



**Montreal**  
Automation • Instrumentation • Control  
Symposium 2018

# A New, Multi-Dimensional Automation Track Experience

Montreal, Quebec, Canada  
Training: 15 October  
Conference: 16–17 October



*Setting the Standard for Automation™*

**ONSITE PROGRAM**

# Keynote Speakers

**Tuesday, 16 October**

1:30 p.m.

Salon Opera

## *Industry 4.0/IloT: Accelerating IT-OT Convergence Within Automation Engineering*



**Normand Dubuc**

GM & VP  
Automation, SNC  
Lavalin



**Damian Smektala**

Lead Automation  
Engineer, SNC Lavalin



**Mr. Dubuc** has more than 30 years of experience in engineering and automation. He has been responsible for numerous industrial automation projects in various fields including material handling, packaging, continuous and batch process control, advanced control systems, MES implementations, as well as new technologies such as Destination Coded Vehicles (DCV) and Process Analytical Technology (PAT) solutions. His past experience also includes project management in the life sciences sector (pharma, biopharma and agrofood). He has also worked at the business development level regarding client relations, engineering team management, company strategy planning, and operations management in firms offering engineering and consultation services.

**Mr. Smektala** is the IloT SME for SNC-Lavalin's Industrial Division and currently heads the automation and digital manufacturing practice in Toronto. He has 13 years of experience in the automation space across a range of industries. He has designed plant-wide process control strategies, OT infrastructure, and SCADA systems in the biopharmaceutical sector.

**Wednesday, 17 October**

1:30 p.m.

Salon Opera

## *The True Value of Digitalization for Industry*



**Dr. Peter Martin**

Senior VP, Schneider  
Electric

**Dr. Martin** has over 37 years experience in industrial control and automation. He has authored numerous articles, technical papers, and books. He holds multiple patents. Fortune named Dr. Martin a "Hero of U.S. Manufacturing." He was also named as one of the "50 Most Influential Innovators of All Time" by *InTech* Magazine and received the Life Achievement Award by the International Society of Automation (ISA). In 2013 Dr. Martin was elected to the Process Automation Hall of Fame and was selected as a Fellow of ISA. In 2017 he was named as one of the "30 Internet of Things Executives Whose Names You Should Know" by CRN. In 2018 he was named to the Measurement, Control and Automation Hall of Fame.

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# Welcome



"As Smart Manufacturing (Industry 4.0) is taking over our industrial world, automation is at the heart of this transformation—automation engineers need to evolve into a new kind of engineer that understand and master the convergence of the IT and OT world. ISA@Montreal will provide you the required information and allow you to meet the people that are leading this effort locally and internationally."

**Andre Michel, Eng.**  
President, Efficient Plant  
[www.efficientplant.com](http://www.efficientplant.com)

## Symposium Committee Members

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# Conference Program

## Tuesday, 16 October

8:00 a.m. – 8:30 a.m. **Registration/Networking/Refreshments**  
8:30 a.m. – 9:00 a.m. **Welcome/Opening Remarks**  
Andre Michel, 2018 ISA@Montreal Chair; Brian Curtis, 2018 ISA President; Maxime Lachance, President, ISA Montreal Section; Bill Dugary, Director, FPID Division

### 9:00 a.m. – 10:30 a.m. SESSION 1

#### Manufacturing Execution Systems Track

Session Chair: *Joe Whyte*

9:00 a.m. – 9:30 a.m. **Personalized Healthcare Requires End-to-End Digital Supply Chain Visibility & Control**  
Joe Whyte, Rockwell

9:30 a.m. – 10:00 a.m. **Scalable Batch—Gain Engineering Efficiencies in Regulated Industries Using Modular Design Techniques**  
Daniel Updyke, Rockwell

10:00 a.m. – 10:30 a.m. **MES/Batch Integration in Life Science Applications**  
Martin Boisvert, Schneider Electric

#### Automatic Controls and Robotics Track

Session Chairs: *Jeff Leverton/Yogesh Balajee/Sandeep Raju*

9:00 a.m. – 9:30 a.m. **Immunity Approach for UAV Position and Velocity Estimation in GPS-Denied Environment**  
Mohanad AlNuaimi, West Virginia University

9:30 a.m. – 10:00 a.m. **Technologies, Trends Driving New Automation, Intelligent Field Capabilities**  
Fred Czubba, AXE Consulting Ltd.

10:00 a.m. – 10:30 a.m. **Methodology to Develop Optimum Control Strategies**  
Maxym Lachance, Tetra Tech

#### Communications Track

Session Chairs: *Sterling Rooke/Penny Chen*

9:00 a.m. – 9:30 a.m. **Development of a Network Analyzer for PROFINET Standard**  
Egidio Raimundo Neto, Inatel

9:30 a.m. – 9:45 a.m. **Communication is Key: Modelling and Implementation for Industrial Production Systems**  
Benedikt Marschall, Food and Packaging Technology

9:30 a.m. – 9:45 a.m. **Event-based Industrial Control with Wireless Devices**  
Mark Nixon, Emerson Automation Systems

10:00 a.m. – 10:30 a.m. **Segregating a Flat Network for Increased Reliability and Security**  
Paul Haughey, BBA

10:30 a.m. – 11:00 a.m. **Networking Break/Exhibition**

### 11:00 a.m. – 12:30 p.m. SESSION 2

#### Manufacturing Execution Systems Track

Session Chair: *Bill Dugary*

11:00 a.m. – 11:30 a.m. **Gradual Implementation of MES Platforms Paving the Way for Industry 4.0**  
David St-Onge, Efficient Plant Inc.

11:30 a.m. – 12:00 p.m. **DuPont's Global Program to Improve Productivity Using OEE**  
James Werner, E.I. DuPont de Nemours & Company

12:00 p.m. – 12:30 p.m. **Beyond OEE – Next Steps for MES**  
Dirk Sweigart, ACE

#### Automatic Controls and Robotics Track

Session Chairs: *Jeff Leverton/Yogesh Balajee/Sandeep Raju*

11:00 a.m. – 11:30 a.m. **Real-Time Analytics with Timeline View for Improved Analytics**  
Steve Zarichniak, Honeywell

11:30 a.m. – 12:00 p.m. **Selecting the Right Advanced Control Approach**  
Michel Ruel, BBA

12:00 p.m. – 12:30 p.m. **Transitioning to Mobile HMIs, The Value of Thin Clients**  
Vryan Constantino, Pnancea Technologies

#### Pulp and Paper Track

Session Chair: *Brad Carlberg*

11:00 a.m. – 11:30 a.m. **Coming in Terms with PID**  
Patrick Dixon, GPA

11:30 a.m. – 12:00 a.m. **A Practical Approach for Process Control Optimization During Startup**  
Marc Tardif, BBA

12:00 p.m. – 12:30 p.m. **APC in the Fiber Line**  
Michel Dion, Honeywell

### 12:30 p.m. – 1:30 p.m. Lunch/Networking/Exhibition

1:30 p.m. – 2:30 p.m. **Welcome Back/Speaker Introduction**  
Andre Michel, 2018 ISA@Montreal Chair

**Official Address/Keynote Presentation**  
Normand Dubuc and Damian Smektala, SNC-Lavalin Industrial Engineering and Construction, Montreal, Quebec, Canada

**Industry 4.0/IIOT: Accelerating IT-OT Convergence Within Automation Engineering**

### 2:30 p.m. – 3:30 p.m. SESSION 3

#### Industry 4.0 Track

Session Chair: *Andre Michel*

2:30 p.m. – 3:00 p.m. **Industry 4.0 & IIoT Pharma Crash Course: The Five Most Important Things You Need to Know About the Digital Revolution**  
Damian Smektala, SNC Lavalin

3:00 p.m. – 3:30 p.m. **Paperless Manufacturing**  
Bob Shiros, Emerson

### Automatic Controls and Robotics Track

Session Chairs: Jeff Leverton/Yogesh Balajee/Sandeep Raju

2:30 p.m. – 3:30 p.m. **I(SA) Robot: A Panel Discussion on the Advances & Best Practices in Robotics & Automation**

### Instrumentation & Process Measurement and Control Track

Session Chair: Joe Joachim

2:30 p.m. – 3:30 p.m. **The Need to Monitor Process Sensors for Security and Safety**  
Joe Weiss, Applied Control Solutions

3:00 p.m. – 3:30 p.m. **Dahlin Control of a Wood Flake Conveyor Dryer**  
Robert Spring, Norbord Inc.

3:30 p.m. – 4:00 p.m. **Networking Break/Exhibition**

4:00 p.m. – 5:30 p.m. **SESSION 4**

### Human Machine Interface Track

Session Chair: Paul Gruhn

4:00 p.m. – 4:30 p.m. **Why HMI?**  
Paul Gruhn, aeSolutions

4:30 p.m. – 5:00 p.m. **Using ISA101 to Improve Operator Effectiveness**  
Mark Nixon, Emerson Automation Systems

5:00 p.m. – 5:30 p.m. **Alarm Management: Every Reaction Deserves an Action**  
Richard Miller, Jacobs Technology Inc.

### Automatic Controls and Robotics Track

Session Chairs: Jeff Leverton/Yogesh Balajee/Sandeep Raju

4:00 p.m. – 4:30 p.m. **Simulate Your Way Out of a Difficult RTC Problem**  
Maxym Lachance, Tetra Tech

4:30 p.m. – 5:00 p.m. **Virtual Commissioning of Industrial Application in a 3D Environment**  
Kash Behdinan, Pointfar Automation LLC

5:00 p.m. – 5:30 p.m. **Development of a Hybrid Digital Control System for a Temperature Plant**  
Egidio Raimundo Neto, Inatel

### Instrumentation & Process Measurement and Control Track

Session Chair: Joe Joachim

4:00 p.m. – 4:30 p.m. **Details of the Motion of Caritation Bubbles Around a Butterfly Valve**  
Kazuihiko Ogawa, Osaka Sangyo University

4:30 p.m. – 5:00 p.m. **Measuring Level with Lasers in Industrial Applications**  
Nicolas Ho, ABB

5:00 p.m. – 5:30 p.m. **Design Implications for IIoT/Open Process Automation to Applications, HMI and Alarms/Alerts/Messages/Notifications**  
Bridget Fitzpatrick, WG Mustang

5:30 p.m. **Reception/Networking/Exhibition**

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## Wednesday, 17 October

8:00 a.m. – 8:30 a.m. **Registration/Networking/Refreshments**  
8:30 a.m. – 9:00 a.m. **Welcome Back/Overview of the Day**  
Kash Behdinan, Director, PMCD Division; Paul Gruhn, 2018 ISA President-Elect/Secretary

9:00 a.m. – 10:30 a.m. **SESSION 1**

### Food Industry Topics Track

Session Chair: Bill Dugary

9:00 a.m. – 9:30 a.m. **Automation in Aseptic Diaphragm Valves—An Era of Continuous Sensing Technology**  
Ketan Pandit, Crane Chempharma & Energy

9:30 a.m. – 10:00 a.m. **More than 3D Vision—Continuous Cut Optimization**  
Alexandre Tessier, Letico Inc.

10:00 a.m. – 10:30 a.m. **Product Track, Trace & Target—“Weighing” Your Profits**  
Alexandre Tessier, Letico Inc.

### Automation Potpourri Track

Session Chair: Andre Michel

9:00 a.m. – 10:30 a.m. **A Study for Increased Energetic Efficiency in Liquid Ring Vacuum Pumps Applied in the Iron Ore Pellitizing Industry Through Instrumentation and Control Strategies**  
Ronan Alves, Vale

9:30 a.m. – 10:00 a.m. **Role of Data Management in Research and Manufacturing**  
Rami Mitri, One Hill Solutions

10:00 a.m. – 10:30 a.m. **AI for Manufacturing**  
Andre Michel, Efficient Plant

### Cybersecurity Track

Session Chair: Ron Brash

9:00 a.m. – 9:30 a.m. **Legal Liabilities of Industrial Cybersecurity for Oil and Gas**  
David Blanco, AutoSol

9:30 a.m. – 10:00 a.m. **Raising Personnel Awareness of ICS Cybersecurity: A Top Priority**  
Marc Potvin, BBA

10:00 a.m. – 10:30 a.m. **Technically Safe: How Technical Controls Create Safety for Industrial Control Systems**  
David Blanco, AutoSol

10:30 a.m. – 11:00 a.m. **Networking Break/Exhibition**

# Conference Program

11:00 a.m. – 12:30 p.m. **SESSION 2**

## Serialization Track

Session Chair: Patrick Boyle

- 11:00 a.m. – 11:30 a.m. **Situational Awareness and Operator Readiness: Human Factors in Automation (Pharmaceutical Serialization Case Study)**  
Patrick Boyle, Skillpad Canada
- 11:30 a.m. – 12:00 p.m. **Serialization Projects in the Pharmaceutical Industry**  
Samuel Hillman, Laporte Experts Conseils
- 12:00 p.m. – 12:30 p.m. **Succeed with Implementation of Serialization**  
Dominic Lecours, Efficient Plant

## Industry 4.0 for Non-Pharma Track

Session Chair: Andre Michel

- 11:00 a.m. – 11:30 a.m. **Quebec's Approach to Industry 4.0 for Small and Medium Enterprise**  
Bernard Boire, Convitec Conseil en Management Inc.
- 11:30 a.m. – 12:00 p.m. **MES Implementation in Small-Medium Manufacturing Companies**  
Jean-Francois Locombe, Adfast Corp.
- 12:00 p.m. – 12:30 p.m. **End-of-Arm Tooling Optimization Using 3D Printing Technology**  
Gilles Desharnais, Axis Prototypes

## Cybersecurity Track

Session Chair: Ron Brash

- 11:00 a.m. – 11:30 a.m. **What if You Can't Patch?**  
Daniel Crum, Owl Cyber Defense Solutions
- 11:30 a.m. – 12:00 p.m. **Patch Management as a Pillar of Security and Data Integrity**  
Will Aja, Panacea Technologies
- 12:00 p.m. – 12:30 p.m. **Cybersecurity Considerations for IIoT**  
Laura Elan, CSA Group

12:30 p.m. – 1:30 p.m. **Lunch/Networking/Exhibition**

- 1:30 p.m. – 2:30 p.m. **Welcome Back/Speaker Introduction**  
Graham Nasby, VP, I&S Department
- Official Address/Keynote Presentation**  
Dr. Peter Martin, Senior VP, Schneider Electric
- The True Value of Digitalization for Industry**

2:30 p.m. – 3:30 p.m. **SESSION 3**

## Food and Pharmaceutical Automation Advanced Topics Track

Session Chair: Bill Dugary

- 2:30 p.m. – 3:00 p.m. **Design and Implementation of a Safety Instrumented System (SIS) in a New Biopharmaceutical Facility**  
Samuel Hillman, Laporte Experts Conseils
- 3:00 p.m. – 3:30 p.m. **Reliable Assets Driving YOUR Business Results**  
Alain Pellegrino, Laurentide Controls

## Construction and Design—Safety Track

Session Chair: Kalpen Vachharajani

- 2:30 p.m. – 3:00 p.m. **Process Safety Management**  
Stephanie Blais, Schneider Electric Systems Canada
- 3:00 p.m. – 3:30 p.m. **Adapting Cause and Effect Methodology to Your Safety Instrumented System (SIS) to Reduce Human Errors from Engineering, Operations, and Beyond**  
Luis Manuel Fernando Garcia, Siemens

## Test and Measurement Track

Session Chair: Marissa Morales

- 2:30 p.m. – 3:00 p.m. **Heat Treatment Performance Optimization with Recurrent Neural Network and Reinforcement Learning**  
Shamik Choudhury, Machine Learning Architect
- 3:00 p.m. – 3:30 p.m. **Practical Applications of FT-NIR and Laser Measurement in the Refinery**  
Allan Rilling, ABB

3:30 p.m. – 4:00 p.m. **Networking Break/Exhibition**

4:00 p.m. – 5:30 p.m. **SESSION 4**

## Food and Pharmaceutical: Advanced Automation Track

Session Chair: Andre Michel

- 4:00 p.m. – 4:30 p.m. **Flexible Manufacturing with Single-Use Systems**  
Mark Givens, Rockwell Automation
- 4:30 p.m. – 5:00 p.m. **The Use of Advanced Process Control (Model Predictive Control) in OSD Continuous Manufacturing**  
Pam Docherty, Siemens

## Construction and Design Track

Session Chair: Ray Vandale

- 4:00 p.m. – 4:30 p.m. **Development of Modeling Elements for a Model-Driven Engineering of Manufacturing Execution Systems in Beverage Filling**  
Xinyu Chen, Technical University Munich
- 4:30 p.m. – 5:00 p.m. **Data Analytics on Existing Control Systems**  
J. Parsons, Jacobs
- 5:00 p.m. – 5:30 p.m. **Navigating the Product Safety Certification Process: How Early Engagement Promotes Project Certainty**  
David Korvah, CSA Group

## Cybersecurity Track

Session Chair: Ron Brash

- 4:00 p.m. – 4:30 p.m. **ICS Security Perimeter Control and Secure Remote Access**  
Gilles Leonard, BBA
- 4:30 p.m. – 5:00 p.m. **Industrial Cybersecurity—Why Should You Care?**  
Gilles Leonard, BBA
- 5:00 p.m. – 5:30 p.m. **Assurance of Industrial Control Systems**  
Ron Brash, Deloitte LLP