorpene	US DOE/NETL	Thurs/Track 3

ISA 2019 Energy & Water Conference Award Recognitions

ISA Power Industry Division

ISA Power Industry Division Co-Facilities Award:

John Carver - West County Energy Center, Loxahatchee, FL

Chad Kiger – Industrial Testing and R&D Facilities @ the Analysis and Measurement Services (AMS) Corporation, Knoxville, TN

Other POWID Recognitions:

ISA Power Industry Division Robert N. Hubby Scholarship Award

Peter Shaw – Virginia Tech

ISA Power Industry Division Service Award

Seth Olson, Chevron

ISA Power Industry Division Achievement Award

Susan Maley, EPRI

ISA Water/Wastewater Industry Division

2018 WWAC Symposium – Best Presentation Awards:

Summary of the King County, Washington, West Point WWTP Flood of 2017

Brian Lee Mast, PE – Copper Bell Consulting LLC

Leading water utilities who've successfully navigated the digital journey to true smart water

Gary Wong, PE, MBA, CPA – OSIsoft

Keep Those Bioreactor's Bugs Happy at Night: WWTP Flow Equalization Using Existing CSO Sites

Maxym Lachance, P.Eng. – Tetra Tech

Abhishek Bhargava, M.Sc., P.Eng. – EPCOR Water Services

SCADA + Integrated Asset Management = Cost Savings

Alan Hudson – Trihedral Engineering

2018 WWAC Symposium – Best Paper Awards:

Summary of the King County, Washington, West Point WWTP Flood of 2017

Brian Lee Mast, PE – Copper Bell Consulting LLC

Implementing E-Logging at Thames Water Utilities

David Dollar – j5 North America

Anthony Tyler – Thames Water Utilities

Jeremy Westwood – j5 International Ltd.

Pressure Instrumentation Installation Tips for Challenging Applications

David Dlugos – Ashcroft Inc.

Beyond Modbus: Designing SCADA with Other Open SCADA Protocols

Jacob Brodsky, PE – Jacobs, National Security Solutions



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customers to achieve high-impact, cost-effective solutions for their Functional Safety, Alarm Management, and IACS Cybersecurity challenges. As experts in safety, availability, and security, we bring a valuable perspective to the problems they are facing. exida assesses (but not limited to) the various standards: IEC/ISA 62443, IEC 61508, IEC 61511, IEC 61513, IEC 62061, ISO 13849, ISO 26262, NSI/RIA 1506, API 580, ASME B31.8s, EN 50128 / EN 50129, EN 50156 and more.



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InSource's highly experienced and dedicated IT and OT professionals select the best software technologies and platforms for aligning your industrial operations with your desired business outcome, then support your team through training, implementation, start-up, sustained adoption and continuous improvement.

InSource's purpose is to revitalize manufacturing in America. www.insource.solutions



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Tampa Bay Section

ISA Tampa Bay Section covers the Orlando area and southern Florida down to Miami.

Through ISA membership and section involvement, you'll have the opportunity to meet people who speak your language on a local and global level. You'll learn what other companies are doing in your industry and which technical innovations merit your attention. You may even make contacts that lead to new job opportunities and career advancement.





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- automation and control systems vendors
- cybersecurity technology vendors
- IT infrastructure vendors
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- system integrators
- industry organizations
- government agencies
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