

“Beyond SCADA, the Transformation to Operational Technology”

Speaker Biographies and Abstracts

Day 1 – November 20, 2019



Keynote: Data Fulfills the Promise of the Industrial IoT
Presented by: Chris Felts – OSIsoft

Chris is a Senior Strategic Product Manager at OSIsoft focused on the product strategy for the Industrial Internet of Things (IIoT). Chris has 30 years of process automation, data management, and project execution experience having worked in various engineering and product development roles in the power, process, semiconductor and software industries. Chris has a B.S. in Electrical Engineering from Kansas State University, is a co-inventor on numerous patents in the areas of process automation and data integration and is a registered Professional Engineer.

Abstract:

Low cost compute, ubiquitous networking, edge analytics, fog computing, machine learning, artificial intelligence, the cloud... these technologies were born from or came to prominence with the Internet of Things (IoT). They began in the consumer space but soon manufacturers learned the application of these same technologies helped increase production, reduce downtime, lower costs and improve health and safety. The result was the Industrial IoT. These technologies have one thing in common: data. Accessing this data and making better decisions with this data are the keys to success in the Industrial IoT. In this talk, we will discuss how these technologies are making our personal and professional lives better and how we can use this data to solve new business and operational challenges.



Presentation Title: Basic SCADA for Operators
Presented by: William Wong – City of Richmond

William Wong is an Electronics Engineering Technologist Supervisor at the City of Richmond. He leads the SCADA and Radio Communications team who manages the voice and data systems in the operations at the City. With over 20 years of experience in RF Communications and SCADA Systems, William brings technical skills to the City's team. William has worked in many communications projects that involved project managing, selection/purchasing, design, and implementation of City capital and minor-capital projects. William enjoys and is dedicated to his work, which also shows in his passion for SCADA technologies that have been implemented in Richmond.

Abstract:

There is constant changing of landscape in technology for our world today. Have there been changes and what does today's SCADA look like now? For operators, SCADA has come a long way through the vast changes over the years. We will look at an overview of the changes of the SCADA system in infrastructure, systems, communications, and sensors. How does a SCADA system help an operator? How does data flow in a system? What kind of information can a SCADA system provide for operators, maintenance and managers? What SCADA tools are available for Operators today? What role does security play in a SCADA system? How does IIoT mix with SCADA?



Presentation Title: Customized DCS Training in a Technical Age
Presented by: Sandra Kotch – City of Calgary Wastewater Treatment

Sandra has worked at the Bonnybrook Wastewater Treatment Plant for the past 27 years. She began her career as a plant operator and is currently working as the Operations Technical Trainer for the plant. She has an Education degree and Level 4 Wastewater certification in Alberta. For the past five years Sandra has been part of the commissioning team at Bonnybrook, ensuring plant staff have the training they need on new equipment and areas being built as part of the current expansion. She is also working on a training system for operators and her goal is to ensure they are trained faster and more thoroughly than ever before.

Abstract:

Wastewater treatment is becoming more technical and more automated than ever before. This makes operating and monitoring through SCADA systems increasingly important. As regulations become tighter, there is less room for error. Since so much of plant operation is now done through SCADA, learning how to operate equipment through computer systems is important, but isn't always easy. Sandra will talk about how her plant has been dealing with SCADA training over the past several years, how it has evolved, and how they hope to develop it for the future.



Presentation Title: Operations: Cybersecurity, What to Know
Presented by: Andrew Ginter – Waterfall Security Solutions

Andrew Ginter is the VP Industrial Security at Waterfall Security Solutions, leading a team of experts responsible for industrial cyber-security research, contributions to standards and regulations, and security architecture recommendations for industrial sites. Before Waterfall, Andrew led the development of software products for SCADA system, IT/OT middleware, and OT security at Hewlett-Packard, Agilent Technologies and Industrial Defender. He is a co-author of the Industrial Internet Consortium Security Framework and is the author of the books *SCADA Security - What's broken and how to fix it* and *Secure Operations Technology*. Andrew holds a BSc in Applied Mathematics and an MSc in Computer Science, both from the University of Calgary.

Abstract:

Cybersecurity for industrial operations is simpler than it seems. In this presentation, Andrew introduces essential industrial cybersecurity concepts and threats, and looks at what steps each of us take to dramatically improve the cybersecurity of both the smallest and the largest water treatment systems. In this presentation, Andrew draws heavily on material in his 2016 book *SCADA Security – What's broken and how to fix it*. Complementary copies of the book will be available at the show.



Presentation Title: Infrastructure Communications
Presented by: Tom Dunn – WSP Group Canada Ltd.

Tom Dunn is a SCADA and communications specialist with WSP Infrastructure Automation group. Tom has a Senior Engineering Technician's Certificate from the British Columbia Institute of Technology (BCIT). He is a member of the British Columbia Water and Waste Association (BCWWA) where he serves on the BCWWA SCADA & IT committee and the International Society of Automation (ISA). Tom has been with WSP (formerly Opus/Dayton & Knight Ltd.) since 1999 and is involved in Regional Wide Supervisory Control and Data Acquisition (SCADA) systems and wireless communications projects. Prior to WSP, Tom worked for 18 years with Motorola Communications and specialized in integrating RF telemetry systems designed and built by Motorola's Fixed Data Group. He retired from the Canadian Naval Reserve as a Naval Radio Operator and Chief Petty Officer 2nd Class. He is also an advanced amateur radio operator (VE7TD) and a member of the North Shore Emergency Communications Team with Emergency Management BC (EMBC).

Abstract: TBC

Day 2 – November 21, 2019



Presentation Title: Crossnest Pass SCADA Upgrade Case Study
Presented by: Zane Spencer – MPE

Zane is the Vice President of Instrumentation & Controls with MPE Engineering Ltd. A graduate of the Industrial Instrumentation Technology program at the Southern Alberta Institute of Technology, Zane has 16 years of experience in designing, installing, and commissioning process control and SCADA systems. Zane utilizes his knowledge and experience to help municipalities across Western Canada as they address challenges related to modernizing and expanding their process control systems.

Abstract:

The Municipality of Crowsnest Pass faced a number of challenges with their SCADA system including: false or missed alarm notifications, lack of standardized graphics, poor data collection and trending, and cyber-security concerns. In 2017, MPE began work with the Municipality to upgrade the SCADA system, perform a system assessment to overcome these challenges, and rebuild operator confidence in the SCADA system.



Presentation Title: Smart Water Networks Forum (SWAN)
Presented by: Gary Wong – OSIssoft

Gary Wong is the Principal, Global Water Industry at OSIssoft, a leader in real-time operational intelligence. He has over 20 years of extensive international experience providing sustainable, strategic and cost-effective business solutions in the water industry. Prior to joining OSIssoft, he has held positions with Metro Vancouver and as a consultant directing both public and private sectors on Operations, IT strategy, planning, sustainability, and engineering. Mr. Wong is also the Chairman for the Smart Water Networks Forum (SWAN) Americas Alliance and holds a Bachelor's Degree in Chemical Engineering, is registered as a Professional Engineer in Computer Engineering, holds an M.B.A. from the Queen's School of Business and is also a Chartered Professional Accountant.

Abstract:

Have you heard a lot about the term Smart Water and what it is? One place to learn and collaborate with peers locally and around the world is through The Smart Water Networks Forum, the leading global hub for the smart water sector. A UK-based non-profit, SWAN brings together leading international water utilities, solution providers, academics, investors, and other industry experts to accelerate the awareness and adoption of "smart," data-driven solutions in water and wastewater networks worldwide. Several regional alliances are setup around the world and Gary Wong is the Chairman of the Americas Alliance. He'll provide an overview of all the benefits of being a SWAN member including regional events, webinars, networking and world class reports.



Presentation Title: Transitioning to Web-Based Data Visualization Dashboard
Presented by: Peter Hair & Anthony Shaw – Metro Vancouver

Peter Hair (pictured) is a civil engineer with a background in construction and design. Peter joined Metro Vancouver's Sewer and Drainage Operations and Flow Monitoring group in 2018. He has a passion for continuous improvement and has led the implementation effort for the web-based system dashboards, among other collection system optimization initiatives.

Anthony Shaw is currently a supervisor of Sewer and Drainage Operations within Metro Vancouver's Liquid Waste Services Division. Over the past 20+ years in various roles of progressive leadership, Anthony has established how best to listen, promote and encourage perspective and insight within his work groups. His focus over the past few years has been on leadership development competencies and team dynamics within work groups. His teams are encouraged to be creative and proactive in building solutions to their daily challenges. The fostering of relationships and building diverse networks of support have been instrumental in developing his teams including his own success as a leader.

Abstract:

Metro Vancouver operates a network of 530 km of sanitary trunk sewers and 33 pumping stations. The network includes a variety of flow meters, sensors and other sources that generate a large amount of data via SCADA and other communication methods. This data is stored in a centralized data historian, but until recently this data has not been easily accessible to operations staff. With the implementation of PI Vision dashboards, both live and historic system data is now easily viewable via a web browser without any specialized software or training.

These dashboards have become invaluable to front-line operations crews and engineering staff alike for system visualization, assisting with real-time decision making during wet weather events and also for subsequent analysis and reporting. This presentation will include a live demonstration of the PI Vision dashboards.



Presentation Title: Less Time as Data Collectors and More Time as Data Users and Analyzers
Presented by: Mervyn Betts – BettsM Controls

Mervyn Betts is the President of BettsM Controls. Part of the company's mission statement is "We provide lifecycle product solutions...." In order to do this, we need to keep a very close eye on technology so that we can evolve with the revolutionary technology landscape which includes 5G satellite deployment, docker technology, MQTT and data visualization. Mervyn has early experience managing engineering groups, as well as the interfaces between engineering companies on large oil sands pipelines and mining jobs. He has managed channel organizations across Canada and Western United States including Alaska.

His specialties include: Troubleshooting of Telecommunications (wireless and wired), DCS, SCADA and instrumentation as well as system architectures, industrial telecom network design, and negotiations. A key focus of his is data flow and how to optimize and automate the flow of data in an emerging mix media environment. Mervyn is a former VP at Simark Controls and has held Senior Manager and Executive Sales Positions at Emerson, Invensys/Foxboro and Kenonic Controls.

Abstract:

What does our technology future look like for SCADA, telecommunications, data usage, visualization and workflows? What if bandwidth was infinite and latency was zero; how would it change things? In this presentation, we will discuss the basic evolution of telecommunications and how it will impact us in one, three, five and ten years. In order to do this, we will need to delve into some of the current protocols such as Modbus, MDLC, DNP 3.0 and MQTT. We will look at the architectural impact of local data storage versus that of a cloud-based solution. What is a distributed historian versus an edge device? Why one versus the other? Why do data transforms cost money? We will also discuss critical items such as data storage alarming and how better visualization tools and products will positively impact workflow.



Presentation Title: Narrowband RF Solutions for SCADA and Field Area Networks
Presented by: Tisha Hayes – 4RF

Tisha Hayes is a Senior Engineer with 4RF, her responsibilities include: Engineering support, proof of concept testing, testing competing products in head-to-head bench and field conditions and as a liaison to engineering and consulting firms. Tisha has more than 35 years of experience with wireless radio technologies, SCADA RTU's, instrumentation, process control and cyber-security for the electric, water, wastewater and gas utilities. She has designed wireless networks, worked as the project manager on many large deployments, provided on-site engineering field support during commissioning and led the ongoing operations of SCADA networks. A graduate of the University of Illinois, she has collected many industry and vendor specific certifications and is an extra class amateur radio operator.

Abstract:

In recent years, there have been technical advances in wireless technology that now make it possible to transfer much larger amounts of data across the same narrowband radio spectrum that many SCADA systems used for serial data. With these increases in bandwidth, technology can readily support Ethernet communications, multiple communications protocols and shared wireless assets for SCADA, AMI and IoT (internet of things). In this presentation, Tisha Hayes will review the communications technologies used for narrowband and how utilities may build a network that will meet future requirements. Some of the techniques that will be shown can be integrated into the process of setting systems requirements, performance metrics and in developing a project specification.



Presentation Title: Traditional vs. Web-Based SCADA Deployments in Enterprise Systems
Presented by: Jon Sommerfeld – TinBox Energy Software

Jon Sommerfeld is a SCADA Systems Technologist with over 15 years of experience in both the Oil & Gas and Water/Wastewater industries. Jon's previous experience in the municipal water & wastewater field included his time at OPUS DaytonKnight and the City of Burnaby as a SCADA Technologist, during which he was also on the BCWWA SCADA & IT Committee. As a member of the TinBox Energy Software Engineering group, his main focus is on implementing and providing innovative metering and measurement solutions that add value while maintaining compliance and accuracy.

Abstract:

As Integration of SCADA and corporate IS systems increase, so do the challenges and obstacles with traditional SCADA deployments. This session will discuss cloud-based deployments and leveraging web based technologies to help overcome these challenges, while realizing the advantages that can be gained in all areas of your business.



Presentation Title: Operational Technology Training: Making It Work For You
Presented by: Marian Hands – BC Water & Waste Association

Marian is a seasoned professional with over 20 years' experience leading teams in high tech, healthcare and not-for-profit organizations. She started with the BCWWA in 2015 as the Senior Manager of Education, leading the team responsible for all professional development activities offered through BCWWA, including the annual conference, webinars and workshops, and education programs and began her role as Interim CEO in early 2019. She is currently the interim Chief Executive Officer at BCWWA.

Marian is a lifelong learner, earning a B Ed. (University of Alberta), MBA (University of Northern British Columbia) and a variety of other diplomas and certifications in computer programming, leadership, human resources, organizational development and performance improvement management.

Abstract:

How many OT professionals are asked to train their clients or employees on operational technology? How often are those training sessions minimally or not effective? Have you considered the cost of not doing training effectively? This session gives you a framework and some tips and tricks that will help you ensure that the training related to your technology implementation is effective.