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CIMdata News

CIMdata to Host a Free Webinar on Cloud and SaaS Adoption in PLM

19 January 2021

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces an upcoming free educational webinar, “Research on Cloud/SaaS Adoption in PLM.” The webinar will take place on Thursday, February 11, at 11:00 a.m. (EST) and last for one hour.

In many leading companies, legacy product lifecycle management (PLM) implementations have been installed on-site with implementation delays, customizations, and challenges to maintain and adapt to changing business requirements. In smaller companies, PLM is primarily ad-hoc, using Microsoft Excel and shared file services in support of product development. For both, the product development processes are found lacking and unable to support the agility requirements of business today. Many companies are looking to address these requirements using software-as-a-service (SaaS) PLM offerings often delivered using cloud infrastructure.

In late 2020, CIMdata kicked off collaborative research on the adoption of such PLM offerings. Our partners in this research effort include Aras, Dassault Systèmes, PTC, and Siemens Digital Industries Software. The research will help answer vital questions about industrial companies’ on-going and planned SaaS-related PLM efforts. It will consider the extent of the business benefits, the challenges overcome, the satisfaction level relative to expectations, and the impact of SaaS on organizational success. This webinar will share some insights into the findings of this research program.

This webinar will help attendees:

- Understand more about PLM software adoption at industrial companies.
- Gain a better understanding of others’ strategies around digital thread/digital twin.
- Get additional data points to help guide their PLM journey.

According to webinar host Stan Przybylinski, “CIMdata is pleased to work with some of the leading PLM solution providers on this important topic. Companies are looking to the cloud to help meet their lifecycle objectives, and this study will help them understand how companies like them are pursuing that same objective.”

Mr. Przybylinski has over 30 years of experience developing business-enabling IT solutions for

CIMdata PLM Late-Breaking News

research, engineering, and manufacturing organizations worldwide. He has worked in R&D, marketing, and communications with both Fortune 100 companies and small organizations. Stan is responsible for CIMdata's research agenda, including the CIMdata PLM Market Analysis Report series. He has been directly involved with the selection, consulting, integration, and implementation of large-scale PLM solutions and has worked on projects for both PLM solution providers and end-user organizations in the automotive, aerospace, consumer packaged goods, high-tech, and medical devices industries. He has spoken on PLM-related topics in Europe, North America, and Asia.

This webinar will be useful to PLM practitioners, solution providers, and anyone interested in learning more about this topic.

During the webinar, attendees will have the opportunity to ask questions about the topics discussed. To find out more, visit: <https://www.cimdata.com/en/education/educational-webinars/research-on-cloud-saas-adoption-in-plm>. To register for this webinar, please visit: <https://register.gotowebinar.com/register/2218389365162151184>.

Industrial end-users who have not yet participated in this research may do so by completing our survey available at <https://www.esurveyspro.com/Survey.aspx?id=f4459fba-1891-4788-9af4-ad79376846f6>.



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CIMdata's Dr. Ken Versprille to Participate in a Webinar on Model-Based Definition

20 January 2021

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that Dr. Ken Versprille, a CIMdata Executive Consultant, will participate in a webinar, "Realize a Product's Complete Digital Twin with Model-Based Definition." The webinar will take place on Thursday, 28 January.

In this webinar, Dr. Versprille will provide an overview of the challenges facing manufacturing companies. He will explain how a clear strategy and the supporting technology for deploying a Model-Based Definition strategy can help companies accelerate their product development processes to win market share. The webinar will also show how a Model-Based Definition solution can enable a company's journey towards a model-based enterprise.

Dr. Versprille has over 40 years of experience in the application of computer-based solutions for engineering and manufacturing. His research spans geometric design, design collaboration and automation, PLM standards and openness, and CAD integration across PLM applications. Dr. Versprille published the first description of NURBS, the mathematical curve-and-surface formulation, now an international standard in CAD and Computer Graphics. In 2005 he received a Lifetime Achievement Award from The CAD Society.

To learn more or register for this free webinar sponsored by Siemens Digital Industries Software, visit <https://www.cimdata.com/en/events/cimdata-supported-events/event/614-webinar-realize-a-product-s-complete-digital-twin-with-model-based-definition>.



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Connected Engineering Accelerates Innovation – a CIMdata Commentary

19 January 2021

Key takeaways:

- Experts collaborate better when contextually connected.
- Design changes are completed faster when assembly and requirements traceability is easy to access and examine.
- Reuse of everything, from requirements, to features, to designs, to services, will delight customers with robust products and services.
- Managing product line variations consistently for requirements, features, parts, and subsystems enables powerful reuse, which in turn enhances product and service quality.
- Siemens' Software & Systems Engineering (SSE) Connected Engineering capabilities provides an integrated, heterogeneous Model-Based Systems Engineering (MBSE) environment managing reuse of everything.

Need to Improve Collaboration Amongst Disciplines

Historically, companies established synchronization points, aka mockups, to assemble a product prototype, first physically and now virtually, to make sure the integrated product will work as intended. A synchronization point is a product context, well-defined, at a particular point of time. This encouraged collaboration to solve product integration challenges, as well as to resolve validation test failures.

Features evolve from one discipline to another as technology evolves. For instance, product usage reveals new load cases to consider and manage. All the buzz about digital twins is about stable configurations of a product to encourage collaborative investigation, evaluation, and decision making. The digital twin for a decision must comprehend the appropriate usage context even if they come after mass production. Discipline experts in software, electronics, and mechanical engineering will use these “understanding-models” to improve their designs. Ideally, they will do this in a user experience (e.g., visualization) and context with which they already are familiar.

Traversing the silos between mechanical, electrical, software, and even systems is ever more challenging as vehicle product and service complexities increase. The frequency of product upgrades is faster as more features are realized in upgradable software systems. Engineering skills are broadening beyond the discipline in which the engineers were originally trained. Computer-based engineering tools have evolved within disciplines but exchanges of information across disciplines has too often been manual and file based. Ultimately, collaboration amongst disciplines must accelerate while also being error free.

The order of decisions needing to be made changes as feature management and reuse of anything are contemplated. The order of decisions is best decided by experts collaborating across the disciplines. Increasing complexity will be handled by more frequent decision points—in fact, it would be best if product mockups were continuous. For that to happen, advances are needed in skills and connected engineering. Principles of agile development and the speed of delivering high quality product features continuously are coming to the forefront. These advances are both in the practices engineers use and in the tools they rely on. Administrative chores for exchanging data should be replaced by computer automation, providing reliable digital twins. Accelerating collaboration is a competitive consideration that PLM solution providers must address. Collaboration must provide reliable context, a trusted digital twin, and insights across multi-disciplines in ways that enable useful decisions in the engineer's specific

domain.

For years, CIMdata has defined and encouraged industry leaders to embrace a systems-of-systems mindset and the need for a comprehensive and integrated PLM ecosystem to help manage it all. PLM is needed for the complete lifecycle comprehending reuse, field upgrades, and even disposal. The PLM ecosystem will have many applications, likely from different solution providers. Connecting tools to enable connected engineering is paramount.

Furthermore, modeling future vehicles with their applications will require improved tools, seamlessly connected. In fact, more disciplines will use understanding-models to answer the question: “Will our existing products in customers’ hands work with the new feature?”

Connected Engineering—Continuous Collaboration

Being able to explore the effects of a proposed change improves product robustness. Reviews for choosing amongst alternatives will accelerate and improve as all disciplines interact together with models. Model-based engineering (MBE) is enabling organizations to transform from serial processes to agile continuous processes. Engineers will be connected all the time rather than just at infrequent, expensive physical mockups. Figure 1 illustrates this fundamental shift driving organizations to rethink their product development processes taking advantage of collaborative understanding-models.

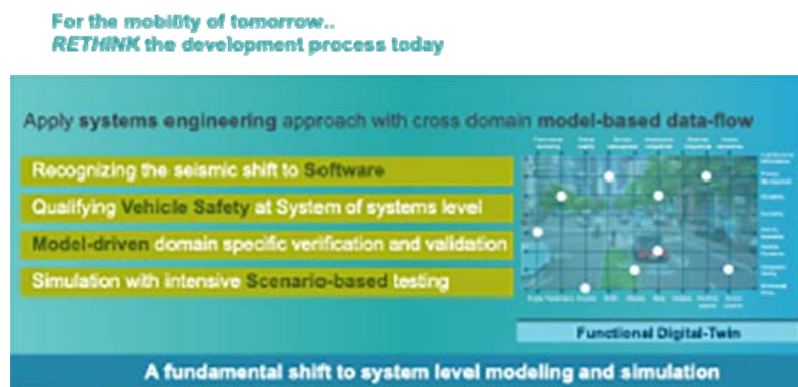


Figure 1—Model-Based Approaches

Bridge Disciplines

(Courtesy of Siemens)

The models and tools to assemble, create, share, and record engineering decisions need collaboration via a managed, comprehensive, and end-to-end lifecycle context. Collaboration is complete and trusted when each expert in their discipline can comprehend the effect of the changes being considered. This requires tool bridges that use the same virtual context building trust and confidence. These contexts need to happen on demand, well-orchestrated across the disciplines.

A “systems understanding” framework needs PLM integrated with MBSE to provide interactive views for authors, investigators, and decision makers. Defining a vehicle, assessing it continuously, and re-defining it as usage occurs is the focus of Siemens Digital Industries Software’s (Siemens) Software & Systems Engineering (SSE) portfolio of solutions. SSEs Connected Engineering provides the PLM framework that makes continuous collaboration possible by providing traceability of key items, including test cases, features, requirements, parts, assemblies, and all the rest.

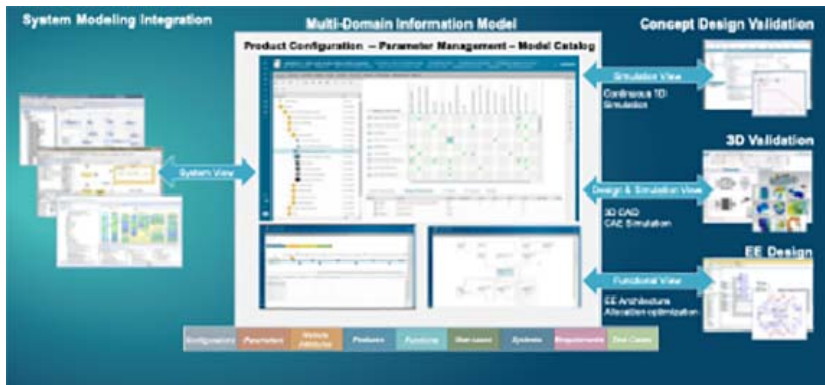


Figure 2—SSE Connected Engineering

Multi-Domain Information Model (Courtesy of Siemens)

Siemens' SSE Connected Engineering addresses the Multi-Domain Information Model challenges as summarized in Figure 2. Note the items consistently managed for all disciplines, both left and right in the image. Also note the inherent traceability from one item to another.

By managing features instead of parts and assemblies, a clearer measure of customer value is understood across the complete lifecycle. New items being managed directly in the information model allows for better traceability. As engineers work simultaneously, they can examine linkages to other items they depend on in their familiar and context-based user experience. Siemens' SSE Connected Engineering has coined this capability as exploring “suspect links”—items changing that you care about because they are connected to your item. No more waiting until the next synchronization point due to the information silos not being connected. Engineers are empowered with traceability and contextual/situational awareness, which in turn improves time-to-value and quality, in tandem.

Additionally, Siemens' Product Configurator solution enables on-demand comprehensive digital twins—accessible and always accurate. CIMdata has commented previously on Siemens' consistent Product Configurator use within the electrical development ecosystem, Capital.[\[1\]](#) Connected Engineering (using the same Product Configurator) with the advance of suspect links (i.e., what might be changing in other domains and disciplines) will improve robust interactive decision making.

Siemens' advancements on the way to integrated MBSE are enabling open ecosystems allowing external tools and data sources to be seamlessly integrated. Their partnerships with SAP and IBM[\[2\]](#) are concrete examples for integrating those solution providers' key tools for logistics and requirements management into a connected engineering ecosystem. Note the API and OSLC technologies depicted in Figure 3. Independent firms like Sodus and SBE Vision are effectively demonstrating OSLC integrations,[\[3\]](#) including the proper exchange of a known context—the product configuration. They can do this because Siemens has integration technologies that foster connected engineering.

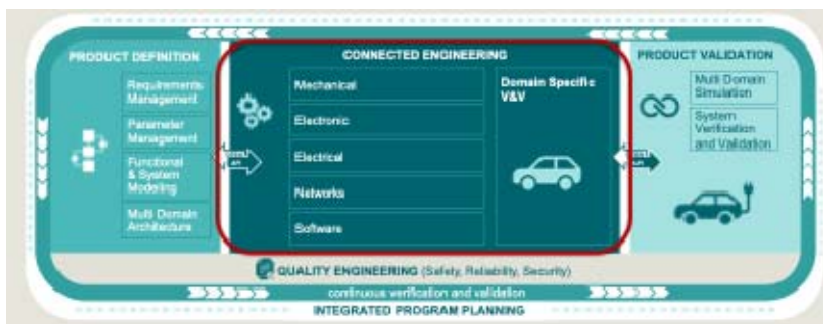


Figure 3—Software & Systems

Engineering Pillars (Courtesy of Siemens)

Summary

Systems Engineering practiced by more than experts is a competitive advantage, and when enabled correctly, product and process innovation is enhanced with contextual collaboration. Furthermore, the combination of integrated MBSE tools with reliable vehicle configuration enables a comprehensive digital twin, always accurate to the latest discoveries. To support this, Siemens' multi-domain information model has been designed to continuously connect engineers by providing an accurate digital twin of the vehicle design, its manufacturing, and its use.

Siemens' SSE Connected Engineering services are being used today within their Capital suite of solutions. CIMdata recommends that companies consider Siemens' SSE portfolio of solutions, especially Connected Engineering, when evaluating and/or migrating current vehicle development solutions. With computers and their associated electronics being pervasive, a comprehensive, integrated yet heterogeneous, and multi-disciplinary product development environment is essential in the vehicle development industry.

Siemens' SSE pillars of Product Definition and Connected Engineering have been summarized in multiple CIMdata commentaries. CIMdata will elaborate on the remaining pillars of the Siemens SSE capabilities early in 2021, see Figure 3.



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PTC's Cloud Strategy: With a Focus on Onshape and Atlas

22 January 2021

Stan Przybylinski, CIMdata's Vice President, recently spoke with Jon Hirschtick, EVP and President of SaaS at PTC and David Katzman, Head of Customer Experience and Strategy, Onshape at PTC, to discuss cloud strategy with a focus on Onshape and Atlas. Among the topics discussed were:

- The importance of cloud-based solutions to their overall strategy.
- A description of the ecosystem of infrastructure, applications, and other partners that are part of their offering.
- How their solution and its go-to-market strategy address the issues raised by customers and prospects.
- A description of the primary target customers.
- Information on the installed customer base.
- The evolution of these offerings in the short to medium term.

Learn more by reading the full blog post which is available at <https://www.cimdata.com/en/resources/cimdata-blog/item/14906-ptc-s-cloud-strategy-focus-on-onshape-and-atlas>



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Responsible Value Chains Help Reach Sustainability Goals – a CIMdata Commentary

21 January 2021

Key takeaways:

- While digital transformation and Industry 4.0 dominate the business headlines, improving global sustainability is also a major global imperative.
- Companies need to evolve their value chain strategy from focusing on logistics and costs to "responsible value chains."
- Accenture believes that to become responsible and transform the business value paradigm, businesses must become trusted, net zero, and circular, and smart, connected products will be essential to power that transformation.
- Smart, connected products will be an essential element to collect and interpret data necessary to help companies become trusted, net zero, and circular.
- Accenture Industry X solutions, services, and partner ecosystems are designed to help customers meet these goals.

This CIMdata commentary highlights the global need for drastic improvements in sustainability. Accenture, a leading global system integrator, has expansive goals for their own sustainability efforts and is transforming its Industry X practice to help their customers make equally impressive gains.[\[1\]](#)

Improving Sustainability is a Global Imperative

People the world over were riveted by the Apollo space program in the United States.[\[2\]](#) The Space Race kicked off in 1957 with Sputnik, the first satellite, and humans had raced around the world for years after that but Apollo took humans to the moon. The first picture of moonrise taken from Moon orbit showed a blue, pristine looking Earth that was already showing signs of environmental distress. The seeds of environmental activism were sewn shortly after this event. Earth Day was proposed at a UNESCO conference in 1969 and was first celebrated in the United States in 1970, and was taken international in 1990. Some observers draw a straight line from that beginning to the Paris Climate Accords in 2016.

Unfortunately, the good intentions from 50 years ago have not been realized, with not enough progress to show for the efforts applied. The world is swimming in the detritus of human existence. The Great Pacific Garbage Patch in the north Pacific Ocean spans from Japan to the United States. No one really knows how much waste is in the gyre[\[3\]](#). Products from sea vessels to consumer electronics created in the West are "recycled" in countries like Thailand, that are choking on the volume and the environmental degradation that results.[\[4\]](#) A major environmental downside to the COVID-19 pandemic is the vast increases in packaging used for things like takeaway food and rapid growth in delivered items.

Product companies are being pushed to change on a number of fronts. Many efforts to make positive change are often led by the European Union and leading companies based there. For example, the Waste Electrical & Electronic Equipment (WEEE), the Restriction of Hazardous Substances (RoHS), and Energy-Related Products (ErP) standards levied new requirements for commerce in the European Union, a market too big for global companies to ignore. Concurrent engineering, an approach popularized in the 1990s that helps shorten product development by simultaneously considering a wide range of technical and organizational perspectives earlier in the development process, now includes consideration of reuse,

recycling, and remanufacturing in what is termed “design for X” analyses.[\[5\]](#),[\[6\]](#)

Many of these ideas coalesced with the rise of the Circular Economy, an economic system focused on eliminating waste and the continued (re)use of resources. While the idea emerged in the 1970s, it is only in the last two decades that things took shape. For example, in 2006 China named circular a national policy in their 11th five-year-plan. This effort is championed by the Ellen MacArthur Foundation, founded in 2009 to focus on this issue, and has picked up steam in the last decade. Strategic partners of the Foundation include global heavyweights like Philips, Google, Ikea, Renault, SC Johnson, and Unilever. In 2014 at our global PLM Market and Industry Forum event CIMdata detailed how this initiative created significant opportunities for the Product Lifecycle Management (PLM) Economy, CIMdata’s term for the software and services companies that help industrial firms achieve their PLM objectives. CIMdata strongly believes that PLM initiatives and enabling technologies can provide significant new opportunities for industrial firms. In fact, CIMdata evolved the way we talk about the product lifecycle itself. Products should no longer have an “end of life” but should be managed from idea through life, with recycling and reuse an essential part of the product and manufacturing process definitions to help meet sustainability targets.

Sustainability initiatives often fall under corporate social responsibility (CSR) programs, which first emerged in the 1960s. Today environmental concerns top the list for many companies. Caterpillar, the world’s largest construction equipment manufacturer, has improvement goals for both their operations and their products. For example, in 2006 Caterpillar set a goal for 2020: reduce greenhouse gas emissions intensity by 50%. The company reached 54% in 2019.[\[7\]](#) On the product side, Caterpillar reported that 91% of eligible end-of-life returns were collected for remanufacturing. Global manufacturing giant Siemens is one of many companies that is focusing their sustainability efforts on global strategic needs, framed in part by the UN’s sustainable development goals (UNSDGs).[\[8\]](#) But the company sees improving sustainability as more than just corporate responsibility. “Committing to cutting our global carbon footprint is not only prudent—it’s profitable,” stated Mr. Joe Kaiser, CEO of Siemens AG.[\[9\]](#)

This is an important point. It is not enough for companies to want to reduce emissions, produce less waste, or remanufacture their products instead of scrapping them. The incentive to change is much stronger if you can see making positive change as a business opportunity. Accenture conducted an interesting analysis of the European automotive component and industrial equipment market, summarized in Figure 1. It highlights the potential value pools available by creating and leveraging more circular value chains. This analysis identified over \$50 billion in annual possible expenditure reductions just in this industrial segment in Europe.

The urgent need to improve sustainability exists in a product world that is rapidly changing. Smart, connected products reign in many industrial markets. The companies that make them are making strategic investments toward achieving some version of the Industry 4.0 vision.



Figure 1—Opportunities in the

European Industrial Equipment & Automotive Components Segments
(Courtesy of Accenture)

Companies need to manage dynamically changing global value chains to bring in needed innovation and often to better serve far-flung customers. Many see digital transformation as a critical enabler for thriving in this smart, connected future, often by creating new business models, such as product-as-a-service. CIMdata strongly believes that industrial companies pursuing such transformation really need a strong end-to-end product strategy and implementation to succeed. Fortunately, companies can leverage the same technologies and processes used in support of addressing these trends to help reach their sustainability objectives, particularly by transforming their value chains. These concepts include model-based systems engineering (MBSE), digital twin, digital thread, and the Internet of Things (IoT). Accenture's Industry X practice stands ready to help.

Industry X and Responsible Value Chains

Accenture is one of the leading global system integration firms, with over 500,000 employees serving customers in more than 120 countries. CIMdata follows Accenture closely since they are the global revenue leader for services in our annual PLM market analysis, driven largely by their Industry X practice.^[10] Accenture has grown organically and through acquisition to deliver products, Accenture-developed technology, and services to a wide range of industrial clients. Their PLM-related practice is in their Industry X unit, as is their Smart Connected Products group. According to Accenture, Industry X is their approach for helping clients “transform their business model and operations, re-invent their products from design and engineering, through manufacturing and support, to compete now and drive exponential growth.” Figure 2 highlights some examples of the types of strategic and tactical support that Accenture's Industry X practices delivers to their customers.



Figure 2—

Examples of Accenture Industry X Efforts (Courtesy of Accenture)

Accenture is another global giant that frames its sustainability efforts around the UNSDGs. Accenture collaborates with the UN on their CEO Study program, a joint review of sustainability efforts that seek to coalesce the views of global business leaders and UN executives. For their most recent study in 2019 Accenture interviewed over 1,000 top executives representing 21 industries and 99 countries about the opportunities and challenges to achieving the Global Goals.^[11] Based on their research, 71% of CEOs believe that business must play a critical role in helping achieve the UNSDGs. Accenture and CIMdata agree that if industrial companies are to effectively contribute to meeting these ambitious goals smart connected products, the IoT, and PLM-related solutions will play leading roles.

A key concept to Accenture's approach is what they term responsible value chains which is part of the firm's new holistic "360°" value framework.^[12] According to Accenture, responsible companies share three primary characteristics, as illustrated in Figure 3. First, they must be "trusted," with a focus on creating products, and their associated supply chains, in ways that drive equitable growth and increase the quality of life for their employees, customers, and communities. Effectively addressing health, safety, and ethics issues is essential in such organizations. This will be a new consideration for many companies defining their value chains. Second, firms must strive to be "net zero," with greenhouse gas-neutrality of both products and their production and operations. This will also require significant change. While CSR programs are common at the large companies at the top of many value chains, adoption will have to expand in their tiers of suppliers. Finally, responsible companies must be circular. This will require significant rethinking of the entire product lifecycle from idea through life. Companies will be more likely to pursue circular if its objectives are also of interest to its customers. There is some evidence that consumers are increasingly considering environmental concerns in their purchasing decisions.^[13] To help their industrial customers meet these significant challenges, Accenture designed a set of solutions, services, and partner ecosystems focused on sustainability and creating responsible value chains that are delivered by their global Industry X practice. Their efforts are already bearing fruit for their global clients.



Figure 3—Key Characteristics of Responsible Companies

(Courtesy of Accenture)

Some Accenture customer examples will help make their client interactions more concrete. Accenture’s work with a global automotive supplier offers a good example. The company set an audacious goal: to develop a corporate CO₂ platform to track the CO₂ impact of their environmental initiatives. This “single source of truth” would help them measure their CO₂ footprint and to support decision-making across their value chain. The client’s goal was to be carbon neutral by 2030. Accenture modeled key scenarios that spanned engineering, procurement, and design to inform and involve key stakeholders. They expanded their communication strategy to include Webinars to educate employees that translated carbon neutrality concepts to fit the company context. Accenture also helped to build consensus on key enablers for carbon neutrality and built a roadmap complete with cost estimates. When complete, the platform will draw on multiple trusted data sources to calculate the client’s footprint, support developing and executing their carbon reduction roadmap, and track and monitor the results using internal dashboards and custom reporting for external stakeholders.

The Biesse Group (Biesse), an Italian specialist in industrial equipment in the woodworking segment, saw the opportunities that the IoT/IIoT offered for both them and their customers. The company has a history of investing in software and advanced services, and is known for developing easy-to-use solutions that make using their advanced manufacturing technology more practical for their customers. Connected asset management leveraging the IoT could help improve operational efficiencies, reduce costs, and open up new revenue streams. Accenture worked with Biesse to design an IIoT operating model, business case, and solution roadmap. The overall goal was to improve machine productivity and customer satisfaction by minimizing downtime through predictive maintenance powered by in-depth analytics. This helped Biesse by optimizing both processes and economic activities in real time, reducing the consumption of all types of resources.

The platform enables sending real-time information and data on the technologies in use, optimizing the performance and productivity of machines and systems. The data collected support detailed analyses of production process and machine functions, detecting malfunctions, assisting customers in maintenance operations, ordering replacement parts in less time and ultimately preventing faults.

Initial services focused on preventive maintenance alerts, machine management, manufacturing events analysis, and remote software distribution. Energy management was significantly improved since the solution monitor the consumption and was able to rectify usage in real time. Many services are planned to be introduced in the future.

Accenture drastically shortened the time to value for Biesse by building their customer-facing IIoT

solution using the Accenture Connected Platforms as a Service (CPaaS) on the Microsoft Azure IoT platform. Using this approach, the company was able to deploy the solution in only five months. Sensors and devices on the machines produce in-depth analytics for display on easy-to-view dashboards using Microsoft Power BI data visualization on mobile devices. Significantly more functionality is planned. Once fully rolled out, a pay-per-use model will allow Biesse's customers to customize the services they receive.

Conclusion

Climate change and environmental degradation have made improving sustainability top of mind for many companies and governments. Accenture, a leading global system integration firm, is one of many global companies setting lofty sustainability goals for their own operations and products. Reaching these sustainability goals can be challenging but another overarching trend, the move to smart connected products in many industries, actually provides technology and processes that companies can leverage to help reach those lofty goals. CIMdata sees product strategies and enabling technologies as core to the solution needed for industrial companies. To Accenture, a leading global systems integrator, these issues and enabling technologies are core to the mission of their Industry X practice, which can draw on intellectual and human assets from across Accenture to help companies achieve their sustainability goals. The global automotive supplier and the Biesse Group are just two of many Accenture customer examples. Accenture's objective of enabling responsible value chains is exemplary of what needs to happen more broadly in society and commerce. Only through collective action can we all strive to remake the Earth into that beautiful blue ball first viewed in the moonrise over fifty years ago.

[1] Research for this commentary was partially supported by Accenture.

[2] "The Apollo 11 Mission Was Also a Global Media Sensation," <https://www.nytimes.com/2019/07/15/business/media/apollo-11-television-media.html>

[3] <https://www.nationalgeographic.org/encyclopedia/great-pacific-garbage-patch/>

[4] <https://www.pri.org/stories/2019-05-21/your-recycled-laptop-may-be-incinerated-illegal-asian-scrapyard>

[5] E.g., Fleischer and Liker (1997). Concurrent Engineering Effectiveness: integrating product development across organizations. Hanser Gardner Publications. Cincinnati, OH.

[6] E.g., design for assembly, design for manufacturing, design for disassembly, etc.

[7] https://reports.caterpillar.com/sr/2019_Caterpillar_Sustainability_Report.pdf?_ga=2.262491460.994540390.1602188691-2025495101.1602016119

[8] <https://sdgs.un.org/goals>

[9] <https://new.siemens.com/th/en/company/sustainability/decarbonization/carbonneutral.html>

[10] Accenture chose the name "Industry X" because "technology now is in such dynamic flux that its staging posts can no longer be pinned down for longer than a moment." Eric Schaeffer. Industry X.0: Realizing Digital Value in Industrial Sectors. Germany. Redline Verlag. 2017.

[11] The Decade to Deliver a Call to Action: The United Nations Global Compact—Accenture Strategy CEO Study on Sustainability 2019. https://www.accenture.com/_acnmedia/pdf-109/accenture-ungc-ceo-study.pdf

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Acquisitions

Accenture Acquires Wolox, Boosting Cloud First and Digital Transformation Capabilities in Argentina and South America

18 January 2021

Accenture has acquired Wolox, a leading Argentinean cloud native and agile development company that provides digital solutions to help clients achieve successful business outcomes.

Founded in 2012, Wolox’s team of more than 280 professionals specializes in integrated services that include digital business design, product creation and agile squads.

“The acquisition of Wolox brings differentiated skills to Accenture, as the team uniquely blends cloud native development with design and state-of-the-art technologies for business transformation,” said Karthik Narain, global lead for Accenture Cloud First. “Wolox has multidisciplinary teams of industry and business experts, UX/UI designers, software designers, architects and engineers and, together, we’re now more equipped to help clients tap into the technology expertise and human ingenuity that powers how Accenture innovates.”

The addition of the Wolox team enhances the global capabilities of Accenture Cloud First, a multi-service group providing a full stack of cloud services to help clients across every industry accelerate their digital transformation, innovate faster, and create differentiated, sustainable value. Powered by 70,000 cloud professionals, and a \$3 billion investment over the next three years, the group brings together an unmatched depth and breadth of cloud expertise, industry cloud solutions, ecosystem partner capabilities, and assets that help clients realize greater value from cloud at speed and scale.

“By pairing Accenture’s global expertise with Wolox’s regional talent and capabilities, this acquisition strengthens our ability to help clients accelerate business transformation using cloud technologies and deliver measurable business value,” said Sergio Kaufman, president of Accenture Argentina and Hispanic South America. We will integrate Wolox across Accenture’s services, including Strategy & Consulting, Interactive, Technology and Operations, enabling us to deliver 360 degree value for our clients, people, shareholders, partners and communities.”

Agustina Fainguersch, Wolox founder and CEO, said, “Since 2012, Wolox has focused on transforming industries through technology. By joining Accenture, we will be able to continue doing so, furthering our reach and impact in a more robust manner. The combination of Accenture and Wolox is a great opportunity for our teams and clients. This is our moment to help clients solve their most pressing challenges by leveraging the cloud and cutting-edge technologies.”

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Cadence to Acquire NUMECA to Expand System Analysis Capabilities with Computational Fluid Dynamics

20 January 2021

Cadence Design Systems, Inc. announced that it has entered into a definitive agreement to acquire NUMECA International, a leader in computational fluid dynamics (CFD), mesh generation, multi-physics simulation and optimization. The addition of NUMECA's technologies and talent supports the Cadence® Intelligent System Design™ strategy and broadens its system analysis portfolio with CFD solutions, servicing a fast-moving market segment where accuracy, reliability and predictability are paramount concerns for high-fidelity modeling.

NUMECA's technology addresses the high-growth CFD market segment, which has an estimated \$1.6B TAM. The acquisition builds on the momentum of recent Cadence system innovation developments with the Clarity™ 3D Solver for electromagnetic (EM) simulation, the Clarity 3D Transient Solver for finite difference time domain (FDTD) system-level EM simulation and the Celsius™ Thermal Solver for electrical-thermal co-simulation product introductions. NUMECA's technology will also contribute to Cadence best-in-class system analysis solutions for integrated circuits (ICs), electronic subsystems and full system designs.

NUMECA's core competency in CFD encompasses many industries and applications including aerospace, automotive, industrial and marine, with its proven technologies adopted by industry leaders such as NASA, ArianeGroup, Honda and Ford.

"Cadence continues to be at the forefront of innovation, addressing real-world system design challenges by leveraging our deep computational software expertise," said Dr. Anirudh Devgan, president of Cadence. "The acquisition of NUMECA's proven CFD technology and talented team complements Cadence's finite element analysis and other system innovation technologies and is another successful step that will advance our customers' ability to design the exciting products of tomorrow."

"Next-generation products and systems require comprehensive multi-physics engineering solutions encompassing IP, semiconductors, IC packaging, modules, boards, complex mechanical structures and more," said Tom Beckley, senior vice president and general manager of the Custom IC & PCB Group at Cadence. "With the addition of NUMECA's technology to the Cadence portfolio, we are broadening our system analysis capabilities and integrated design solutions, addressing critical customer challenges in areas such as internal and external flows, acoustics, heat transfer, fluid-structure interaction and optimization."

"Since our inception, NUMECA's stated mission has been to deliver dedicated CFD solutions to predict product and system performance focused on the highest levels of reliability and safety for our industry-leading customers' most challenging designs," said Dr. Charles Hirsch, president of NUMECA. "We are very excited to join Cadence, as we share a common culture of innovation in computational software. Together, we will continue covering the industrial challenges of our current market, while providing creative system solutions to address the needs of next-generation products."

The terms of the transaction were not disclosed. The acquisition is expected to be immaterial to revenue and earnings this year, and close in the first quarter of 2021, subject to customary closing conditions.



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CNC-Consult & Automation BV becomes OPEN MIND Technologies Benelux BV

20 January 2021

CNC-Consult & Automation BV was taken over by OPEN MIND Technologies Benelux BV on 1 January 2021. Apart from the company name, nothing has changed, and the usual trusted contact persons are still available for you to answer your questions about *hyperMILL*®. OPEN MIND takes over all employees, so the high expertise, quality and excellent service will continue to be available to customers, partners and prospects.

The takeover offers further great advantages as OPEN MIND is developing the successful *hyperMILL*® CAM software and so you will receive *hyperMILL*® service and support directly!

Maarten van Teeffelen, founder and managing director of CNC-Consult, withdrew from his active business life with his company at the end of 2020. OPEN MIND has been the preferred candidate for the takeover to assure continuity and quality.

Over the past 25 years Maarten has made CNC-Consult one of the leading companies in the manufacturing industry with a very high level of CAD/CAM expertise in the Benelux counties. And for almost as long CNC-Consult has been active as *hyperMILL*® reseller.



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More than 666 million CAD model downloads in 2020: Manufacturer catalogs powered by CADENAS accelerate to top speed

18 January 2021

More than 800 manufacturer catalogs based on the eCATALOGsolutions technology from CADENAS have really stepped on the gas in 2020: From the beginning of January to the end of December, 666,194,220 CAD & BIM models of well-known component manufacturers were downloaded by engineers, architects and planners worldwide, providing them with a steadily increasing number of valuable sales contacts. "We have seen a sensational increase in CAD download numbers in recent years. The reason for this is also our visual search engine for manufacturer components 3DfindIT.com, which, in contrast to conventional search engines, is focused on the technical area and effectively supports engineers, architects as well as planners in finding the right component," says Jürgen Heimbach, CEO of CADENAS GmbH.

Growth of CAD downloads continues to accelerate rapidly

The rapidly advancing digitalization and the current global situation are once again acting as an accelerator for the change already underway in terms of information technologies. For example, the demand for digital product data in the fields of mechanical engineering, electrical engineering or architecture has once again picked up considerably in recent months, as the CADENAS download record shows. Many component manufacturers are already focusing on marketing their products as digital twins. As a result, the innovators among the manufacturers are less affected by the currently cancelled trade shows worldwide, because by providing engineering data and digital twins they

automatically generate qualified sales contacts and this even if personal customer contact is not possible. It is not too late for manufacturers who have not yet offered their portfolio in a product catalog. After all, a spirited approach to postponed digitization projects will pay off in the short term.

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NTT DATA is significantly expanding its presence in the US market

19 January 2021

NTT DATA expands in the US by strengthening its foothold in the strategic supply chain segment. itelligence | NTT DATA Business Solutions is announcing its acquisition of the US SAP consulting company My Supply Chain Group, LLC (MSCG), Birmingham, Alabama. With this acquisition, itelligence | NTT DATA Business Solutions, one of the world's most successful SAP service companies, is not only significantly expanding its presence in the USA, but also extending its service portfolio with essential supply chain planning and execution capabilities.

MSCG specializes in supply chain process re-engineering and application implementation services utilizing SAP Extended Warehouse Management, Integrated Business Planning/Advanced Planning and Optimization, and Transportation Management and is focused exclusively on SAP Solutions.

"With the acquisition of MSCG, we are expanding in a highly strategic market segment in the USA, one of our most important markets," reports Norbert Rotter, CEO itelligence | NTT DATA Business Solutions. "The USA supply chain market is at a turning point, as SME companies in particular are beginning to digitally transform and optimize their supply chains. In this context, MSCG represents an ideal partner for us."

According to Gartner, the global market for supply chain management amounted to 14 billion US dollars in 2018 and was set to grow to 19 billion by 2021. It is also expected that 65 percent of goods movements in automated warehouses will be controlled by robots by 2023. In terms of sectors, MSCG has focus in manufacturing, consumer goods, oil and gas, mill products and the life science industries.

"Many analysts state five years of digital transformation have taken place in the last several months. No area of business has been more affected by this trend than companies' supply chains," states Steve Niesman, itelligence Americas President and Region Head. "Therefore, we are incredibly excited to welcome MSCG into the itelligence/NTT DATA family to help our collective customers stay relevant and thrive as the pace of supply chain planning and execution continues to accelerate."

In the USA, MSCG is a recognized market leader for SAP Extended Warehouse Management and Integrated Business Planning. The cloud solution SAP Integrated Business Planning already has a strong market position in the USA and offers great potential for supporting customers on their digitalization journey.

The acquisition of MSCG complements the partnership in the area of global logistics control that NTT has recently entered into with SAP. The two partners are setting out to jointly develop closely integrated solutions for the Intelligent Enterprise. As SAP's strategic partner, NTT will deliver cloud solutions, infrastructure management services and business consulting at a global level. itelligence is a subsidiary of NTT/NTT DATA.

"We are delighted to expand our SAP Supply Chain capabilities in the USA market through the acquisition of MSCG," emphasizes Eric Clark, Chief Digital Officer, NTT DATA Services. And he continues: "We consider logistics and supply chain as a strong growth market. In addition, NTT DATA

has outstanding expertise in Digital, Vertical and Cloud solutions. The combination of MSCG and our One NTT DATA SAP team offers enormous competitive benefits to customers, particularly those in our commercial and manufacturing verticals, and fits perfectly into our global and local strategies."

Together with MSCG, itelligence | NTT DATA Business Solutions is also strengthening the network and collaboration within the overall NTT Group on the American continent.

"The strategic investment from NTT DATA and itelligence gives MSCG the partnership we need to expand our best-in-class supply chain services not only in NA and LATAM, but also throughout the NTT global footprint," says Omar Zuberi from MSCG. His partner Neil Patel adds: "The two companies are excited to take advantage of the synergies between MSCG's entrepreneurial spirit and the NTT global brand. We are consequently convinced that we will enjoy strong growth working together in our newly formed partnership."

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PTC and Cybellum partner to seamlessly integrate digital security into the product production process

18 January 2021

PTC and Cybellum, a leader in Automotive Cybersecurity Risk Assessment, announce a partnership to deliver an integration between PTC's Windchill RV&S and Cybellum's platform. The joint solution will provide automated cybersecurity scanning for software developed using Windchill RV&S, to ensure compliance with all the required safety and security regulations.

PTC's Windchill RV&S combines requirements engineering, rigorous software configuration control and test management to ensure manufacturers build the right products. The software source code and built executables are managed within Windchill RV&S, and during check-in, Cybellum's comprehensive platform seamlessly conducts cybersecurity evaluations. Joint users can now define software security considerations early in the product life cycle, side by side with their whole product engineering process. They can then plan their implementation, calculate and manage the associated cybersecurity risks in the context of the whole product.

Software developers can also proactively test and fix the identified security or safety threats using the automatically generated, detailed guidance. This can ensure that critical safety and security vulnerabilities are identified, managed, prioritized and mitigated throughout the engineering cycle, guaranteeing that your products are safe and secure.

The joint solution also helps users to prepare for and comply with existing and upcoming cyber security regulations (such as ISO 26262 Road Vehicles Functional Safety, UN WP29 (World Forum for harmonization of Vehicle Regulation), and ISO 21434 DIS Road vehicles Cybersecurity Engineering).

"We are excited about the partnership with PTC, helping product development teams shift left by embedding cybersecurity risk assessment processes and prevent vulnerabilities early in the delivery process of software-intensive products," said Michael Engestler, co-founder and CTO of Cybellum. *"Through the unique integration with PTC Windchill RV&S we empower manufacturers to control, trace and mitigate safety and security issues early on, ultimately delivering safe and secure products."*

"We see this integration as a significant enhancement for PTC customers who are particularly concerned about the cybersecurity of the software they manage with Windchill RV&S," said Hedley Apperly, VP SSE Products, PTC. He continued, *"This automated security scanning and remediation*

mentoring will be invaluable to any manufacturer building software intensive products, which are vulnerable to cyber-attack."

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PTC Completes Acquisition of Arena Solutions

19 January 2021

PTC has completed its acquisition of Arena Solutions, the industry's leading software as a service (SaaS) product lifecycle management (PLM) solution. The combination of Arena Solutions and Onshape, which PTC acquired in 2019, establishes PTC as the leading provider of pure SaaS solutions for the product development market and broadly extends PTC's presence in the attractive mid-market, where SaaS solutions are becoming the standard.

"Together, Arena Solutions and Onshape will provide a powerful pure SaaS CAD and PLM solution that is positioned to capture the rapidly emerging shift toward SaaS for product design, development, and realization," said Jim Heppelmann, President and CEO, PTC. "The combined solution will allow manufacturers to improve collaboration and accelerate innovation in the 'new normal' created by the global pandemic. With our Creo® and Windchill® solutions showing strong momentum in the traditional CAD and PLM market, and now the Arena™ and Onshape® solutions leading the way in SaaS, PTC is well positioned to lead the product development market today and into the future."

According to independent industry analyst firm Gartner, the overall SaaS market is poised to surpass \$120 billion in 2021. As the product development market responds to the COVID-19 pandemic, early adopters have realized the impact of key SaaS benefits especially as they relate to digital transformation.

Concurrent with the closing of the Arena Solutions acquisition, PTC has expanded its SaaS business unit, which now includes Arena, Onshape, and PTC's market-leading Vuforia® augmented reality technology. The expanded business unit will be led by long-time PTC global sales leader Mike DiTullio, reporting directly to PTC's CEO, Jim Heppelmann. Jamie Pappas, a 25-year PTC sales veteran, has been elevated to succeed DiTullio as head of global sales. Pappas has led regional sales in Asia, Europe and, most recently, North America, driving consistently strong performance in each role.

"The expansion of our SaaS business unit will allow us to focus on integrating the Arena team into PTC and leveraging the tremendous talent and expertise we have across our SaaS portfolio," continued Heppelmann. "Mike DiTullio has demonstrated his ability to align organizations to drive growth, and I am confident that in this new role he can help us capitalize on our SaaS technology leadership position. Jamie Pappas is an accomplished veteran sales leader within PTC, and I am equally confident in a smooth and seamless transition as he assumes his new role. PTC is fortunate to have such a strong bench of sales and business leadership."

Arena Solutions ended calendar year 2020 with approximately \$50 million in annualized recurring revenue, reflecting double-digit growth over 2019. PTC continues to expect that the transaction will be neutral to PTC's FY'21 cash flow from operations target of \$365 million and free cash flow target of \$340 million (which reflects the deduction of approximately \$25 million of capital expenditures from cash flow from operations) and accretive to FY'22 and beyond. PTC expects ARR growth for its first

quarter of fiscal 2021 ended December 31, 2020 to be near the high end of guidance. Management plans to update investor guidance as part of its fiscal first quarter earnings release on January 27, 2021.

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Company News

Agilent Names Allison Ballmer Senior Vice President of Corporate Development

18 January 2021

Agilent Technologies Inc. is pleased to announce Allison Ballmer has been named the company's new senior vice president of Strategy and Corporate Development, reporting to Agilent President and CEO Mike McMullen.

Ballmer will lead the corporate-development team in identifying, developing, and evaluating merger-and-acquisition plans globally, as well as program management of integrations. She also will lead enterprise strategy while collaborating with Agilent businesses groups to drive critical growth initiatives across the company. Ballmer will serve as a key member of the executive staff and as an adviser to the CEO to help shape the company's overall strategic direction.

"With nearly 20 years in the biotech industry — the last two being at Agilent — Allison brings a wealth of experience to this role. Her depth of knowledge in global business and marketing will serve Agilent well as we look to continue our Build-and-Buy growth strategy," McMullen said.

Prior to joining Agilent in May 2018 as vice president of Business Development and Strategy for the company's Diagnostics and Genomics business, Ballmer spent nearly a decade of her career at Switzerland-based Roche, a multinational health-care company that operates pharmaceutical and diagnostics divisions.

She currently holds the role of lead director of the board of directors at Mission Bio, a California venture-backed company focused on genomics and precision medicine.

Ballmer holds a Bachelor of Science in mechanical engineering from Virginia Polytechnic Institute and State University.

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Coreform partners with INL to improve open-source modeling and simulation tool MOOSE

20 January 2021

Long before an advanced nuclear reactor begins to generate power or another complicated project comes to life, researchers and engineers model and simulate it to ensure success. Now a collaboration between Idaho National Laboratory and Orem, Utah-based Coreform makes this modeling and simulation faster, less costly and more efficient.

The partnership improves upon an open-source INL platform to make simulations more true to life, benefiting the many projects that leverage it.

"Higher fidelity simulations give you better confidence and a better understanding of the science," said Cody Permann, INL department manager for Computational Frameworks. "It can reduce costs in how one designs reactors or how new technologies are researched. Modeling and simulation can reduce the

uncertainty margins. It cuts costs.”

INL’s Multiphysics Object-Oriented Simulation Environment (MOOSE) is a general-purpose, open-source tool that has been used to analyze groundwater transport in Australia, research mining technology in Switzerland, and solve next generation reactor issues at INL and elsewhere. MOOSE works after systems being modeled are divided into tiny regions for simulation purposes, a widely used technique known as the finite element method. MOOSE then computes what happens in each of these small volumes, these finite elements, as they interact with each other under specified heat, pressure, vibration and other environmental conditions.

These calculations eventually result in a prediction of what will happen to the system over time. This information can be used to troubleshoot potential problem areas and locate possible failure points.

In this modeling technique, smaller finite elements result in a finer mesh of points where calculations take place. A finer mesh, in turn, leads to a more realistic simulation. However, the finer the mesh, the more computation and the longer the simulation runs. In fact, said Permann, the ratio of mesh points to run time is about 1:1. So, cutting the mesh points in half reduces the run time to about half.

“The mesh you build often has a strong effect on the accuracy and the efficiency of the simulation. So, for mission-critical applications, researchers and analysts need to have precise, fine-tuned control over their meshes,” said Gregory Vernon, Coreform Product Management director.

Coming up with the right mesh, though, has sometimes required costly commercial software or been a matter of trial and error using a brute force approach. What has been lacking, Permann said, was an inexpensive yet robust and efficient way to build the critical mesh of simulation points. That situation has now changed with the joint INL-Coreform project.

With this MOOSE enhancement project, INL has added Coreform’s easy-to-use, free for noncommercial use tool that helps researchers quickly generate the right set of mesh points for a specific set of circumstances. The MOOSE upgrade project was funded by a Department of Energy SBIR (Small Business Innovation Research) award, and Coreform’s part was built as a variant of the company’s commercial mesh generating software.

In its products, Coreform uses what is known as spline technology, a mathematical approach that can closely approximate the real world, explained Vernon. For instance, consider a cylindrical fuel rod (pictured below). Using a regular rectangular mesh of simulation points might not be the best approach when trying to model the fuel rod’s curved surface. In this situation, Coreform’s spline expertise could help in setting up a more appropriate mesh, perhaps one with spacing that varies to account for the fuel rod’s shape and characteristics.

Now that it has become available, the mesh generating tool has made the capabilities of MOOSE more accessible to researchers, expanding its pool of potential users. “With the release of this tool, the whole simulation and modeling workflow is complete and free. Anybody anywhere can get these tools off the internet,” Permann said.

Permann hopes that one outcome of the project will be wider use of MOOSE. Coreform may push that along by incorporating simulation capabilities in its products, with some of the analysis done by MOOSE. Further enhancements of MOOSE are also in the works.



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LTI and IBM plan to establish center of excellence to integrate solutions with customers

19 January 2021

Larsen & Toubro Infotech, a global technology consulting and digital solutions company plans to expand its multi-year, global alliance with IBM to help businesses transform their operations through open hybrid cloud adoption. With the proposed center, LTI will help their clients migrate and modernize core business applications leveraging IBM's open hybrid cloud platform built on Red Hat OpenShift.

LTI has developed industry ready solutions using hybrid cloud capabilities from IBM including Cloud Pak for Data and Cloud Pak for Automation, and offerings that integrate IBM Watson solutions, to help their clients automate, secure and update their business processes and applications. These include iDigitalization to automate workflow and digitize enterprise business processes, iMaximize to help modernize the enterprise integration landscape with pre-built accelerators, and Make-the-Shift to help overhaul legacy workloads.

As part of this relationship, LTI and IBM plan to establish a center of excellence in Bengaluru (India) in 2021. This center will offer a comprehensive suite of IBM's Cloud, Automation, Integration, Data & Artificial Intelligence (AI) solutions to foster innovation. IBM plans to provide training to LTI employees to facilitate creation workshops and IBM solution development for LTI clients.

Sudhir Chaturvedi, President-Sales and Executive Board Member, LTI said, "Some of the world's leading organizations trust LTI as the partner of choice in enabling their digital transformation journeys and modernizing their existing technology landscape. We are expanding our resolute relationship with IBM to allow customers to seamlessly embark on hybrid cloud environment with best-in-class automation and Integration."

Evaristus Mainsah, GM, IBM Hybrid Cloud and Edge Ecosystem said, "We look forward to expanding our collaboration with LTI to help customers across industries migrate and modernize their mission-critical workloads by leveraging IBM's secured and open hybrid cloud solutions. LTI's deep domain knowledge, coupled with IBM's open hybrid cloud and Cloud Pak offerings powered by Red Hat OpenShift, can help enterprises accelerate their digital transformation."



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Maplesoft launches new online math environment dedicated to teaching and learning

19 January 2021

Maplesoft announced the release of Maple Learn, a new online environment designed specifically for teaching and learning math and for solving math problems from high school to second year university. Maplesoft is the developer of the powerful math software Maple, which is used by mathematicians, educators, students, engineers, and scientists around the world. Maple Learn is an online version of Maple that is focused specifically on the needs of teaching and learning math. While we mark the official launch, over 5000 people have already used Maple Learn during its public beta this fall.

Instructors can use Maple Learn as an engaging environment that helps students learn math, whether they are in the classroom or involved in remote learning. Maple Learn provides great flexibility in problem-solving, allowing the educator to combine steps worked out by hand with computations performed by Maple Learn. This allows educators to focus their instruction time and students' attention

where it is needed most. In addition, instructors can create interactive explorations of mathematical expressions with a simple click of a button, enabling students to develop their conceptual understanding of concepts by watching the effects of changing parameters.

In addition to being a demonstration and problem-solving tool, educators can also provide illuminating graphs, computations, explanations, and interactive explorations all together in a single online document that is easy to share with their students. Users only need a web browser and internet connection to create, access, and interact with Maple Learn documents.

For students, Maple Learn provides an opportunity to solve a problem or create a graph instantly, such as when they are checking their homework, or to work out problems in the same way they would do on paper. When needed, students can then use Maple Learn to check individual steps to help them track down where they went wrong. And if they want more help, students can easily share their work with a classmate, tutor, or teacher. No matter where that person is located, they will be able to see everything the student has done, making it significantly easier to assist students who are at a physical distance.

Maple Learn is the latest member in the Maplesoft product family. Maplesoft's flagship product, Maple, combines the world's most powerful mathematics engine with an easy-to-use interface, a sophisticated programming language, education-specific features, and extensive connectivity and documentation tools. Students who initially use Maple Learn, with its exclusive focus on teaching and learning, will be able to transition to Maple if and when their needs grow. Complementary to both products is the free Maple Calculator App, which allows students to graph and solve problems on their phone, but also to move those problems into Maple or Maple Learn for deeper investigation.

"Maplesoft has worked with educators for over 30 years to develop software tools that support math education, and Maple Learn is a direct result of those discussions. Educators told us that, while Maple is a great tool for doing, teaching, and learning all sorts of math, some of their students found its very power and breadth overwhelming, especially in the early years of their studies. As a result, we created Maple Learn to be a variation of Maple that is exclusively focused on the needs of educators and students teaching and learning math in high school, two year and community college, and the first two years of university", says Karishma Punwani, Director of Academic Product Management at Maplesoft. "Of course, in the face of the pandemic and the vast increase of remoting learning, an online environment is more important than ever, and we hope that students and teachers dealing with remote learning this year will find that Maple Learn makes their lives just a little bit easier."



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PLATAINE ANNOUNCES NEW PATENT GRANT FOR MANUFACTURING OPTIMIZATION USING DIGITAL THREAD TECHNOLOGY

20 January 2021

Plataine, a leading provider of Industrial IoT (IIoT) and AI-based solutions for manufacturing optimization, has today announced that it has been granted US Patent #10852712, titled tracking production processes in a manufacturing facility using searchable digital threads. The solution that has been patented is a software-based method for tracking production across factory operations using Digital Twin and Digital Thread technology. Plataine uses cloud-based AI technology to create a virtual replica of the factory floor in real time, a Digital Twin, to track every element of production, from raw material to end product, creating a comprehensive searchable production record – the Digital Thread.

The newly patented method operates by tracking the location, status and operations of all key assets –

such as machines, tools, raw materials, kits, work-in-progress, and parts – in the production environment and monitoring them throughout the factory. This establishes full, real-time connectivity, recording the status and location of every asset to weave a searchable database of Digital Threads that can report on each production line, any time and everywhere on the production floor. Plataine's technology means that Plataine's software and manufacturing managers are always aware of what is happening at every stage of the production line, allowing them to constantly prioritize and optimize operations and also to take pre-emptive action to avoid future problems. Meanwhile, the Digital Thread allows full traceability for quality & quality control purposes, ensuring that highly regulated zero-error-tolerance industries such as aerospace, are always audit-ready.

Avner Ben-Bassat, President & CEO at Plataine, says: "We are excited to add another substantial recognition from the US Patent and Trademark Office (USPTO). The Industrial Internet of Things is employing digital technology driving a fourth industrial revolution, and we are rapidly moving into a future where all factories are able to track, trace and share all data in real-time. Our goal is to push the envelope of manufacturing with our Artificial Intelligence and IOT technologies, helping our customers at every step of their digital journey towards the transition into fully digitalized manufacturing. The new patent grant is yet another milestone in achieving this goal."

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PTC Appoints Mark Benjamin to Its Board of Directors

21 January 2021

PTC has appointed Mark D. Benjamin to its Board of Directors effective February 10, 2021.

"Mark's depth and breadth of experience driving growth initiatives for cloud, SaaS, and IoT solutions establish him as an innovator with a proven track record of success," said Jim Heppelmann, President and CEO, PTC. "Mark brings a valuable layer of expertise to our organization as we work to strengthen our leadership position in SaaS. We look forward to welcoming him to the Board."

Benjamin currently serves as CEO of Nuance Communications, Inc. (NASDAQ: NUAN), an artificial intelligence technology company providing solutions for large enterprises across the globe. Prior to joining Nuance, Benjamin served as President and COO of NCR Corporation and President of Global Enterprise Solutions at ADP.

"PTC is clearly differentiated as a leader in industry-defining technologies including industrial IoT, augmented reality, and SaaS," said Benjamin. "There is a clear synergy between my experience and the company's long-standing heritage in digital transformation. I am pleased to be joining the PTC board during this important juncture and look forward to lending my support as the company continues to innovate in these transformative technology fields."

Benjamin holds a bachelor's degree in International Finance and Marketing from the University of Miami.

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Event News

AVEVA's Third Digital Conference Assembles Environmental Sustainability Experts to Discuss how Technology Is Helping to Lower Carbon Footprint

20 January 2021

AVEVA, a global leader in engineering and industrial software, announced its third AVEVA World Digital (AWD) conference, themed '**Accelerate Your Digital Intelligence**' which will take place from 26-28 January 2021.

The online event will explore how leading companies are embracing innovation and applying intelligent software to reshape their industrial operations. It will demonstrate how emerging technologies such as AI, Cloud, Digital Twin, Visualization and data & analytics are supporting advancements in sustainability, and enabling organizations to make significant changes to improve the environment.

Technology is playing a vital role in achieving real-time optimization, improving decision-making, and digitally enabling business operations, supported by an often-remote workforce to drive substantial cost reductions. Furthermore, with COVID-19 exposing pressures on the industrial sector, sustainable business strategies have come to the forefront with CTOs now seeing sustainability as part of the transformation imperative. As a result, organizations are adopting real-time environmental monitoring to reduce the carbon emissions of heavy industries. Visualization, Digital Twin, Machine Learning and AI are technologies that are helping to manage these priorities.

As part of AWD's sustainability driven agenda:

- *Jean-Pascal Tricoire, Chairman & CEO, Schneider Electric*, will discuss how the quest for a more sustainable future is driving organizational innovation and opportunity in 2021
- *Lisa Johnston, CMO & CSO, AVEVA*, will focus on how forward-thinking organizations can accelerate their sustainability agendas
- *Jan Shumate, Director, Eastman Chemical Company*, will discuss how digital transformation at Eastman Chemical Company is driving sustainable innovation
- *An Executive Sponsor Forum*, led by Lisa Johnston, CMO & CSO, hosted by Lisa Wee, Sustainability Director, AVEVA, will feature speakers from Microsoft, Accenture & Verdantix focussing on 'Partnerships for a Sustainable Future.'

Craig Hayman CEO, AVEVA commented, "Digitalization and sustainability are two sides of the same coin. AVEVA's industrial software solutions support sustainable outcomes by plumbing our broad and deep specialist capabilities into the scale and scope of the Cloud, enabling our customers to deliver diverse environmental benefits via optimized engineering, operations and performance. As more of our customers demand it, we are working with them to innovate to drive sustainability. A clear digital strategy drives environmental outcomes, social improvements, and ethical governance, which ultimately enhances culture and improves long-term business sustainability."

The most Ambitious AWD Yet

With more than 50 training sessions as well as live networking, AWD attendees will receive in-depth insights into how to transform operations, level up digitalization, and stay competitive. An Interactive Virtual Expo will provide a forum for live chat with AVEVA experts through 10 strategic demo success stories across Asset Performance, Unified Engineering, Value Chain Optimization, AVEVA Connect,

Edge to Enterprise Operations, industrial AI, the connected worker, and more.

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Financial News

Bentley Systems to Announce Operating Results on March 2, 2021

20 January 2021

Bentley Systems, Incorporated, an infrastructure engineering software company, will release fourth quarter and its fiscal full-year 2020 operating results, before the market opens, on March 2, 2021. (The Company's filing schedule accords with its designation, for the initial public offering of its common stock in September, 2020, as an Emerging Growth Company).

During its presentation, the Company will provide its annual investor guidance for 2021 revenues, ARR growth, and Adjusted EBITDA.

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DXC Technology to Report Third Quarter 2021 Results on Thursday, February 4, 2021

19 January 2021

DXC Technology, the world's leading independent, end-to-end IT services company, announced that it will release financial results for the third quarter of fiscal 2021 on Thursday, February 4, 2021, at approximately 4:15 p.m. Eastern Standard Time (EST).

DXC Technology senior management will host a conference call and webcast on the same day at 5:00 p.m. EST. The dial-in number for domestic callers is 800-949-2175. Callers who reside outside of the United States should dial +1-323-994-2131. The passcode for all participants is 4526218. The webcast audio and any presentation slides will be available through a link posted on DXC Technology's Investor Relations website.

A replay of the conference call will be available from approximately two hours after the conclusion of the call until February 11, 2021.

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L&T Technology Services Reports Q3FY21 With Growth Across All Five Segments

20 January 2021

L&T Technology Services Limited announced its results for the third quarter ended December 31, 2020. Highlights for Q3FY21 include:

- USD Revenue at \$190 million; growth of 6.8% QoQ
- Revenue at Rs 14,007 million; growth of 6.6% QoQ
- EBIT margin at 15.2%; up 150 bps QoQ
- Net profit at Rs 1,861 million; growth of 12.4% QoQ

During the quarter, LTTS won 7 deals with TCV of USD10 million plus, which includes a USD100 million plus deal and 2 USD15 million plus deals. Revenues from digital and leading-edge technologies stood at 49% during the quarter.

“We had a strong performance with sequential improvement in both revenue and operating margin. All five of our industry segments grew sequentially, with three segments recording growth of 5% plus. Deal wins were especially strong in the quarter helped by a marquee USD100M plus engagement with an O&G major - a validation of our best-in-class domain expertise and deep customer relationships.

The deal pipeline is healthy across segments as customers prioritize business transformation to improve efficiency and productivity. We are leveraging newer technologies like Digital Thread, IoT and AI to further our positioning as innovation partners to our customers. I would like to highlight that the strong uptick in Industrial Products has been led by deals involving digital led transformational programs,” said **Dr. Keshab Panda, CEO & Managing Director, L&T Technology Services Limited.**

Industry Recognitions:

- LTTS won the Indian Digital Enabler Awards 2020 award in the ‘Best Tech for Healthcare’ category for XYZ Synthesizer, a scalable solution that can be easily extended for all kinds of digital & optical microscopes
- CIMS Medica honored LTTS as the “Company of the Year” in the Best Medical Devices Equipment category for the three-part haematology analyzer, built in partnership with Agappe Diagnostics
- Zinnov Zones rated LTTS as ‘Leader’ across Digital Engineering, IoT, AI and Digital Thread, and named the Company as Leader in 6 major verticals for the fourth consecutive year
- LTTS won Gold in the Golden Bridge Grand Awards 2020 in the “Human Resource Team” and “Best Use of Rewards and Recognition” categories
- Confederation of Indian Industry (CII) honored LTTS with the HR Excellence Awards 2020

Patents

At the end of the third quarter, the patents portfolio of L&T Technology Services stood at 593, out of which 440 are co-authored with its customers and the rest are filed by LTTS.

Human Resources

At the end of Q3FY21, LTTS’ employee strength stood at 16,069.



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Implementation Investments

3D BIM catalog for steel hinged doors opens the door to digitization for Novoferm

19 January 2021

Novoferm Netherlands, as one of the largest European system suppliers of doors, gates, frames and operators, is now making 3D BIM CAD product data of its steel hinged doors available for free download. Novoferm is thus expanding its existing product catalog for industrial doors based on the eCATALOG technology of CADENAS GmbH and further extending its BIM service for architects, civil engineers, structural engineers, TGA specialists and planners.

For component manufacturers such as Novoferm, it is becoming increasingly important to enrich their product data with digital BIM information and thus make it BIM-ready. The reason: Building Information Modeling (BIM) data is already mandatory for many publicly financed construction projects, for example in the UK, the Netherlands, Germany, Denmark, Finland and Norway. Digital planning brings many advantages for all those involved in planning and construction. As construction companies increasingly pre-model their buildings in 3D, errors can be avoided even before the start of construction.

Configure NovoPorta Premio steel doors easily

Novoferm recognized the enormous importance of 3D BIM CAD product data for building planning at an early stage and has already been providing intelligent BIM models of its industrial sectional doors, rapid roller doors and roller shutters for download in cooperation with CADENAS since 2017. In the fall of 2020, the product range of NovoPorta Premio steel doors has now also been added to the existing product catalog. "We can manufacture our fire-, smoke- and burglar-resistant steel hinged doors with one or two leaves, depending on the application, and supplement them with various supplies. Our customers can choose between different colors, locks, glazing and door handles," says Richard Veldhuis, Product Manager Hinged Doors of Novoferm Netherlands. This creates hundreds of possible combinations, which can be selected easily and quickly in Novoferm's online product catalog using a configurator. The product data can be downloaded in more than 150 common CAD & BIM formats, such as Autodesk Revit or AutoCAD, ARCHICAD, Nemetschek Allplan, SketchUp and Tekla Structures, among others, and integrated directly into the existing building design. The product information is provided in two different levels of development (LOD) relevant for the respective construction phases.

Making 3D BIM CAD models available to customers also makes building design much more vivid. The visual representation of the final building in 3D is made possible by means of a virtual tour of the premises. In this way, it becomes apparent, for example, whether the planned doors are correctly dimensioned even before groundbreaking.

Optimized planning process thanks to end-to-end BIM communication

The extended BIM CAD product catalog of Novoferm represents a real added value for architects, planners and civil engineers and significantly accelerates the planning processes by providing the 3D BIM CAD product models. Novoferm itself also benefits internally from the eCATALOG technology of CADENAS. Based on the extended product catalog, Novoferm additionally offers planners and architects the service of completing rough drafts or plans from planning companies with their BIM data from the product catalog. "Thanks to our 60 years of experience as a specialist in fire doors, smoke control doors as well as industrial doors and loading solutions, we know exactly which door can be placed where in plans under which circumstances. In this way, we work closely with our customers to solve many challenges even before construction begins, for example by lowering rail systems, narrowing a door or moving pipes," says Richard Veldhuis, Product Manager Hinged Doors of Novoferm Netherlands.

"We are very pleased that Novoferm relies on our solution for the successful implementation of its BIM strategy and thus supports architects and planners in their building planning effectively and with a promising future," says Markus Poppinghuys, branch manager of CADENAS Solutions GmbH.



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Altair and Rolls-Royce Germany Join Forces to Converge Artificial Intelligence and Engineering

19 January 2021

Altair, a global technology company providing solutions in data analytics, simulation, and high-performance computing (HPC), announced that it has signed a memo of understanding (MoU) with Rolls-Royce Germany to collaboratively connect artificial intelligence (AI) and engineering to derive business value across Rolls-Royce's engineering, testing, and design of aerospace engines.

Industries globally are increasingly seeking ways to leverage data analytics and AI to significantly increase revenues, cut costs, and reduce risks. Forward-thinking organizations like Rolls-Royce Germany are undergoing groundbreaking digital transformations and have identified engineering as a key area. In particular, the collaboration with Altair will address structural analysis and testing, bringing together vast amounts of historical product and in-service data from disparate sources to unlock new AI-driven engineering use cases to drive significant business value.

“As a pioneer of the convergence of data analytics and engineering, it's a natural fit for Altair to collaborate with Rolls-Royce Germany, an organization that sees the power of technology and the potential of AI to unlock game-changing business value,” said James R. Scapa, founder and chief executive officer, Altair. “The demand for easy-to-use, low/no code, yet flexible AI and machine learning tools has never been greater. It is an honor to be the technology provider of choice to help Rolls-Royce Germany boost its business while also further evolving our data analytics solutions.”

The Altair and Rolls-Royce Germany collaboration will address a wide variety of use cases, including applying data science to the vast amounts of engineering testing data, which can lead to a significantly reduced number of sensors needed. This single use case alone has the potential to reduce recurring costs by millions of Euros.

“We share a common vision on the convergence of AI and engineering to drive significant positive business outcomes. Altair has unique domain expertise and best-in-class, low-code data analytics technology. This collaboration will enable us to bridge the gap between engineering and data science, and empower our engineers to truly be engineers, focused on extracting the benefits of machine learning and AI from our data,” said Dr. Peter Wehle, Head of Innovation and R&T, Rolls-Royce Deutschland. “Ultimately this collaboration will help to democratize our data analytics, enabling our engineers to make better daily data-driven decisions, and transform our business and products.”

Rolls-Royce has been using AI and advanced data analytics at the heart of its business for more than 20 years, including in its world-leading engine health monitoring service, as well as manufacturing. It has recently announced two breakthroughs in AI ethics and trustworthiness, which it will publish for free on its website later this year.

Initially, Rolls-Royce Germany will leverage Altair Knowledge Works™ – a collaborative end-to-end data analytics platform – to enable engineers to apply machine learning (ML) methods utilizing simulation data, test data, manufacturing data, and operational data. Knowledge Works is designed so users can easily and efficiently access disparate data sources and formats in a low code/no code environment, transform the data, use it to build ML models, and share knowledge discovery across the business.



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French Manufacturer, Bonneterie Chanteclair, Digitalizes with Gerber to Transform for the Pandemic Era

19 January 2021

French knitwear clothing manufacturer, Bonneterie Chanteclair, is a certified Origine France Garantie, meaning all of their products are made in France. When the COVID-19 pandemic reached their home country, General Manager, Thomas Delise, knew he had to think outside of the box in order to protect his community and his employees. Rather than stopping garment production and furloughing employees, the company developed a high-quality mask with a HEPA filter, which was chosen by French President Emmanuel Macron. As Chanteclair began to receive many orders from regional administrations, they developed an eCommerce website to sell B2B and B2C. To help keep up with demand, Bonneterie Chanteclair began working with Gerber Technology, the leader in digitalization, to help them pivot their supply chain and remain agile so they could keep their doors open. Since March, Gerber's PPE Task Force has helped over 1,700 companies, just like Chanteclair, pivot to PPE production and helped them keep their doors open through the COVID-19 pandemic.

"We know digitalization and retooling are not easy. They're very complex processes that require numerous steps," said Olivier Austin, Sales Manager Digital Solutions for France of Gerber Technology. "Our team works with our customers to identify their needs and help implement the right technologies that will be most beneficial to them."

Gerber worked with Bonneterie Chanteclair to digitally transform their supply chain so they were able to keep up with the high demand for protective masks. Chanteclair acquired Gerber's full end-to-end solution, which includes Gerber's pattern making solution, AccuMark®, their automated nesting and cut planning solutions, AccuNest™ and AccuPlan™ as well as the Gerber Paragon®. With Gerber's end-to-end solution, Chanteclair was able to fulfill a high demand for masks in a short period of time, which was critical in helping their community fight COVID-19. The integrated solution also kept Chanteclair from having to furlough employees and keep their doors open as they navigate through the pandemic.

"Gerber has been extremely supportive throughout this entire process," said Thomas Delise. "Their innovative technology and team of experts have been critical throughout our transformation. We have been able to effectively digitize our entire workflow in such a short time, which is really remarkable."

After the pandemic subsides, Bonneterie Chanteclair plans to continue to strengthen their supply chain by adding more of Gerber's solutions to their workflow. The French manufacturer will develop a just-in-time production to allow themselves to easily meet consumer demands and tackle the challenge of customization.



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Helly Hansen Boosts Product Innovation with the Power Of 3D

19 January 2021

Centric Software® is delighted to announce the release of a success story about its customer, Helly Hansen.

During the disruptions of the COVID-19 pandemic, the renowned Norwegian outdoor performance brand was able to save weeks' worth of time during its product development process with the ability to quickly create and review 3D samples created within Centric Software's Product Lifecycle Management

(PLM). Centric Software provides the most innovative enterprise solutions to fashion, retail, footwear, outdoor, luxury, consumer goods and home décor companies to achieve strategic and operational digital transformation goals.

Founded in Norway in 1877, Helly Hansen is a leader in technical sailing and performance ski apparel, as well as premium workwear, with its outerwear, base layers, sportswear and footwear sold in more than 40 countries. The company has developed numerous first-to-market innovations, including the first supple waterproof fabrics more than 140 years ago, and today its ski uniforms are worn and trusted by more than 55,000 professionals around the world, including Olympians, National Teams and more than 200 ski resorts and mountain guiding operations.

As well as struggling with data management, visibility and version control across multiple software platforms, when the Helly Hansen group acquired MUSTO in 2018, integrating a new brand brought additional challenges.

“Before Centric PLM™, one of our biggest challenges was a lack of accountability, with each department using different tools and platforms. We’re growing fast and, in order to develop innovative, high-quality products efficiently, we needed a clear overview of who was doing what, where and when,” says Ferdinand Diener, Process and Quality Manager at Helly Hansen.

Helly Hansen implemented Centric PLM in just six months while also merging with MUSTO. One of the biggest initial benefits for Helly Hansen was the ability to get both brands onto one platform very quickly.

“Because Centric PLM is so fast and easy to use, people are able to do a more thorough job, create more products and improve quality oversight,” says Diener. “We’re a quality-driven, innovation-focused brand, so this is critical.”

What’s more, at the start of the COVID-19 pandemic with social distancing imposed and travel halted, it was difficult to review physical samples, with sample production severely delayed, or even cancelled altogether.

However, with innovative digital solutions provided by Centric PLM and 3D Connect technology giving expanded 3D functionality to PLM users, Helly Hansen has been able to adapt to recent market disruptions, improving the efficiency of its communications across different departments, particularly around sample production. There was the added benefit of becoming more sustainable in the process and reducing their carbon footprint due to a decreased need for physical samples, reduced shipping, material waste, etc.

“Centric’s 3D Connector now helps us with communication, and we can do things last minute that we couldn’t have done previously. For example, if a physical sample isn’t available, or we don’t want to wait weeks for a prototype to arrive, we can create a 3D version in a matter of hours,” says designer Mhairi Bannerman, who works within the ski and sailing team on Helly Hansen’s technical garments.



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Komerční banka Creating a Digital Future with Syncordis

20 January 2021

Komerční banka will start a gradual migration to a new software platform from Temenos this year. Syncordis will deliver and implement the system. This is one of Komerční banka’s most crucial investments ever; the objective is to achieve the reference level of the digitalisation of banking services

in the Czech Republic.

“The signing of the contract with Syncordis and Temenos constitutes for us a strategic investment in our future. It is a crucial milestone in Komerční banka’s history, which confirms our digitalisation leadership in the Czech banking market. We regard the opportunity to work with partners who share our approach to innovation and will help us to use the latest technologies for the benefit of our clients as a natural and integral part of our efforts,” said Jan Juchelka, Komerční banka’s Chairman and CEO, adding: “Growth of our clients’ satisfaction and improvement in overall customer experience are some of the primary and natural objectives of this investment.”

Pierre Servais, Syncordis’s Chief Business Officer EMEA (Europe, Middle East and Africa), noted: “We are delighted to have this opportunity of strategic cooperation with Komerční banka in its drive to transform the main banking operations, and of directing its digitalisation journey. Innovation and the willingness to transform is the key in today’s constantly changing world. Thanks to the powerful Temenos technology and Syncordis’s extensive expertise in implementation, Komerční banka will be able to leverage the new possibilities of digital banking, and to provide its customers with new experience based on the foundations of a cutting-edge technological environment.”

Komerční banka’s long-term partnership with Syncordis includes the supply and implementation of the Temenos banking software that will support the bank and its subsidiaries in continuing their digitalisation, in simplifying the range of their products, and in enhancing security and sustainable business.



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SEEPEx Selects OpenText To Manage Mission-Critical Information

18 January 2021

OpenText™ announced SEEPEx, a leading global pump manufacturer, is leveraging OpenText™ Content Suite and OpenText™ Extended ECM for SAP® Solutions to manage the complete lifecycle of company information. Carefully managing mission-critical information is vital to help SEEPEx provide the highest levels of service across complex international markets. OpenText solutions help SEEPEx achieve compliance, improve customer service, and maximize the value of its information.

SEEPEx offers customized solutions with progressive cavity pumps, pump systems, and digital solutions for a wide range of applications in nearly every industry. Historically, SEEPEx used a combination of systems to store and manage information related to the design, manufacturing, installation, operation, and maintenance of their products. The company needed a single solution to support information management across the entire product lifecycle – from design drawings, to operational manuals, to customer emails – and it needed to be accessible from within their SAP system.

“The decision to extend our use of OpenText was an easy one,” said Roland Rottländer, Data Processing Manager, SEEPEx. “OpenText provides exactly what we need; a single, enterprise-wide content management platform for our 800 users. OpenText provides faster processing speeds, agility, reduced costs and improved compliance by making content available from anywhere and regardless of the original document source. They help us meet our goals of delivering business growth, outstanding customer service and customer retention.”

With OpenText, SEEPEx users across business functions can now perform their daily activities with greater ease. SEEPEx is leveraging the following OpenText solutions to manage their growing volume

of information:

- OpenText Content Suite to connect information across the enterprise with the people and systems that need it, while instilling industry-leading governance at every stage.
- OpenText Extended ECM for SAP Solutions to streamline the management, storage and sharing of information across business processes by making content available in and out of SAP.
- OpenText Email Archiving for Microsoft Exchange to manage email, reduce storage costs and improve server performance.
- OpenText Archiving for SAP Solutions to securely archive all SAP business documents and data, while keeping it readily accessible.

“User feedback has been positive, and the OpenText solutions are mission critical to SEEPEX. There is now one, and only one, central system that all personnel use and rely on,” added Rottländer.

“By removing disparate information siloes, SEEPEX now has a comprehensive view of all of their information,” said Ted Harrison, Executive Vice President, World Wide Sales at OpenText. “OpenText information management solutions have helped them improve information access, bridge isolated process siloes, and provide their global users with a single version of the truth while helping to ensure governance is applied, wherever and however content is created.”

SEEPEX worked closely with OpenText partner Doctra GmbH to plan and implement the project. As they look to the future, SEEPEX will implement the latest innovations for a more tailored user and mobile experience. Additionally, any business applications with document management elements will be considered for inclusion in the OpenText platform.



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Sondrel Selects Synopsys Fusion Design and Verification Platforms to Displace Legacy Design Tools

19 January 2021

Synopsys, Inc. announced Sondrel has adopted the Synopsys Fusion Design™ and Verification Continuum® platforms to accelerate the design and verification of large, complex system-on-chip (SoC) designs for automotive, AI, machine learning, IoT, consumer AR/VR gaming, and security applications. Sondrel plans to use solutions from Synopsys' design and verification platforms to create power-efficient designs for their customers.

As Sondrel expands its capabilities to transform designs into tested, volume-packaged silicon, Synopsys was chosen based on several critical benchmarks to replace its legacy design systems. Synopsys' track-record of power-efficient designs and power, performance and area metrics drove Sondrel's decision to adopt the industry-leading design and verification technologies enabling power-efficient SoC designs with the best quality-of-results (QoR) and time-to-results.

"Customers come to Sondrel for solutions that push the boundaries," said Graham Curren, Sondrel's CEO and Founder. "Every year, SoCs become larger and more complex. Our reputation is built on delivering these leading-edge designs on time and on budget. And, to do that, we need the best-in-class tools such as the Synopsys comprehensive digital and verification full-flow solutions. We have collaborated closely with Synopsys for many years and they are a trusted partner who always goes the extra mile to help us exceed our customers' expectation."

Sondrel plans to use Synopsys' design and verification platform solutions to enable the creation of some

of the most complex and power-efficient architectures for their customers. Sondrel's focus on the design of large digital multi-core complex fabrics stems from decades of extensive expertise configuring leading processor architectures and targeting advanced process nodes from leading foundries.

"Through our collaboration, Sondrel's customers can leverage Synopsys' industry-leading platform solutions to design and verify complex, power-efficient SoCs for various markets," said Sanjay Bali, vice president of product marketing at Synopsys. "Sondrel can confidently achieve product differentiation and the highest level of productivity utilizing Synopsys comprehensive design and verification solutions for its designs."

The Synopsys Fusion Design Platform solutions and features include:

- Fusion Compiler™ RTL-to-GDSII implementation system
- IC Compiler™ II place-and-route solution with machine-learning technologies
- Design Compiler® NXT leading synthesis solution for advanced nodes
- IC Validator physical signoff delivering cloud-optimized physical signoff including DRC, LVS, PERC and Fill
- PrimeTime® golden timing signoff solution
- PrimePower for RTL to signoff power analysis
- StarRC™ golden signoff parasitic extraction solution
- TestMAX™ DFT provides comprehensive advanced design-for-test solution across a range of complexities
- Formality® equivalence checking for rapidly growing chip functionality and best verifiable QoR

The industry-leading verification software solutions from the Verification Continuum platform enable Sondrel to perform scalable SoC verification, including:

- Platform Architect™ Ultra for early SoC architecture analysis and optimization
- VCS® simulation with native low power simulation for mixed language RTL and gate level with the smallest memory footprint
- Industry de facto standard Verdi® advanced debug solution
- Verification IP for emerging titles
- VC SpyGlass® for RTL signoff and VC LP™ for static low power signoff



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USGS Selects Woolpert for Topographic Lidar Task Order in Hawaii

19 January 2021

The U.S. Geological Survey has awarded Woolpert a task order under its Geospatial Product and Service Contract 3 to acquire Quality Level 1 topographic lidar data in Hawaii. The task order applies to Oahu, the four islands in Maui County and portions of the Big Island of Hawaii. It is funded by the USGS, with interagency cooperation from the National Oceanic and Atmospheric Administration's Office for Coastal Management. The Natural Resources Conservation Service, the Federal Emergency Management Agency and the State of Hawaii, Office of Planning, also contributed to the task order and

will be end users of the data.

This is Woolpert's third task order to collect QL1 lidar data in Hawaii as part of the GPSC 3 contract. The firm has acquired a combination of approximately 6,600 square miles of topographic and 125 square miles of bathymetric lidar data encompassing the state's eight main islands as part of a systematic plan to produce Hawaii's first statewide, high-resolution elevation dataset.

The elevation data collected will be made public and used for a broad range of applications, including coastal zone management and resilience, flood-risk management, infrastructure and construction management, forest resource management, wildlife and habitat management, invasive species mitigation and change detection due to volcanic activity.

For this most recent task order, Woolpert is employing its Leica Chiroptera 4X bathymetric and topographic lidar sensor to enhance the quality of the deliverable. Woolpert Vice President and Maritime Market Director John Gerhard said the firm realized the benefits of utilizing the bathymetric laser over land during its previous Hawaii task order.

"The bathy channel is able to penetrate Hawaii's dense vegetation to complement the data collected via the sensor's topo channel. This bathy channel improves our vegetation penetration and provides additional bare-earth data for a comprehensive, highly accurate product," Gerhard said. "The Chiroptera sensor also operates at a lower altitude, which enables us to fly below the clouds while providing better data coverage of the islands. With Hawaii's challenging climate and terrain, this approach will best support the vital needs of the USGS."

The lidar data acquisition is now underway, with a data deliverable review by USGS expected to begin in the fall.



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Product News

Ansys Launches HFSS Mesh Fusion, Redefines Product Development by Enabling Design of Entire Systems

21 January 2021

Ansys is helping engineering teams to mesh and solve larger designs than ever with the launch of Ansys HFSS Mesh Fusion. Cutting development expenses and expediting the development of leading-edge products, HFSS Mesh Fusion drives rapid and fully coupled simulation of complex EM systems — without compromising the design or fidelity.

Modern electronic products are more sophisticated than ever, with higher density, lower voltage margins and more advanced processes. To deliver innovation, engineers must increase functionality and maintain or even decrease power consumption within a smaller form factor. As these designs become more challenging, engineers must solve complex interactions between components and across systems, critical for designing cutting-edge artificial intelligence machine learning, autonomous vehicle, 5G communications, high-performance computing and Industrial Internet of Things applications.

HFSS Mesh Fusion, available in Ansys HFSS 2021 R1, helps engineers combine integrated circuits (IC), packaging, connectors, printed circuit boards, antennas and platform in a single Ansys HFSS analysis to predict EM interactions. HFSS Mesh Fusion bypasses previous barriers by applying optimal meshing technology at the component level, parallelized across cores, clusters or within Ansys®

Cloud™. A breakthrough solver technology then extracts a fully coupled, uncompromised, full-wave EM matrix. By enabling much more complex designs to be solved, companies can confidently push the limits of performance to create state-of-the-art products.

"Increasing levels of electronic system integration are leading to a greater demand for comprehensive EM system analysis," said Sangyun Kim, vice president, Foundry Design Technology Team at Samsung Electronics. "Ansys HFSS Mesh Fusion makes it possible for our talented engineering teams to create optimal designs, shrink design cycles and cost and increase the value that we deliver to our customers. Leveraging Mesh Fusion, we are innovating highly advanced designs that were previously unimaginable. In fact, for the customer's latest flat panel TV, we simulated the EM transmission of an entire room."

HFSS Mesh Fusion helps engineers swiftly overcome the most challenging design obstacles to deliver best-in-class products to customers.

"Ansys HFSS can solve any structure, regardless of complexity, enabling creative out-of-the-box designs. The new HFSS Mesh Fusion technology will allow us to tackle even more comprehensive, uncompromised simulations with HFSS, further validating it as our 'virtual laboratory'," said Clyde Callewaert, senior engineer at Herrick Technology Labs. "Because with HFSS in the loop, we go into the lab to confirm results, not discover them."

By solving the most complex EM models, HFSS Mesh Fusion delivers critical design data that improves end products.

"HFSS Mesh Fusion helps IC designers effectively manage the capacity, complexity, dimensional range and density of geometric detail in a fully coupled EM simulation," said John Lee, vice president and general manager at Ansys. "This empowers engineers to break the old rules, innovate leading-edge designs at higher frequencies and within tighter form factors, tape out with confidence and deliver trailblazing products with more functionality than ever thought possible. This supports numerous highly sophisticated applications, including 5G communications, autonomous driving and many more."



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CADprofi 2021.05

18 January 2021

We would like to inform that new version of CADprofi 2021.05 is available.

Below you can find a quick overview of CADprofi 2021.05 changes:

- CADprofi Architectural – drawing walls with insulation
- CADprofi Electrical – extension of the fire protection symbols library
- CADprofi HVAC & Piping – extension of the household appliances symbol library
- Extension of ABB library – electrical schemes
- Update of Elko-Bis library
- Update of manufacturers' libraries: ABB, Elko-Bis, ETI.
- CADprofi 2021.05 has been adjusted to work with latest CAD programs, including: AviCAD 2021, CADian 2021, CADdirect 2022, CADopia 21, CADMATE 2020 and SilicaCAD 2021. CADprofi 2021 currently works with many base CAD programs including: AutoCAD (since the

2000 version), BricsCAD, GstarCAD, IntelliCAD, progeCAD, ZWCAD, ARES Commander Edition **and others**.

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Dave Edwards Consulting Offers Font For Tech Docs And CAD Users

19 January 2021

Dave Edwards Consulting is announcing "Project Newplex" – an SHX font designed exclusively to meet the needs of CAD users and technical documentation.

"After years of supporting the font needs of CAD users, we decided to step back and take a hard look at the fonts being supplied with the most popular software. We researched what characters sets were being offered and which special characters most users were requesting. By meticulously examining hundreds of fonts from the industry's best designers, we learned what techniques would create fonts which offered the best features for CAD users in terms of advanced character sets and readability. After years of exhaustive research, code development, and user feedback, we have created Project Newplex." -- David William Edwards, Dave Edwards Consulting

Features:

- Compatible with all DWG-Based CAD Software that support Unicode SHX fonts
- Advanced characters from for readability and clarity
- Designed for drafting
- Extensive international character set
- Includes the most requested technical characters

What some of our users are saying:

"I love this font! The clarity and readability are fantastic."

E. Scott Godwin, Senior Project Manager/CAD/BIM/IT

McKean & Associates, Architects, LLC

"I have been looking for this type of font solution for the last 20 years."

Gary Rohrabough, CEO

Softsource, LLC

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Hilman Product Catalog Available on TraceParts CAD Content Platform

21 January 2021

Hilman Inc., a manufacturer of high capacity rollers, powered heavy moving systems, and custom load moving solutions, has partnered with TraceParts to publish its 3D product catalog.

Hilman's 3D content catalog, containing their chain action rollers and dollies, is now available on the TraceParts website and the TraceParts Publishing Network with access to more than 10,000 CAD files for 170 of Hilman's most popular products.

The TraceParts platform is an excellent way to introduce our products and enhance their reach and visibility to a wider audience.

It is a powerful marketing solution that will help Hilman grow as a company and to help us deliver an unmatched digital customer experience to our customers. said Samantha Reidy, Director of Marketing at Hilman

With more than 65 years of innovation and experience, Hilman has earned and maintained a reputation for offering its customers the highest standards of quality, consistency, and value, making them a world leader when it comes to heavy load moving solutions.

We are proud to welcome Hilman to the TraceParts Publishing Network which includes 1,000+ catalogs and we are excited to be working with Hilman on digitizing and delivering their products as 3D product data to millions of engineers and designers worldwide. said Rob Zesch, President of TraceParts America



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Infosys Builds applied AI Cloud, Part of Infosys Cobalt, to Democratize AI Within its Workforce and Expand Ability to Drive AI-driven Transformation for Enterprises

19 January 2021

Infosys, a global leader in next-generation digital services and consulting, announced the launch of an Infosys Cobalt offering - its applied AI cloud, built on NVIDIA DGX™ A100 systems, the universal system for all AI workloads, offering unprecedented compute density, performance, and flexibility. The powerful new Infosys applied AI cloud will be an AI center of excellence for the company, enabling developers and project teams at Infosys to quickly and easily access AI hardware and software stacks, across both private and public clouds, to build contextualized services that deliver AI-first business processes for enterprises. NVIDIA DGX A100 systems will provide the infrastructure and the advanced compute power needed for over 100 project teams to run machine learning and deep learning operations, simultaneously. NVIDIA Multi-Instance GPU (MIG) technology will enable Infosys to improve infrastructure efficiency and maximize utilization of each DGX A100 system. Teams can process AI algorithms centrally or locally on any device, without lag, using Infosys edge AI.

As a service delivery partner in the NVIDIA Partner Network, Infosys will also be able to build NVIDIA DGX A100-powered, on-prem AI clouds for enterprises, providing access to cognitive services, licensed and open source AI software-as-a-service (SaaS), pre-built AI platforms, solutions, models and edge capabilities. Infosys will enable businesses to harness their own data estates, open source data and curated data exchanges on the cloud to build and train their AI models. Enterprises can leverage this advantage, along with services delivered by any hyperscale cloud provider to scale and future-proof their AI-powered transformation.

“For a long time now, AI has been playing a key role in shaping consumer experience. Cloud, data analytics and AI are now converging to bring the opportunity for enterprises to not just drive consumer experience but reimagine processes and capabilities too,” said **Balakrishna D.R., Senior VP, Head - AI & Automation Services, Infosys**. “Infosys applied AI cloud, powered by NVIDIA DGX A100 systems, can help enterprises to quickly build on the opportunity, while scaling with new technological advancements.”

“Many organizations are eager to infuse their business with AI but lack the strategic platform on which

they can pool expertise and scale the computing resources needed to build mission-critical AI applications,” said **Charlie Boyle, Vice President and General Manager of DGX Systems at NVIDIA**. “Working with Infosys, we’re helping organizations everywhere build their own AI centers of excellence, powered by NVIDIA DGX A100 and NVIDIA DGX POD infrastructure to speed the ROI of AI investments.”

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Launching Infosys Cortex: AI-First, Cloud-First Customer Engagement Platform, Part of Infosys Cobalt, to Humanize Customer Experience, Empower Agents and Drive Intelligent Operations for Enterprises

20 January 2021

Infosys, a global leader in next-generation digital services and consulting, announced the launch of Infosys Cortex, its customer engagement platform. The platform leverages technology from Genesys, a global leader in cloud customer experience and contact center solutions, along with Contact Center AI services from Google Cloud and its managed artificial intelligence (AI) and analytics services.

Infosys Cortex helps businesses reimagine customer care operations by providing intelligence to aid purposeful customer communication, smarter and faster decision-making, and deliver value at scale. Using the power of cloud and a modular microservices based architecture, it helps enterprises achieve up to 40 percent faster and more effective agent hiring and learning. It also brings up to 30 percent improvement in agent performance with training before operationalizing the contact center.

Furthermore, Infosys Cortex drives up to 30 percent improvement in satisfaction for customers through intent prediction and self-service, along with up to 40 percent improvement in operations through cognitive automation and analysis of contextual data across systems using Infosys Data and Analytics Platform powered by Google Cloud. Infosys’ ability to provide deeper integration in the enterprise by developing and reusing connectors for existing enterprise information systems makes implementation smooth and seamless.

Infosys Cortex will tightly integrate with Genesys Engage™, a robust omnichannel engagement solution built on a multicloud architecture. Together, the solutions will allow organizations to deliver fast, convenient, and personalized interactions at every touchpoint. In addition, the open architecture of Genesys Engage and a rich ecosystem of tools and capabilities will enable businesses to customize the solution so they can better address the unique challenges and objectives of their industry and customers.

As enterprises prepare for the next normal, Infosys Cortex will help them harness AI services from Google Cloud. Together with Google AI-powered voicebots, chatbots, interaction analytics, and an industry-leading IVR from Genesys, businesses can shift from being remote-ready to driving digital customer service from anywhere. They can also grow the effectiveness of their customer care with increased first-call resolution, reduced average handle time, decreased call volume, and improved service-to-sales conversion.

“Our experience of managing the IT landscapes of large complex enterprises, expertise across industry domains, and strengths in enabling workforce learning uniquely equips us to help businesses deliver customer delight. With Infosys Cortex, we can now share with them the digital capabilities to future-proof their customer relationships”, said **Ravi Kumar, President at Infosys**.

“The next wave of CX solutions are built to improve decision velocity. Machines can make 100 decisions per second, humans can make one per second but often get bogged down in management

committee for weeks,” said **R “Ray” Wang, Founder and Chairman, Constellation Research, Inc.** “When AI is applied to CX, agents have the context they need to make faster and more precise decisions. As agents are augmented by AI, they can deliver more personalized experiences.”

“We’re proud that Infosys has selected Google Cloud’s Contact Center AI to power its Cortex customer engagement platform,” said **Kevin Ichhpurani, Corporate Vice President, Global Ecosystem at Google Cloud.** “More than ever, it’s important that businesses deliver positive experiences for consumers, and help them resolve questions or issues quickly and effectively even while teams and agents are working remotely. By leveraging Google Cloud’s managed AI and analytics services, Infosys Cortex delivers these capabilities to enterprises, enabling them to spin up new AI-powered customer engagement services quickly and ultimately helping businesses better serve their customers.”

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Samsung Foundry Certifies Analog FastSPICE Platform from Siemens for Early Design Starts on 3nm GAA Process Technology

21 January 2021

Siemens announced that its industry-leading tools for the verification of analog/mixed-signal (AMS) circuits are now qualified for early design starts on Samsung Foundry’s new 3nm Gate All Around (GAA) process technology.

With this certification, customers can now verify their early-stage AMS designs using the Analog FastSPICE™ (AFS) platform on Samsung’s most advanced process technology. Samsung’s 3nm GAA platform is engineered to reduce total silicon size, use less power and improve performance over previous process nodes.

“Samsung and Siemens have an established track record of collaboration to enable our mutual customers to fully leverage the AFS platform, and we are pleased that the AFS platform is now certified for early design starts on the very latest Samsung Foundry process,” said Sangyun Kim, Vice President of Foundry Design Technology Team at Samsung Electronics. “The combined expertise of Samsung Foundry and Siemens provides designers the ability to develop and quickly verify innovative ICs for a variety of high-growth markets and applications.”

With this new certification, the AFS platform is now enabled in Samsung Foundry’s device models and design kits. Mutual customers rely on the AFS platform to deliver nanometer-scale SPICE accuracy while verifying analog, radio frequency (RF), mixed-signal, memory, and custom digital circuits faster than with traditional SPICE simulators.

“With its newest process, Samsung Foundry continues to deliver highly innovative technology for the manufacture of the most sophisticated of IC designs,” said Ravi Subramanian, Ph.D., Senior Vice President, IC Verification Solutions, Siemens Digital Industries Software. “We are pleased to collaborate with Samsung Foundry to help enable our mutual customers to design and manufacture advanced ICs. We look forward to continued collaboration with Samsung Foundry on future advanced technology developments catering to innovative applications.”

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Vlier Products Part Catalog Available on TraceParts CAD Content Platform

19 January 2021

Vlier Products, a manufacturer of spring loaded devices, quick-release devices, Vlier lock pins, leveling devices and mechanical components, has partnered with TraceParts to publish its 3D product catalog.

Vlier has been an industry leader for more than 75 years, with its precision-made products serving such industries as aerospace, medical, defense, telecommunications, transportation and more.

We are excited to publish our products on the TraceParts website and the TraceParts Publishing Network.

The TraceParts platform is an excellent way to introduce our products to a new market, and enhance their reach and visibility to a wider audience. said Russ Mitchell, Sales & Marketing Manager at Vlier

We are proud to welcome Vlier to the TraceParts Publishing Network, which includes more than 1,000 industrial catalogs, and we are excited to be working with them on digitizing and delivering their products as 3D product data to millions of engineers and designers worldwide. said Rob Zesch, President of TraceParts America



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Zemax launches native diffraction calculation and new analysis functionality

20 January 2021

Zemax announced the latest release of their flagship software, OpticStudio®, and OpticsBuilder™. Continuing our commitment to deliver regular updates to our customers, Zemax will deliver three product releases in 2021, the first in January (21.1) followed by May (21.2) and September (21.3) releases. OpticStudio 21.1 starts the year by empowering the growing role of diffractive optics within the augmented reality and heads-up display markets. This release also adds new tolerance operands for users to align designs more easily to real-world assembly methods. In addition, this release debuts two new feature experiments that improve wide-angle ray aiming for autonomous vehicles and provide a new optimization algorithm. OpticsBuilder 21.1 improves optomechanical assembly analysis by allowing users to add sources and detectors directly in CAD.

“I am delighted to start the new year by providing new functionality to our Zemax community,” said Dr. S. Subbiah, Chief Executive Officer of Zemax. “Our customers continue to innovate by pushing the boundaries of traditional optical design. By providing native diffractive optics support within OpticStudio and improved design analysis within OpticsBuilder, our users can continue to push past current design constraints. This release is the start to many exciting announcements coming in 2021.”

OpticStudio: New Diffraction Calculation

Diffractive optics are playing an increasingly important role in the innovations taking place within the optics and photonics industry. OpticStudio users are leading this innovation. In support of their work, we have added the Kogelnik diffraction efficiency calculation into the 21.1 product update. This provides one of the most comprehensive solutions for modeling the role of diffractive optics within a simulation platform. We are excited to see how the Zemax community continues to pioneer the role of diffractive optics within the augmented reality and heads-up display markets.

OpticStudio: New Tolerance Setups Operands

In 2020, OpticStudio delivered new functionality focused on improving our users' ability to design and manufacture optical products. OpticStudio 21.1 continues this theme by introducing new tolerancing operands. With the addition of our ROLL tolerance setup operands and our Radial Decenter operand, users can easily setup tolerancing to match real-world assembly methods.

OpticsBuilder: New Analysis Functionality

OpticsBuilder 21.1 improves how users analyze optical systems. With this release, users are now able to include additional sources and detectors to their optomechanical design for further analysis within their CAD platform. Users may also view an incoherent irradiance report for an object as a detector for additional insights when building their optical products in CAD. This release also gives users access to the full Zemax glass catalog for more options when analyzing designs within their CAD platform.

OpticStudio: Feature Experiments

Users will also notice that OpticStudio 21.1 includes a couple new feature experiments. These include new wide-angle ray aiming capabilities and a new optimization algorithm for pseudo second derivatives. These feature experiments are a preview to some of the features planned for our next release in May. We encourage users to try out these features and share their feedback with us.



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