Building a connected future for process industries

From engineering to operations

Naveen Kumar - AVEVA
Omar Al - AVEVA
Max McKay - AVEVA
Welcome to the process industries track

Naveen Kumar

Vice President, Chemicals and MMM
AVEVA

Naveen.Kumar@aveva.com
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
What can you expect over the next three days?

• 20+ presentations from customers across the process industries space:
  o Chemicals
  o Mining, minerals and metals (MMM)
  o 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

Naveen Kumar  
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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
- 16x more rock and energy are required to produce copper today than back in 1900

Workforce disruption

- 25% of the chemical industry’s workforce will likely retire in the next five years
- Integrating and optimizing technologies can realize a 50% people improvement in the mining industry
- 56% of paper companies are concerned about retiring workforce and loss of knowledge

Environmental social governance

- 58% of chemicals CEOs see sustainability and circular economy as the priority for investing
- 83% of mining and metals CEOs see meeting customer expectations a factor to meet their net-zero commitment
- 46% of the electricity consumed by European paper mills is offset by electricity production

Digital improvement potential

- 51% of mining and metals execs have a digital priority for Process Intelligence and Automation
- 5-10% throughputs gains and savings on materials, chemicals and energy when innovating with digital solutions

Sources:
Process industries – required capabilities

**Enhance agility and resilience**
- Continuous optimization
  - Access anywhere
    - “Improved operational efficiency by 10%.”

**Improve quality and compliance**
- Production execution
  - Compliance
    - “Product consistency, quality and delivery improved by 125%.”

**Minimize environmental footprint**
- Energy management
  - Transparency and traceability
    - “9% reduction of energy usage.”

**Increase productivity**
- Reduce and control costs
  - Equipment efficiency
    - “Increase asset utilization by 10% and improve yield by 30%.”

“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%.”
Chemicals
Your chemicals contacts at AVEVA World

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Reena Bayley
Senior Industry Marketing Manager, Chemicals
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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
<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
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<th>Session</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.10pm–2.40pm</td>
<td>Process Industries</td>
<td><strong>Wacker Chemie AG</strong>: The path to efficient, consistent processing of 3D plant models in the cloud</td>
<td>Thomas Mairhofer, Joseph Greear – Wacker Chemie</td>
</tr>
<tr>
<td>1</td>
<td>3.50pm–4.20pm</td>
<td>Process Industries</td>
<td><strong>BASF</strong>: How shift teams use AVEVA™ PI System™ to collaborate and boost asset utilization</td>
<td>Michael Eckardt - BASF Andreas Eschbach - eschbach</td>
</tr>
<tr>
<td>2</td>
<td>8.00am–8.30am</td>
<td>PI System user Rm 2001-2003</td>
<td>Nutrien &amp; KBR: Leveraging SME expertise: Using AVEVA Unified Operations Center with AVEVA PI Server data across 13 sites</td>
<td>David Owens, KBR</td>
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<tr>
<td>2</td>
<td>9.20am–9.50am</td>
<td>Process Industries</td>
<td><strong>Albemarle</strong>: Economies of scale with the PI System and AI: the world’s top lithium producer shares its journey</td>
<td>Jonathan Alexander – Albemarle</td>
</tr>
<tr>
<td>2</td>
<td>1.30pm–2.00pm</td>
<td>Process Industries</td>
<td><strong>Cyanco</strong>: Journey to predictive maintenance with AVEVA™ PI System™</td>
<td>Anurudh Vinayak - Cyanco</td>
</tr>
<tr>
<td>2</td>
<td>3.50pm–5.00pm</td>
<td>Process Industries</td>
<td><strong>Panel discussion</strong>: Data quality to support AI within process industries</td>
<td>Jonathan Alexander - Albemarle Jane Arnold - Aperio Martin Lilja - New Boliden Richard Smith Jr - International Paper</td>
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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 |
Mining, minerals, and metals (MMM)
Your MMM contacts at AVEVA World

Max McKay
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Where do mining companies find value?

<table>
<thead>
<tr>
<th>Process productivity</th>
<th>Energy and water</th>
<th>Asset reliability</th>
<th>Environment health and safety</th>
<th>Quality assurance</th>
<th>KPIs and reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Remote operations</td>
<td>• Real-time energy and water monitoring</td>
<td>• Improve uptime and reduce unplanned downtime</td>
<td>• Real-time environment, health, and safety monitoring</td>
<td>• Real-time monitoring</td>
<td>• Plant-wide to enterprise visibility</td>
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<td>• Real-time/condition process monitoring</td>
<td>• Real-time equipment monitoring</td>
<td>• Root-cause analysis and prevention of excursions</td>
<td>• Root-cause analysis</td>
<td>• Common definitions and calculations</td>
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<td>• Ad-hoc visualization/real-time trending</td>
<td>• Mobile equipment fuel efficiency</td>
<td>• Governmental regulations</td>
<td>• Genealogy/product history</td>
<td>• Benchmarking and comparison</td>
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<td>• Material flow, pacing, and supply chain</td>
<td>• Condition-based and predictive maintenance</td>
<td>• Accidents and incidents</td>
<td>• Yield improvement</td>
<td>• Dashboards and KPI reporting</td>
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<td></td>
<td>• Autonomous operations</td>
<td></td>
<td>• Compliance and audit</td>
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<table>
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<tr>
<td>1</td>
<td>2.50pm—3.20pm</td>
<td>Process industries</td>
<td>Rio Tinto: Digital project delivery for capital projects - status update and conveyor design utility demonstration</td>
<td>Paul Rushton, Rio Tinto</td>
</tr>
<tr>
<td>1</td>
<td>5.00pm—5.30pm</td>
<td>HMI/SCADA user Rm 2009</td>
<td>Martin Marietta: Streamlining system maintenance with unattended AVEVA System Platform client installs</td>
<td>Brian Linzer, Martin Marietta</td>
</tr>
<tr>
<td>2</td>
<td>8.00am—8.30am</td>
<td>PI System user Rm 2001-2003</td>
<td>Nutrien &amp; KBR: Leveraging SME expertise: Using AVEVA Unified Operations Center with AVEVA PI Server data across 13 sites</td>
<td>David Owens, KBR</td>
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<tr>
<td>2</td>
<td>8.40am—9.10am</td>
<td>HMI/SCADA user Rm 2009</td>
<td>Standardizing Rio Tinto's large-scale mine operations</td>
<td>Michael Bargiev, Rio Tinto Iron Ore, Gordon Tsen, Rio Tinto Iron Ore</td>
</tr>
<tr>
<td>2</td>
<td>10.20am—10.50am</td>
<td>Process industries</td>
<td>Pollution prevention and net zero carbon: Vale’s digital journey to achieve sustainable goals</td>
<td>Luciane Moreira, Vale Thayse Rodrigues, ihm Stefanini Yan Marques, ihm Stefanini</td>
</tr>
<tr>
<td>2</td>
<td>11.00am—11.30am</td>
<td>Process industries</td>
<td>Quebec Iron Ore improves reliability of critical assets and enhance traceability from pit to port advancing on their digital roadmap</td>
<td>Yans Côté, Quebec Iron Ore Nicolas Toupin, Quebec Iron Ore</td>
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</tbody>
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## MMM Agenda

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

**Omar F. Ali, Ph.D**  
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**Martina Balzan**  
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Martina.Balzan@aveva.com
### 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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<td>4.30pm–5.00pm</td>
<td>Process industries</td>
<td>International Paper: Using AVEVA™ PI System™ as a process degradation early warning system—Planning and execution</td>
<td>Richard Smith Jr, International Paper</td>
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<td>2</td>
<td>8.00am–8.30am</td>
<td>Process industries</td>
<td>International Paper: Our equipment health journey—connecting AVEVA™ PI System™ to AVEVA™ Predictive Analytics</td>
<td>Allen Turner, International Paper</td>
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<tr>
<td>2</td>
<td>8.40am–9.10am</td>
<td>Process industries</td>
<td>Mondi Group: Visplore GmbH advanced condition monitoring of critical assets with AVEVA™ PI System™</td>
<td>Daniel Klampfer, Clemens Deiser, Harald Piringer, Mondi Group, Visplore GmbH</td>
</tr>
<tr>
<td>2</td>
<td>2.50pm–3.20pm</td>
<td>Industrial AI Rm 2022-2024</td>
<td>International Paper: Our equipment health journey—Integrating AVEVA™ Predictive Analytics into our workflow</td>
<td>Allen Turner, International Paper, Alex Jenkins, AVEVA</td>
</tr>
<tr>
<td>2</td>
<td>2.50pm–3.20pm</td>
<td>Process industries</td>
<td>Kruger: Using AVEVA™ PI Vision™ to display a profile view of a sheet</td>
<td>Marc Cote, Dominique St-Pierre Kruger</td>
</tr>
<tr>
<td>3</td>
<td>10.45am–11.15am</td>
<td>Process industries</td>
<td>Kruger: AVEVA™ PI System™ points creation training and hiring challenges</td>
<td>Marc Cote, Dominique St-Pierre Kruger</td>
</tr>
</tbody>
</table>
Questions?

Please wait for the microphone.
State your name and company.

Please remember to...

Navigate to this session in the mobile app to complete the survey.

Thank you!
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AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

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.

Learn more at www.aveva.com"