OCTOBER 24, 2023

Building a connected future for process industries

From engineering to operations

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Welcome to the process industries track

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Agenda

1. What to expect and team introduction

2. Common challenges faced by process industries

3. Chemicals focus

4. Mining, metals, and minerals (MMM) focus

5. Pulp, paper, and forest products (PPFP) focus

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What can you expect over the next three days?

- 20+ presentations from customers across the process industries space:
  - Chemicals
  - Mining, minerals and metals (MMM)
  - Pulp, paper, and forest products (PPFP)

- Huge breadth of topics spanning the full spectrum of the AVEVA portfolio, beginning with engineering and moving onto operate and optimize

- Five-minute Q&A sessions at the end of each presentation for you to ask those burning questions

- *Data quality to support AI* - an exciting panel discussion at 3:50pm on day two

Process Industries Track Team introduction

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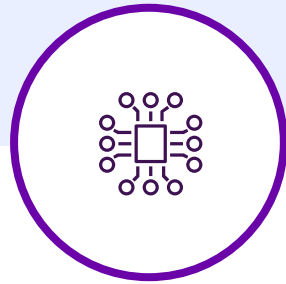
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Common challenges faced by process industries

Price pressure and rising cost

- **65%** of agrochemicals leaders say reducing operational costs is their first business priority[1]

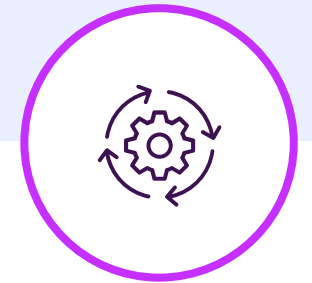- **16x** more rock and energy are required to produce copper today than back in 1900[2]

Workforce disruption

- **25%** of the chemical industry's workforce will likely retire in the next five years[3]

- Integrating and optimizing technologies can realize a **50%** people improvement in the mining industry[4]

- **56%** of paper companies are concerned about retiring workforce and loss of knowledge[5]

Environmental social governance

- **58%** of chemicals CEOs see sustainability and circular economy as the priority for investing[6]

- **83%** of mining and metals CEOs see meeting customer expectations a factor to meet their net-zero commitment[7]

- **46%** of the electricity consumed by European paper mills is offset by electricity production[8]

Digital improvement potential

- **51%** of mining and metals execs have a digital priority for Process Intelligence and Automation[9]

- **5-10%** throughput gains and savings on materials, chemicals and energy when innovating with digital solutions[10]

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Process industries – required capabilities

Enhance agility and resilience	Improve quality and compliance	Minimize environmental footprint	Increase productivity
Continuous optimization	Production execution	Energy management	Reduce and control costs
Access anywhere	Compliance	Transparency and traceability	Equipment efficiency
"Improved operational efficiency by **10%**."	"Product consistency, quality and delivery improved by **125%**."	"**9%** reduction of energy usage."	"Increase asset utilization by 10% and improve yield by **30%**."

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Chemicals

Your chemicals contacts at AVEVA World

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Where do chemicals companies find value?

Hazard recognition

- Track total energy costs and usage
- Hazard recognition and assessment
- Compliance tracking and notification
- Alarm and interlock monitoring
- System of record

Asset health and optimization

- Real-time monitoring
- Proactive and condition-based maintenance
- Maintain asset performance
- Reduce plant/asset shutdowns
- Reduce Opex/Capex
- Integration with predictive analytics and CMMS
- Capture of manual inspection data

Operations and supply chain

- Situational awareness
- Batch optimization
- Reduce/eliminate off-spec batches
- Quality accuracy
- Reliable heat and material balance
- Integration with modelling data and LIMS
- Integration to MES and ERP systems
- Capture of manual operator rounds

Operations intelligence

- KPI calculation
- Scalability of good practices across the plant and business
- Integration with BI and analytics
- Remote monitoring and seamless collaboration
- Knowledge retention

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Chemicals Agenda

Day	Time	Track	Session	Presenters
1	2.10pm–2.40pm	**Process industries**	**Wacker Chemie AG**: The path to efficient, consistent processing of 3D plant models in the cloud	Thomas Mairhofer, Joseph Greear – Wacker Chemie
1	3.50pm–4.20pm	**Process industries**	**BASF**: How shift teams use AVEVA™ PI System™ to collaborate and boost asset utilization	Michael Eckardt - BASF Andreas Eschbach - eschbach
2	8.00am–8.30am	PI System user Rm 2001-2003	Nutrien & KBR: Leveraging SME expertise: Using AVEVA Unified Operations Center with AVEVA PI Server data across 13 sites	David Owens, KBR
2	9.20am–9.50am	**Process industries**	**Albemarle**: Economies of scale with the PI System and AI: the world's top lithium producer shares its journey	Jonathan Alexander – Albemarle
2	1.30pm–2.00pm	**Process industries**	**Cyanco**: Journey to predictive maintenance with AVEVA™ PI System™	Anurudh Vinayak - Cyanco
2	3.50pm–5.00pm	**Process industries**	**Panel discussion**: Data quality to support AI within process industries	Jonathan Alexander - Albemarle Jane Arnold - Aperio Martin Lilja - New Boliden Richard Smith Jr - International Paper

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Chemicals Agenda

Day	Time	Track	Session	Presenters
3	11.25am–11.55am	**Process industries**	**AGC**: Development of process simulation–based digital twin and how AVEVA™ PI System™ helped	Kosuke Nakai – AGC Inc. Ryosuke Kobayashi – AGC Inc.
3	1.30pm–2.00pm	**Process industries**	Maximize your operational excellence with AVEVA™ Process Simulation and scripting automation: A digital twin story by **Thyssenkrupp Uhde GmbH** and **AVEVA**	Stefan Millhoff - AVEVA Ryan Muir - AVEVA
3	2.10pm–2.40pm	**Process industries**	**Alteragreen**: Feasibility case study on the mitigation of carbon dioxide emissions from an ammonia synthesis plant via green methanol and dimethyl ether synthesis in Coffeyville, KS	Fernando Fuentes - Alteragreen Timothy Lucey - Alteragreen Nicholas Shkolnikov - Alteragreen
3	2.50pm–3.20pm	**Process industries**	**Tri-Sen Systems** Corporation transforming operation: elevating compressor control systems and operator training with AVEVA dynamic simulation solutions	Jim Jacoby – Tri-Sen Corporation
3	3.30pm–4.00pm	**Process industries**	**Elkem**: How we work with AVEVA™ Unified Operations Control as part of our HMI system	Harry Gulestøl - Elkem ASA, Silicon Products

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Mining, minerals, and metals (MMM)

Your MMM contacts at AVEVA World

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Where do mining companies find value?

Process productivity

- Remote operations
- Real-time/condition process monitoring
- Ad-hoc visualization/ real-time trending
- Material flow, pacing, and supply chain
- Autonomous operations

Energy and water

- Real-time energy and water monitoring
- Reduce fuel/coal/ propane consumption
- Mobile equipment fuel efficiency

Asset reliability

- Improve uptime and reduce unplanned downtime
- Real-time equipment monitoring
- Condition-based and predictive maintenance

Environment health and safety

- Real-time environment, health, and safety monitoring
- Governmental regulations
- Accidents and incidents
- Compliance and audit

Quality assurance

- Real-time monitoring
- Root-cause analysis and prevention of excursions
- Genealogy / product history
- Yield improvement

KPIs and reporting

- Plant-wide to enterprise visibility
- Common definitions and calculations
- Benchmarking and comparison
- Dashboards and KPI reporting

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MMM Agenda

Day	Time	Track/Room	Session	Presenters
1	2.50pm–3.20pm	**Process industries**	Rio Tinto: Digital project delivery for capital projects - status update and conveyor design utility demonstration	Paul Rushton, Rio Tinto
1	5.00pm–5.30pm	HMI/SCADA user Rm 2009	Martin Marietta: Streamlining system maintenance with unattended AVEVA System Platform client installs	Brian Linzer, Martin Marietta
2	8.00am–8.30am	PI System user Rm 2001-2003	Nutrien & KBR: Leveraging SME expertise: Using AVEVA Unified Operations Center with AVEVA PI Server data across 13 sites	David Owens, KBR
2	8.40am–9.10am	HMI/SCADA user Rm 2009	Standardizing Rio Tinto's large-scale mine operations	Michael Bargiev, Rio Tinto Iron Ore, Gordon Tsen, Rio Tinto Iron Ore
2	10.20am–10.50am	**Process industries**	Pollution prevention and net zero carbon: Vale's digital journey to achieve sustainable goals	Luciane Moreira, Vale Thayse Rodrigues, ihm Stefanini Yan Marques, ihm Stefanini
2	11.00am–11.30am	**Process industries**	Quebec Iron Ore improves reliability of critical assets and enhance traceability from pit to port advancing on their digital roadmap	Yans Côté, Quebec Iron Ore Nicolas Toupin, Quebec Iron Ore

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MMM Agenda

Day	Time	Track	Session	Presenters
2	3.50pm–4.20pm	**Process industries**	PANEL discussion: Data quality to support AI within process industries	Jane Arnold, Aperio Jonathan Alexander, Albemarle
2	4.30pm–5.00pm	Industrial AI Rm 2022-2024	ASARCO: Digital transformation at Ray Mine (AVEVA PI System and AVEVA Predictive Analytics)	Jessica Ewy, Casne Engineering Bill Lundy, Asarco
2	11.40am–12.10pm	**Process industries**	Rio Tinto and Accenture, Project Success Story, AVEVA Production Management (Ampla) and PI Historian: better together	Cedric Brown, Accenture Ross Finnie, Accenture
2	1.30pm–2.00pm	Ecosystem Rm 2004	Sharing data across the Quebec Iron Ore´s IT and OT ecosystems with AVEVA's cloud technologies	Yans Côté, Quebec Iron Ore Nicolas Toupin, Quebec Iron Ore
2	2.10pm–2.40pm	**Process industries**	Norsk Hydro: Asset Performance Management	Pedro Costa, Norsk Hydro Sandy Lopes, Norsk Hydro Rafael Cruz, Radix

Pulp, paper and forest products, PPFP

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Your pulp, paper and forest products contacts at AVEVA World

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Where do pulp, paper and forest products companies find value

Process productivity

- Operational awareness throughout manufacturing process
- Root-cause analysis for reducing web or sheet breaks
- Improving efficiencies like wash-up cycles
- Automated KPI calculation (OEE by grade, etc)
- Waste minimization
- Increase pulp production and recovery boiler capacity

Asset health

- Manual equipment inspections
- Recurring fault detection and diagnosis
- Vibration analysis
- Condition-based maintenance
- Fast data retrieval for predictive modeling
- Predictive alarms and prescriptive actions
- Digital twin support

Quality assurance

- Quality/operating parameter correlation for improved change-over time, recipe compliance, and new product run stability
- Center-lining or run-to-target dashboards
- Profile data analysis
- Data support for ML-driven product quality prediction
- Decrease Kappa variability

Energy and water use

- Energy and water consumption visualization by grade or product
- Chemicals recovery cycle and steam production analysis
- Energy consumption modelling for purchase analysis
- Refiners energy draw
- Heat exchangers/ boilers fouling effects
- Reduce steam, energy and chemicals consumption

Environmental compliance

- Safety alarms and alerts
- System of record for air (NOx, SOx, CO2) and water emissions (pH, COD and BOD) reporting
- Secure data availability and reporting for auditors and regulators
- Data availability for particle dispersion models, e.g. total reduced sulphur (TRS) particles

Connected value chain

- Operational performance benchmarking of business units, assets, and critical equipment
- Secure data sharing across business units, suppliers, and clients
- Data-driven demand volatility response
- Quick integration of operational KPIs during M&A

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Pulp and Paper Agenda

Day	Time	Track	Session	Presenters
1	4.30pm–5.00pm	**Process industries**	International Paper: Using AVEVA™ PI System™ as a process degradation early warning system—Planning and execution	Richard Smith Jr, International Paper
2	8.00am–8.30am	**Process industries**	International Paper: Our equipment health journey—connecting AVEVA™ PI System™ to AVEVA™ Predictive Analytics	Allen Turner, International Paper
2	8.40am–9.10am	**Process industries**	Mondi Group: Visplore GmbH advanced condition monitoring of critical assets with AVEVA™ PI System™	Daniel Klampfere, Clemens Deiser, Harald Piringer Mondi Group, Visplore GmbH
2	2.50pm–3.20pm	Industrial AI Rm 2022-2024	International Paper: Our equipment health journey-- Integrating AVEVA™ Predictive Analytics into our workflow	Allen Turner, International Paper Alex Jenkins, AVEVA
2	2.50pm–3.20pm	**Process industries**	Kruger: Using AVEVA™ PI Vision™ to display a profile view of a sheet	Marc Cote, Dominique St-Pierre Kruger
3	10.45am–11.15am	**Process industries**	Kruger: AVEVA™ PI System™ points creation training and hiring challenges	Marc Cote, Dominique St-Pierre Kruger

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Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

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