



Future of Manufacturing Briefing

Possible to Practical



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Accessible, practical, scalable



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Join us at “Possible to Practical”

to explore how modern AI tool sets and user-friendly interfaces revolutionise how manufacturing professionals engage with data and technology. We'll discuss how advanced systems can seamlessly integrate predictive analytics and real-time insights into everyday operations, empowering teams to make smarter decisions without needing specialised technical knowledge.

User-Friendly Interfaces and Tools

One of the key challenges in adopting new technologies in manufacturing has been the complexity of the tools used to gather and analyse data. Many systems require deep expertise in data science, which can be a barrier to entry for continuous improvement leaders and reliability engineers (amongst others). This event will showcase solutions focusing on simplicity, ensuring that everyone—from operations managers to reliability engineers—can benefit from powerful tools through role-appropriate, intuitive, user-friendly interfaces.

Companies can provide actionable insights without relying on complex code or difficult-to-understand mathematical models by taking advantage of analysis tools that connect easily to all of the data relevant to a use case, make the process and results of applying ML easy to visualise, and make the “answers” something that fits neatly into the systems that run the plant - SCADAs, dashboards and MES platforms.

Learning Part of Analytics

Another focus will be on how modern tools make data science accessible to those without specialised technical knowledge. GE has pioneered ways to empower normal working and reliability engineers to engage with complex analytics without needing a background in data science. You'll get a first-hand view of the investigation process - from outlining a use case to mapping in the mix of data sets that may form part of a solution through validating the insights generated by the ML algorithms. No obscure strings of code or complex formulations are required—just an understanding of the actual asset or process and familiarity with where relevant data is available.

Bringing Advanced Insights to Everyday Operations

At this event, you'll see how advanced systems are bridging the gap between complex analytics and day-to-day operations. We'll demonstrate how drag-and-drop functionality, simple user interfaces, and integration with real-time systems like SCADA allow for faster, more efficient decision-making. Whether you're managing asset reliability, addressing alarms, or optimising production processes, the right tools can make all the difference.

By the end of the event, you'll have a clear understanding of how modern, scalable AI tools can transform your operations, making data science accessible to all and ensuring that insights are delivered where they matter most: in the environments that you and your team work in every day. Don't miss this opportunity to see how these technologies are shaping the future of manufacturing and operational efficiency.



Integration with Existing Systems

A central theme of the event will be integrating new technologies with existing systems. Our mission is to ensure valuable insights do not “die in the hands of a mathematician” or get stuck in a cloud environment like Azure, disconnected from day-to-day operations. Instead, insights need to be delivered where they are most needed: back into the hands of operators and engineers working on the shop floor or in control rooms.

Seamless integration with systems like SCADA is critical for ensuring that insights are actionable and practical in real time. This event will demonstrate how advanced tools can be integrated with legacy systems and processes, ensuring that new insights are fed directly into decision-making environments.

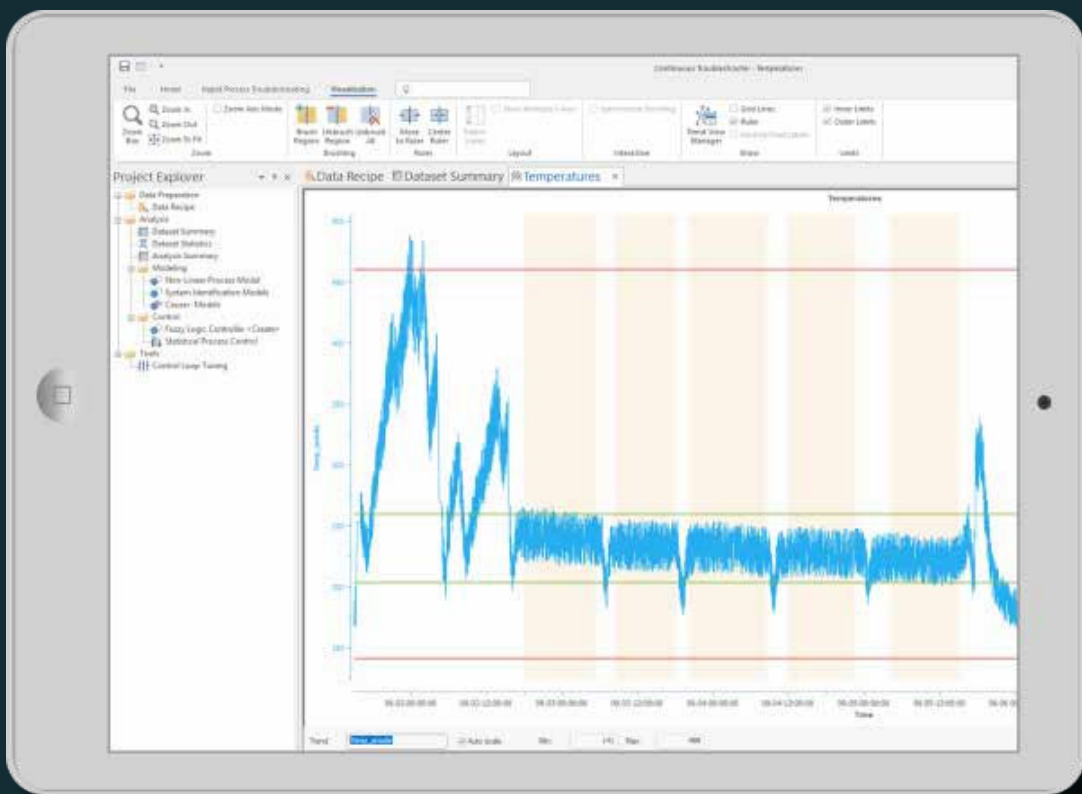
Scalability and Flexibility in Action

Scalability and flexibility ensure that AI-driven insights have a real-world impact. In some cases, manufacturing environments require a real-time engine to process insights and feed them directly into operational systems, such as SCADA (Supervisory Control and Data Acquisition). These systems allow operators to monitor and control industrial processes in real time, ensuring that insights generated from AI or predictive analytics can be applied immediately.

The right approach will allow for flexibility in both the learning approach and in how a number of use cases can be handled with a common set of tools.

AI-Powered Insights

Leading platforms leverage artificial intelligence (AI) and machine learning to provide crucial insights into manufacturing processes. AI platforms integrate seamlessly with existing systems to harness the power of data to enhance operational efficiency, product quality, and decision-making,



Advanced Data Analytics

AI platforms utilise advanced data analytics to transform raw data into actionable insights. By collecting and analysing data from various sources within the manufacturing process, AI identifies patterns, trends, and anomalies that are not easily detectable through traditional methods. This comprehensive data analysis enables manufacturers to understand the underlying factors affecting their operations and make informed decisions to optimise performance.

Solution Spotlight

Predictive Maintenance

One of the key uses of AI powered platforms is predictive maintenance. Using AI algorithms, the platform analyses historical and real-time data to predict equipment failures before they occur. This proactive approach allows manufacturers to schedule maintenance during planned downtimes, reducing unexpected breakdowns and extending the lifespan of their equipment. Predictive maintenance not only enhances productivity but also significantly reduces maintenance costs.

Anomaly Detection

AI excels in detecting anomalies within manufacturing processes. Analytics continuously monitor data streams to identify deviations from normal operating conditions. When an anomaly is detected, the system alerts operators, enabling them to investigate and address potential issues before they escalate. This early detection helps maintain product quality and ensures consistent production standards.

Process Optimisation

Process optimisation is another critical benefit of AI platforms. The platform provides detailed insights into process performance, highlighting areas where improvements can be made. By analysing a mix of data, such as ingredient characteristics, end-to-end process data, and explicit test/outcome data, AI can identify where changes in recipes, material specifications, or process control can deliver improvements in quality and yield.

Enhanced Decision-Making

AI platforms support enhanced decision-making by providing a clear, data-driven understanding of manufacturing operations. The platform's intuitive dashboards and visualisation tools present complex data in an easily interpretable format, allowing decision-makers to quickly grasp key insights and make strategic decisions. This real-time visibility into operations fosters a proactive management approach, driving continuous improvement and competitive advantage.

Integration and Scalability

Leading AI platforms integrate seamlessly with existing manufacturing systems, ensuring a smooth implementation process. A scalable architecture allows platforms to grow with the needs of the business, accommodating increasing data volumes and expanding operational requirements. This flexibility ensures that manufacturers can continue to leverage the benefits of advanced analytics as their operations evolve.

AI analytics provide key insights that drive operational excellence in manufacturing. From predictive maintenance and anomaly detection to process optimisation and enhanced decision-making, the platform empowers manufacturers to harness the full potential of their data. By integrating AI platforms, manufacturers can achieve significant improvements in efficiency, quality, and profitability, positioning themselves for long-term success in a competitive market.

UNS – a new approach to harmonising OT data with non-OT uses

The Unified Namespace (UNS) concept is revolutionising the manufacturing industry by providing a centralised data architecture that integrates disparate systems into a cohesive, real-time information framework.

For manufacturing leaders, understanding UNS is crucial for driving efficiency, agility and innovation in operations.

At its core, UNS acts as a single point of truth for all data generated across the manufacturing enterprise. Traditionally, manufacturers have struggled with siloed data sources, where information from machines, sensors, enterprise resource planning (ERP) systems, and other software tools are isolated, making it challenging to achieve a holistic view of operations. UNS addresses this by consolidating these data streams into one unified data layer accessible in real time.

The implementation of UNS leverages modern technologies such as MQTT (Message Queuing Telemetry Transport) and IIoT (Industrial Internet of Things) platforms, enabling seamless data flow and communication between different devices and systems. This interoperability facilitates more informed decision-making, predictive maintenance and enhanced quality control, ultimately leading to higher productivity and reduced downtime.



For manufacturers, the benefits of adopting UNS are multifaceted. It supports the digital transformation journey by providing a scalable and flexible infrastructure that can adapt to evolving business needs. Real-time data visibility enhances operational transparency, allowing leaders to identify and address inefficiencies promptly. Additionally, UNS fosters better collaboration across departments, as stakeholders have access to consistent and up-to-date information, promoting a more cohesive organisational strategy.

Moreover, UNS is instrumental in advancing initiatives such as Industry 4.0 and smart manufacturing. By integrating UNS, manufacturers can harness the power of advanced analytics, artificial intelligence and machine learning to optimise processes, enhance product quality, and drive innovation. This positions companies to stay competitive in a rapidly evolving market landscape.

Unified Namespace concept is a transformative approach that breaks down data silos, provides real-time insights, and supports the strategic goals of manufacturing leaders. Embracing UNS is not just a technological upgrade but a strategic imperative for driving sustained growth and operational excellence in the manufacturing sector.

Upgrades & Optimisation



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The “Assets Around the Assets” Matter, Too

Investing in assets is more than a capital expense—it’s a strategic decision that requires understanding lifecycle costs. Predictive data and advanced analytics allow companies to anticipate maintenance needs better, minimise service costs, and extend asset lifespan. However, many organisations leave value on the table by underutilising asset-generated data. By tapping into this wealth of data, businesses can better allocate resources, identify risks early, and make more informed investment decisions.

Despite the proliferation of data from operational technologies (OT), manufacturers still need to explore much of this valuable information. Data disparity and isolation across systems hinder the ability to investigate and analyse operational performance effectively. By breaking down these data silos and integrating OT data with modern analytical tools, organisations can unlock new insights into asset performance, predict failures, and optimise overall operations.

One of the most significant hurdles in leveraging asset-generated data is the most common solution wrapped around assets – legacy SCADA systems. Even where systems have been upgraded for the sake of cyber security, or compatibility, it’s all too common that modern development methods and configuration tools are ignored in pursuit of the “fastest, least disruptive” upgrades. As a result, opportunities to make existing “data assets” more interoperable are missed. And that means more work and cost to wrap still more layers around OT, in order to deliver reporting, analysis and procedural guidance to managers and operators alike.

At “Possible to Practical”, we’ll illustrate how adopting modern methods is as important as “upgrading”. And once the modern tools and methods are fully absorbed, greater flexibility comes in a range of areas: how to present oversight data to a broader stakeholder group; how to deploy AI-derived insights at scale, quickly; how to reduce the time and cost of ongoing systems evolution.

For many years SCADA was the hammer for every “need-access-to-OT-data nail” – modern architectures make it easier to separate how interactive control is delivered where necessary, how oversight and insight are delivered where useful, and data flow can be made simpler for stakeholders far removed from the production assets.

Cloud, Analytics, and the Next Steps

The future of data management lies in combining the best of cloud-based analytics with operational systems. By employing secure, efficient methods of cloud data collection, businesses can create parallel data repositories accessible to both IT and OT teams. This hybrid approach ensures data security while providing real-time insights. Additionally, class-based analytics deployment can enable innovative alarming and control interventions, helping to mitigate risks before they turn into costly failures.

Learning from Others: Real-World Case Studies

We will also share insights from other companies that have successfully navigated the learning curve associated with cloud and analytics adoption. From mapping model “birth” and “usage” flows to leveraging building information modelling (BIM), these examples will illustrate how model-based thinking can be applied even to less advanced assets, generating significant future efficiencies.

Model Enablement and Consistent Data Output

Model enablement is critical in ensuring that data from assets is consistent across an organisation, no matter where the assets are located. A fully enabled model allows for rapid templatisation of visuals and application logic, making it easier to scale insights and solutions. This approach drives efficiency and facilitates the secure re-use of operational technology (OT) data across multiple stakeholders. Additionally, model-based approaches can help deliver universally applicable truths across different parts of an organisation, driving consistency in operations.



Better Tools for Smarter Decision-Making

Finally, we will highlight the importance of using RAD (Rapid Application Development) tools that allow businesses to create user-friendly interfaces for data interpretation. These tools enable operational and IT teams to collaborate more effectively, working through models to build more intelligent, intuitive decision-making platforms. By empowering people with better “cockpits,” organisations can enhance human decision-making capabilities in complex operational environments.

This event will provide a detailed exploration of how these concepts can be applied to your operations, helping you better use asset data and predictive insights. Join us to learn how your organisation can confidently move forward, integrating new technologies that optimise asset investments and drive sustainable growth.



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