



CHEMTECH

THE POWER OF DIGITAL TRANSFORMATION

Working While Digitally Distancing

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Pre-COVID, businesses across the country were working slowly towards digital transformation. The COVID-19 crisis has changed the trajectory of that progress with an unprecedented adoption of digital technologies at multiple levels. The next big wave of disruption is headed our way as companies seek new models and methods to face ongoing economic uncertainty. Join us for this 3-day course as we cover the areas of digital transformation that can make an impact on the enterprise of tomorrow.



Tuesday, July 28: DIGITAL READINGS

Jack Roushey and Allan Peterson discuss Remote Process Monitoring and Digital Service Glasses



Wednesday, July 29: DIGITAL CONTROLS

Don Mack and Ethan Cook cover Digitalization Use Cases Supporting Remote, Connected Workers



Thursday, July 30: DIGITAL MODELING

Ravi Aglave and Simon Leyland talk about Virtual Process Design & Engineering: the key role of digital design and operation for sustainable processes in the post COVID-19 world



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DAY 1

DIGITAL READINGS

Remote Process Monitoring
Digital Service Glasses

Remote Process Monitoring

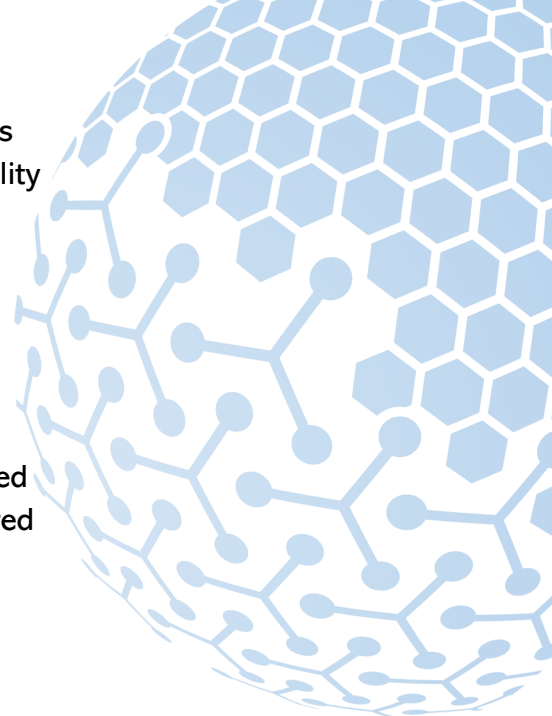
Speaker: Jack Roushey

Why do I need Digitalization and a Remote Monitoring App for my operations? Today's webinar will discuss Remote Monitoring in general with a focus on how process instrumentation can provide the reassurance of best-in-class products, and the precision, integration and reliability in process automation to help you deliver optimum efficiency and productivity. However process measurement by itself will not be enough going forward. Taking control of the information available and putting it in a user friendly format to the right people continues to be the goal of the 21st century. How can you extract what you need and get it to the people who need to see the data and make the appropriate decisions? That, is where Digitalization comes in. Information (including diagnostic information, alarms, alerts & notifications) can and should be uploaded to the cloud and then used to provide you with real time monitoring of multiple assets, retrieving real time data from multiple remote sites for your specifically defined user group, anywhere and anytime whether it's your tablet, pc, iPhone or Android phone.



Jack Roushey is a Marketing Manager for Siemens Process Instrumentation, with current responsibility for SITRANS FM magnetic flow meters. He has worked in the process instrument industry for 45 years and his experience is equally divided between marketing and sales management for multiple flow technologies as well as level,

pressure, temperature and liquid analysis products. Jack has served as chapter president of ISA in the Philadelphia area and has been published in numerous technical journals and magazines. He has also been featured in video interviews and has produced a variety of YouTube videos on various process instrumentation and digitalization topics. Jack has a Bachelor of Arts in Marketing from Eastern University.



Remote Services in an Industrial Environment for Process Instrumentation

Speaker: Allan Petersen

Systems are becoming more and more complex and at the same time there is an increasing pressure on cost: protect yourself and count on the reliable, flexible and economic support solutions - during engineering, when commissioning your field devices as well as during operation. The emphasis is on cost efficiency, reliability, and performance. But what would such a remote service look like in the Process Industry considering all aspects like hardware capable for hazardous areas, software for video/audio collaboration, insurance of data security etc?

The SIPIX remote platform is a combination providing all of this out of the box providing optimum, system-specific support for SIMATIC automation systems and Process Instrumentation from a remote location. As part of the modules offered, you will not only be provided the remote infrastructure but support and maintenance are also already included. The Remote Services are based on Siemens' common Remote Service Platform (cRSP), a secure, high-performance and highly-available remote platform.



Allan Petersen is a Senior Tech Support Engineer for Siemens Process Instrumentation, with current responsibility for SITRANS F flow meters. He has worked in the process instrument industry for 14 years mainly as Technical support, onsite commissioning and troubleshooting. Allan has a Bachelor Sc. EE from University of Southern Denmark.



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DAY 2

DIGITAL CONTROLS

Digitalization Use Cases

Supporting Remote,

Connected Workers

The Digital Transformation has begun—Digitalization Use Cases Supporting Remote, Connected Workers

Speakers: Don Mack and Ethan Cook

Digital transformation is in progress all around us. And the need for such a transformation has been amplified as result of COVID-19. As an ever-increasing number of connected smart devices are installed in industrial manufacturing plants, the opportunity to safely and securely collect additional data pertaining to key assets and their operating environment has suddenly become a reality. Okay, but once this data is collected, what happens to it? Often, it's left lying dormant in the plant's historical database rather than being converted into information that can be transformed into knowledge from which actionable decisions can be made that positively impact the bottom line. This presentation will cover several use cases where data is being collected and analyzed and ultimately used by remote connected workers to maximize uptime and plant performance.

Attendees will learn:

- Data can be remotely connected and converted into information, information into knowledge, and knowledge into actionable decisions.
- Tools are available today to address a variety of operations and maintenance use cases.
- Use case examples that will be discussed include:
 - Process equipment (e.g. compressors, pumps) predictive maintenance
 - Control loop performance
 - Alarm management—Ongoing monitoring, assessment, and improvement
 - Control valve monitoring and predictive maintenance
 - Automation system health and lifecycle monitoring
 - Connected worker safety and performance improvement



Don Mack is an Industry Manager and Automation Alliance Manager with Siemens. During Don's 30+ years with Siemens, he has held roles in pre-sales technical support, marketing, sales and business development. In his current Industry Manager role, Don is focused on finding process automation and digitalization solutions for Siemens customers and presents in industry and web conferences on a regular basis. In his Alliance Manager role, Don works closely on a global basis with one of Siemens' key customers in the

chemical industry, providing technical education and support to the company's plant and corporate personnel. Don graduated with a BS in Electrical Engineering from the University of Pittsburgh.



Ethan Cook is an Application Engineer with a focus on process automation and digitalization in the chemical industry. During Ethan's eight years with Siemens, he has been able to work with a wide range of Siemens Industry products. Ethan previously worked as part of the PCS 7 project execution team, where he engineered and implemented projects for a variety of US customers. He brings that experience into his current role in order to help customers find the best overall solution for their automation needs. Ethan

graduated with a BS in Electrical Engineering from Penn State University.



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DAY 3
DIGITAL MODELING
Virtual Process Design
and Engineering

Virtual Process Design and Engineering: The key role of digital design and operation for sustainable processes in the post COVID-19 world

Speakers: Ravi Aglave and Simon Leyland

Creating and operating sustainable processes and products inevitably involves trade-offs that reconcile production, safety, profitability and sustainability objectives to minimize plant emissions and energy, water and other resource usage while achieving a range of production KPIs. In today's challenging environment, it is even more important to be able to reduce the time and cost of the design of such processes and to be able to make quicker decisions once the process is operational. This has to be achieved with an increasingly remote workforce, both in the R&D centers and on the process site.

A digital design approach utilizes high-fidelity, predictive process models validated against experimental or pilot plant data to rapidly and effectively explore the process design space so that

such decisions can be taken based on accurate quantification of the options. Key technologies are large scale Mixed Integer Nonlinear Programming (MINLP) optimization, Global System Analysis (GSA) and Computational Fluid Dynamics (CFD). MINLP optimization enables determination of the optimal value of multiple decision variables simultaneously while ensuring that equipment, process constraints, and safety constraints are observed. GSA allows rigorous quantification of the risk associated with the resulting optimal process design. Detailed models based on CFD analysis aids in the design and scale up of key unit operations.

Once the process is operational, the knowledge captured and investment made in digital design continues to bring value. A digital process twin from the design phase can be used to train operators remotely via a virtual plant for operator training. The model can be taken online and combined with plant data to continuously optimize, monitor, and predict future plant behavior, thus reducing the number of on-site personnel required. As the online model is in the cloud, this can all be monitored remotely.

This presentation describes the digital design approach currently being applied throughout the entire lifecycle of sustainable processes, from R&D, through design and operation, briefly illustrated with real-world case studies.



Dr. Ravindra Aglave leads the energy and process industry sector in the Simulation & Test Solutions business unit at Siemens. He directs the efforts of solving challenging chemical engineering and transport phenomenon problems in the chemical and allied industries. He is responsible for bringing new modeling and physics knowledge in to CFD simulation code that can be deployed in the industry.

Dr. Aglave has over 20 years of research and engineering experience in academia and industry in the area of reactor design, scale-up and troubleshooting. His expertise includes computational fluid dynamics (CFD), mixing & reaction engineering,



Simon Leyland is a Principal Consultant at PSE and Head of the Technology Services Group for the Energy & Chemicals Business Unit, managing a team of engineers that provide consulting services and software support to PSE's commercial clients.

Simon has over 18 years' experience in the application of advanced process modeling in a wide range of fields including relief and blowdown systems, fuel cells, separation processes and papermaking. Prior to his current position, he was part of the Oil & Gas group focusing on safety applications and served as a member of the API subcommittee on pressure relieving systems.