PLM Weekly Summary

Editor: CIMdata News Team

18 September 2020

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CIMdata News

CIMdata Vice President, Stan Przybylinski, to make a Keynote Presentation at ESTECO International Users Meeting

15 September 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that its Vice President, Stan Przybylinski, will make a keynote presentation at ESTECO's International Users' Meeting. The meeting will be held on 30 September – 1 October in Trieste, Italy and will also be available on-line.

Mr. Przybylinski's presentation, Product Development in a COVID-19 World, will provide an update on the global Product Lifecycle Management (PLM) market, which grew strongly in 2019. He will also share CIMdata's view of how the COVID-19 pandemic will impact 2020 market results and the management of the product lifecycle.

Mr. Przybylinski has over 30 years of experience in the development of business-enabling IT solutions for research, engineering, and manufacturing organizations worldwide. He has worked in R&D, marketing, and communications with both Fortune 100 companies and small organizations. At CIMdata, he is responsible for the firm's research agenda, including the CIMdata PLM Market Analysis Report series. Mr. Przybylinski has been directly involved with the selection, consulting, integration, and implementation of large-scale PLM solutions. Additionally, he has worked on projects for both PLM solution suppliers 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.

For more information about the presentation, please visit: https://www.cimdata.com/en/events/cimdata-supported-events/event/564-um-esteco-users-event.

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Interview: Talisen and Boeing Talk Collaboration

16 September 2020

Key takeaways:

Talisen Technologies, Inc. and The Boeing Company are jointly developing a next generation OEM/Supplier collaboration solution.

The solution focuses on three product development areas: communication of upfront requirements, interactive collaboration during product design, and collaboration during product servicing.

CIMdata recently had the opportunity to interview Mr. John Stevens, SVP Aerospace & Defense, Talisen Technologies (www.talisentech.com), and Mr. Neil Lichty, Senior Technical Specialist, The Boeing Company, about their combined efforts to provide an OEM/Supplier collaboration solution that could support Boeing into the future. In addition, they hope to set a collaboration standard that all aerospace and defense companies can adopt. [1]

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

CIMdata: What is the joint business and technical strategy of Talisen and Boeing for OEM/Supplier collaboration?

Neil Lichty: From a Boeing OEM perspective, we need a collaboration network with our business integration points across our product lifecycle. Talisen fills a role for Boeing helping us specialize in what is the upfront collaboration needed when we are starting project work or design work; what is interactive collaboration during our compliance venues when we need to collect data from our business partners and suppliers; and ultimately how do we fulfill that once our product is in service.

We work with Talisen in all three areas and connect across that lifecycle so that our collaboration has consistency. We know the industry wants consistency and standardization. Now that we have a pattern in place, industry can take advantage of that as well. Our collaboration has too much variety and the cost patterns and efficiencies dictate that we must apply more energy to stabilize.

John Stevens: Talisen's overall strategy is to drive business value with our customers by using innovative and proven technologies, applied expertise, and speed of delivery. We help customers, like Boeing, with the adoption, implementation, and operational support of aerospace technologies in the areas of digital collaboration, secure gateway systems, technical authoring, and supply chain procurement.

Our OEM strategy with Boeing is to assist with strategic planning, implementation, and facilitation in the use of supply chain technologies. In supporting Boeing's goal of a collaboration network, we've developed specific software for supplier requirements exchange, data transmittal, and obsolescence management.

CIMdata: Many commercial collaboration solutions in the market today focus on the engineering design aspect of product development. Does Talisen see a wider audience for collaboration in such areas as manufacturing and service?

John Stevens: Absolutely. Engineering is just one aspect, albeit a very important one, of the collaboration space. We look at it as an ecosystem. It is not just an OEM engineer to supplier engineer collaboration. It is a community of collaboration. The full collaboration between an OEM and supplier with respect to product design, support, and obsolescence encompasses engineering, quality, purchasing, and standards organizations. It crosses the verticals of PLM, ERP, and manufacturing. The collaboration suite is geared towards engineering, but the totality spans internal and external organizations responsible for product design, procurement, and support. Add in the complexity of sub-tier suppliers and there is a significant need for streamlined communication and collaboration. The ability of Talisen's Model Based Exchange (MBX) suite aligns the broader processes of OEM-supplier collaboration to ensure consistency, traceability, risk mitigation, and performance analysis for a better product.

Neil Lichty: We cannot afford to look at collaboration from a silo perspective only. The architecture says engineering and purchasing must play together. Today our business rules do not support that culture. In the architecture of the solution we looked at how to bring those two forces together. By default, the force of the supplier comes into play. So, we are creating a shared collaboration workspace that encompasses all organizations and domains.

CIMdata: What are the challenges you face in your approach to the collaboration problem?

Neil Lichty: The one challenge that stands out the most is we have had difficulty advancing an operational concept that reduces the current experience of intensive personal touch time. We need to break through the culture of people wanting to control things locally to them. We talk about the digital environment as though it is natural to go there, but it is very much against the traditional expectation that—*I control what I do because it is right in front of me*.

The biggest challenge in front of us is transformation of the attitude—*You mean I will put my information out for everyone to see it and we will work together?*

John Stevens: I see two significant challenges in tackling collaboration. Perhaps the biggest challenge is data consistency across the collaboration ecosystem. Is each link in the supply chain looking at the same version of data? Having a unified approach, speeds the design and feedback process and helps the OEM and supplier stay on the same page with accurate information. Companies are looking for a standardized approach for digital collaboration that spans PLM, ERP, and manufacturing internally and efficiently shares the appropriate information with their partners and suppliers. For many companies, that is a work in progress.

Technology adoption is another major challenge. This challenge, as with any company, is making sure the supporting technology specifically addresses the company's needs and gets used. Customers often have some variation on the same problem they are trying to solve; and Boeing is no different in that respect. They were seeking a standard approach that is open, yet secure in design and is effective with a very diverse supplier community. The solution is designed to be adaptable to compliment Boeing's core systems while moving towards an improved experience in collaboration. Looking more broadly at the aerospace industry, companies do not want to be locked into any particular solution; which creates a challenge as well as an opportunity. A flexible architecture is essential for collaboration systems, especially if the focus is on industry adoption. We looked at this as an opportunity to develop an OEM centric solution with strong application programming interfaces (API) knowing we'd have to solve the problem not only with Boeing, but within each customer's world.

Neil Lichty: One aspect that is the biggest connecting point in the architecture is licensing cost relative to the suppliers. It is minimized. It cannot be a cost burden on them.

John Stevens: Talisen has a long standing relationship with Boeing. We truly work with their great team as a trusted partner and focus on delivering value through extensive industry knowledge and strategic thinking; helping them solve business problems. At the core of Talisen, our mission is to empower Boeing and other organizations to achieve their goals through strategic, enterprise-wide solutions. It is a holistic approach to collaboration and business transformation.

CIMdata: Thank you both for your insights and CIMdata looks forward to following your progress.

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Acquisitions

Accenture to Acquire Technology Consultancy SALT Solutions to Improve Manufacturing Operations and Logistics with Cloud-Based Industrial IoT Platforms

16 September 2020

Accenture has agreed to acquire SALT Solutions AG ("SALT Solutions"), a technology consultancy headquartered in Würzburg, Germany. The firm implements and maintains IT systems for production, operations and logistics at leading German automotive, manufacturing, consumer goods and chemicals companies. The acquisition will help Accenture build cloud-based industrial internet of things (IoT) platforms that speed up and optimize clients' production and logistics and enable them to reduce quality and waste issues along the entire supply chain.

SALT Solutions will join Accenture Industry X, which helps clients improve how they operate factories

and plants. SALT Solutions brings a team of more than 500 highly skilled professionals with deep expertise in manufacturing and supply chains systems including, but not limited to, SAP manufacturing software. Complementing Accenture's expertise in enterprise resource planning systems and cloud solutions, the acquisition will be fundamental to expanding Accenture Industry X's digital manufacturing, operations and supply chain business in Germany.
Frank Riemensperger, market unit lead for Accenture in Germany, Austria, Switzerland and Russia, said: "To win in today's changing global industry landscape, companies need to excel in Industry 4.0 and put digital at the core of their business. SALT Solutions' expert knowledge and experience in dynamic digital manufacturing and optimization will significantly deepen Accenture's shop floor expertise."

Nigel Stacey, global lead for Accenture Industry X, added: "We are building cloud-based industrial IoT platforms for our clients that capture and turn underused shop floor information into insights for real-time and long-term strategic decision-making. SALT Solutions' unique production and logistics expertise will be a key enabler for these platforms."
Maximilian Brandl, CEO of SALT Solutions, commented: "By joining Accenture Industry X, we will be able to offer clients a holistic approach to their digital transformation of manufacturing operations and logistics, adding even more value along the entire supply chain."
SALT Solutions is a certified SAP Gold Partner and has additional offices in Berlin, Dresden, Düsseldorf, Munich and Stuttgart.
SALT Solutions will be pivotal to bolstering Accenture's digital manufacturing and operations capabilities, which Accenture has been growing through acquisitions in different markets. These include PLM Systems in Italy, Callisto Integration in Canada, Silveo in France and Enterprise System Partners in Ireland. It will also follow other acquisitions Accenture has made to strengthen Industry X in Germany, which include embedded software company ESR Labs, technology consultancy Zielpuls and strategic design consultancy designaffairs.
Completion of the acquisition is subject to customary closing conditions. Financial terms were not disclosed.

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Altair Acquires Ellexus

16 September 2020

Altair announced the acquisition of Ellexus, a leading input/output (I/O) analysis tool, which helps customers find and address issues quickly, improving speed accuracy and cloud readiness.

The Ellexus software products, Mistral and Breeze, are used for I/O diagnostics, optimization, and dependency detection by HPC administrators of large enterprises. Altair plans to integrate them into the storage aware scheduling functionality of Altair PBS Works™.

"Altair continues to expand its reach and capabilities for HPC environments to support important modern workloads including for data analytics, AI and ADAS," said James Scapa, Altair's chief executive officer and founder. "The acquisition of Ellexus is particularly relevant in these domains as storage aware scheduling for big data applications is critical."

The recent acquisition of Univa positions Altair as the leading scheduling and resource optimization

solution provider for both massively parallel and high-throughput, single-core jobs. Ellexus nicely complements Altair's scheduling technology by providing per-job storage agnostic file and network I/O real-time monitoring to identify I/O latencies and bottlenecks for faster job execution times and better resource utilization.

Altair will also deepen its technical ranks with the addition of Dr. Rosemary Francis, Ellexus founder and chief executive officer. Francis earned a PhD in computer architecture from the University of Cambridge and an undergraduate degree in math and computer science. She is a regular guest lecturer at Cambridge University and is a member of the Raspberry Pi Foundation.

"There is no better place for Ellexus' products to get into the hands of global customers who can immediately benefit," said Francis. "Altair's growing leadership in HPC is exciting and exactly where I want to be to help grow the business and stretch technology to its limits."

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Altair Acquires Univa

15 September 2020

Altair announced the acquisition of Univa, a leading innovator in enterprise-grade workload management, scheduling, and optimization solutions for HPC and artificial intelligence (AI) on-premises and in the cloud.

Altair is a leading provider of HPC workload and workflow management technology to the manufacturing, weather, research, and government verticals, and is an innovator in the electronic design automation (EDA) space. The Univa acquisition enables Altair to further expand into life sciences and financial services.

"Altair has invested significantly in HPC and cloud technologies for several years," said James Scapa, Altair's chief executive officer and founder. "The addition of Univa's technology and its very experienced team further cements our leadership position in this fast-moving space."

Altair and Univa's solutions optimize throughput and performance of applications, containers, and services to help hundreds of companies manage thousands of applications and run billions of tasks every day to obtain actionable insights and achieve faster time-to-results.

"The Univa team is thrilled to join the Altair ecosystem and unleash the power of our technology," said Fritz Ferstl, chief technology officer of Univa. "We believe HPC is emerging as a critical element of digital transformation as it plays a significant role in all areas of computational science and data analytics."

Altair will continue to invest in Univa's technology to support existing customers while integrating with Altair's HPC and data analytics solutions. These efforts will further enhance the capability and performance requirements for all Altair customers and solidify the company's leadership in workload management and cloud enablement for HPC.

Univa has two flagship products:

Univa® Grid Engine® is a leading distributed resource management system to optimize workloads and resources in thousands of data centers, improving return-on-investment and delivering better results faster.

Univa Navops Launch simplifies the migration of enterprise HPC workloads to the cloud while reducing costs as it provides real-time insights into workloads and spending with complete visibility to HPC cloud resources.

Univa is headquartered in Chicago, with offices in Canada and Germany.

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Hexagon Acquires MDE Network, SRL, Distributor in Argentina

15 September 2020

Hexagon's PPM division has acquired MDE Network, SRL, an Argentinian provider of solutions for operations management and optimization.

The MDE Network acquisition expands Hexagon's direct presence in South America. Hexagon adds an experienced team of professionals who have the knowledge and expertise to capitalize on j5 Operations Management Solutions opportunities in the region. Hexagon will be able to help industrial plants in South America implement solutions to optimize operations management activities using Hexagon's broad portfolio of products.

MDE Network, headquartered in Buenos Aires, offers innovative solutions that enhance knowledge of the processes for better decision-making, from the operator to a company's board of directors. It delivers implementation and consulting solutions and services with high quality standards for the improvement of efficiency in the management of industrial operations, based on the concept of Situational Awareness.

MDE Network previously established j5 Operations Management Solutions from Hexagon as a core system for one of Argentina's most important oil & gas companies. Hexagon intends to combine knowledge from Alas Ingeniería – which it acquired in January 2020 – with the expertise of MDE Network to consolidate its leadership position in the Argentina by expanding its reach in Operations Management.

"MDE is already present in the largest oil & gas companies in Argentina, so besides consolidating Hexagon's presence in the country, this acquisition accelerates our growing presence in the Operations & Maintenance space among the biggest owner operators in South America, in different industries," said Fabio Yada, Senior Vice President of Hexagon's PPM division, South America. "The combination of Hexagon's Operations Management solutions and MDE's team knowledge will be a differentiator."

"MDE Network has combined IT knowledge and more than 30 years of experience in industrial automation. For almost a decade, we have provided solutions for improving efficiency of industrial process operations," said Andrés Szlufik, Managing Partner, MDE Network. "This acquisition is a full recognition of our work, reflected in the trust and loyalty of our clients, and opens up an immense growth potential due to the regional and global resources that a first-class technology provider like Hexagon brings to our market."

MDE Network is fully consolidated as of September 9. The acquisition has no significant impact on the

results of Hexagon.

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Company News

Accenture Cloud First Launches with $3 Billion Investment to Accelerate Clients Move to Cloud and Digital Transformation

17 September 2020

Accenture announced the formation of Accenture Cloud First with a $3 billion investment over three years to help clients across all industries rapidly become "cloud first" businesses and accelerate their digital transformation to realize greater value at speed and scale. Karthik Narain will lead Accenture Cloud First and join the Global Management Committee, effective October 1.

Accenture is recognized as a leading partner to the world's major cloud providers. With approximately $11 billion in cloud revenue in its fiscal year 2019, Accenture's leadership spans from Software as a Service — delivered through the company's Intelligent Platform Services — to its migration, infrastructure and application cloud services. More than 100,000 Accenture cloud professionals help clients shape, move, build and operate their businesses in the cloud and realize the cloud's business value, speed, cost, talent and innovation benefits.
"COVID-19 has created a new inflection point that requires every company to dramatically accelerate the move to the cloud as a foundation for digital transformation to build the resilience, new experiences and products, trust, speed and structural cost reduction that the ongoing health, economic and societal crisis demands — and that a better future for all requires," said Julie Sweet, chief executive officer, Accenture. "Accenture Cloud First and our substantial investment demonstrate our commitment to delivering greater value to our clients when they need it most. Digital transformation requires cloud at scale, and post-COVID leadership requires that every business become a 'cloud first' business."

Accenture Cloud First is a new multi-service group of 70,000 cloud professionals that brings together the full power and breadth of Accenture's industry and technology capabilities, ecosystem partnerships, and deep commitment to learning and upskilling clients' employees and to responsible business, with the singular focus of enabling organizations to move to the cloud with greater speed and achieve greater value for all their stakeholders at this critical time. Specifically, this new group integrates the company's wide-ranging cloud expertise, including cloud migration, infrastructure, and application services and ecosystem partnerships; deep industry and cross-industry insights, data and Applied Intelligence capabilities; Accenture Interactive's leading experience design skills; and insights from the company's unmatched experience in modernizing and operating large IT estates and key business processes across finance, HR, marketing, supply chain and specific industries for leading global companies. This operational experience at scale is critical to ensuring companies realize value from their cloud and digital transformation. Edge computing, integrated with the cloud, also will be a key focus area.

Accenture Cloud First also combines world-class learning and talent development expertise; deep experience in cloud change management; and cloud-ready operating models with a commitment to responsible business by design — with security, data privacy, responsible use of artificial intelligence, sustainability and ethics and compliance built into the fundamental changes Accenture helps companies achieve.

Accenture's $3 billion investment will be used to continue advancing — often together with its cloud and broader technology ecosystem partners — industry roadmaps, data models, and solutions; cloud AI data and AI architectures; integrated full-stack infrastructure and applications capabilities; cloud tools, assets, and automation to drive lower unit cost and innovation; and research and development in edge computing and related cloud technologies.

Karthik Narain will lead Accenture Cloud First. A technology industry veteran based in Silicon Valley, Narain most recently served as the lead for Accenture Technology in North America, helping guide Global 2000 brands in using the power of the cloud and other technologies to transform their businesses. Over his 20-year career, he has led many innovative technology programs for clients across a variety of industry sectors, including Software & Platforms, Financial Services and High Tech. Karthik also previously led Technology services for Accenture's Communications, Media and High Tech industry segments.

"Cloud is the most disruptive and value-creating technology of our time — it is the foundation for the digital transformation that is driving profound changes in how businesses operate, compete and create value for all their stakeholders," said Paul Daugherty, group chief executive, Accenture Technology. "With most businesses currently at only about 20% in the cloud, moving to 80% or more rapidly and cost effectively is a massive change that requires a bold new model. Accenture Cloud First, along with our $3 billion investment and our market-leading Software as a Service capabilities in Intelligent Platform Services, ensures that we provide our clients with value, speed and innovation in every part of their cloud journey."

"The acceleration to new levels of digital performance by companies requires a transformation of talent across the enterprise to achieve truly new ways of competing, operating and serving customers," said Annette Rippert, group chief executive, Accenture Strategy and Consulting. "We believe that helping our clients purposefully build the core skills they need and quickly adopt new ways of working is essential to achieve value moving to the cloud. Accenture Cloud First brings our strong capabilities in driving change and developing talent not only for our clients but also for Accenture — we are already 95% in the cloud, and in FY19, we invested $1 billion in developing our people."

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Aveva - Global Industrial Leaders Identify Cloud as The Single Most Important Solution to Surviving and Thriving in The New Normal

14 September 2020

Industrial organizations are opting for Cloud, Digital Twin, Artificial Intelligence (AI) and automation technologies to address the complexities of today's challenging macro-economic environment, according to AVEVA, a global leader in engineering and industrial software.

At a recent virtual press panel, hosted by the company and moderated by Craig Resnick, Vice President, Consulting, ARC Advisory Group, industry leaders exchanged views on how industrial organizations are innovating using technology to maintain business continuity and drive better supply chain and production planning. This is turning challenges into opportunities to increase productivity and profitability, especially when it comes to improving supply chain inefficiencies and driving sustainability initiatives.

The panel, which comprised senior representatives from three leading energy sector organizations – The Abu Dhabi National Oil Company (ADNOC), Wood PLC and DCP Midstream participating alongside Craig Hayman, CEO of AVEVA – emphasized how technology is playing a vital role in achieving real-time optimization and improving decision making, digitally enabling business operations, supported by an often remote workforce to drive substantial cost reductions.

Demand for Cloud in the Industrial Setting is Accelerating at a Phenomenal Speed
Craig Hayman, CEO of AVEVA, kicked of the panel sessions by emphasizing the massive opportunity for digital transformation for the industrial sector, which has traditionally been underpenetrated by digital technologies. He commented: "Digital Twin, AI and Cloud are improving collaboration and accelerating autonomous projects across the globe. To enable digital resiliency and long-term sustainability, organizations need to bring together the connected workforce with Cloud, Big Data and Edge capabilities. There are new pressures and opportunities, but ultimately one digital imperative."

Craig Resnick reported that 80% of ARC's clients are pursuing Cloud in their production operations to increase asset uptime and performance, a number that has increased dramatically during the pandemic. The need for remote monitoring and control of operations in engineering has driven the uptake of new tools, such as augmented and virtual reality, to supplement the remote experience and connect workers in the field, on-prem and working from home. Digital Twin technologies in the Cloud have witnessed one of the fastest growth trajectories among the transformational tools piloted or adopted during the pandemic, with remote engineering design and build, as well as remote operate and maintain, cited as drivers for this acceleration.

The collective group also agreed that while many investments in digital technology may not have had clear-cut business cases pre-pandemic, for example, connected workers could have been perceived as a non-essential, and this has all changed. "Organizations that didn't take going digital seriously before, are doing so now," said Dr. Alan E Nelson, CTO at ADNOC.

Dr. Nelson also advised organizations to focus their technology strategy and investments across a few impactful platforms (including new energy technologies, manufacturing processes and materials of the future). He further commented, "Technology strategies cannot be considered in isolation and should be developed in collaboration with key global strategic partners. Such strategies also need to support and encourage R&D capabilities to innovate at scale, which is crucial to reducing the risks related to commercialization of new technologies and giving organizations an edge in this new COVID-19 landscape."

Darren Martin, CTO of Wood, cited Digital Twin as a key enabler, to operate, maintain and optimize assets remotely across the globe with precision. While connecting people and workers during the pandemic has been key to business resilience and continuity, AI and automation is facilitating up front design, allowing people to focus on more complex developments. "The pandemic forced the industrial sector to embrace digital almost by default with future plans brought forward suddenly and accelerated to be ready and operational, now. Almost overnight there was an increased demand for systems that were smarter, faster, modular, safer, that would minimize scheduling delays in order to reduce OPEX, increase sustainability, lifespan and upskill existing trade craft professionals to be able to take on new roles."

Bill Johnson, Group Vice President and Chief Transformation Officer, DCP
Midstream, commented: "Our DCP 2.0 strategy is focused on industry-leading innovation and digital transformation with a goal to achieving real-time optimization and decision making, digitally enabling our business and workforce and increasing our cash flow while diminishing risk. By utilizing real-time data from a variety of sources to make the most strategic business decisions, driving workforce

efficiencies through automation as well as creating digital platforms to improve our employees' quality of life and customer experience and utilizing predictive analytics to improve asset maintenance we are confident that we are on a positive path to ensuring that DCP Midstream is equipped to remain agile and competitive even in the most disruptive environments."

Craig Hayman, CEO, AVEVA concluded, "As the post pandemic world returns to a new normality, I urge industrial organizations to seize the opportunity to maximize the benefits of creating a more agile, resilient business and exploiting the many advantages that emerging new technologies can offer. Organizations that are waiting for the future need to wake up to today's reality and understand that the future is here now and that digital transformation investments that are made today will determine the continued success of their operations moving forward."

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AVEVA Launches New Program for Industrial Channel Partners

16 September 2020

AVEVA launched AVEVA Select, a new program and name designate giving partners full access to AVEVA's comprehensive software portfolio. The new AVEVA Select program is designed to help customers accelerate their digital transformation agendas by leveraging the breadth of the AVEVA software portfolio across its install base.

The AVEVA Partner Network today boasts over 5,000 members providing opportunities for Alliances, Systems Integrators, Distributors, Solution Providers and Technology Partners to participate in the AVEVA community. With programs designed to suit every product and solution specialization and industry, AVEVA Select aligns to both market and technology trends helping companies simplify design, optimize production, reduce energy and maximize performance. Its programs and support initiatives are designed to promote the variety and value of applications developed and delivered on the AVEVA platform worldwide.

With AVEVA Select, partners will be able access the entire AVEVA portfolio through the channel that they have known and trusted, often for as long as 30 years. The program will expand AVEVA's reach to a wider distribution of industries, outside its previous core customer base of mid/downstream Oil & Gas, heavy chemical, power generation and distribution, to incorporate many other sectors including Food and Beverage (F&B), Consumer Packaged Goods (CPG), Smart Cities and Infrastructure, Mining, Paper and Pulp, Utilities, Water and Waste and Discrete industries (e.g. automotive, electronics).

The 'AVEVA Select' designation along with the territory they support will denote a partner capable of representing the entire AVEVA Portfolio to customers. The expanded AVEVA Select customer base will be able to leverage their installed Monitor & Control (M&C) and Planning & Operations (P&O) solutions from AVEVA to address new challenges, create opportunities and improve the performance of their industrial operations.

Members of the current AVEVA Partner Network community also see the launch of AVEVA Select as very timely for the community. "The AVEVA Partner Network continues to grow as a hub for the latest thinking on performance management of manufacturing operations and today it is utilized for the sharing of best practices with the partner community as well as harnessing their collective insights to help solve some of the world's most complex industrial manufacturing issues. The launch of the new AVEVA Select Program comes at a time when industrial customer demand for digital transformation is

growing exponentially and it will create new opportunities for the customer base," commented Bob D'Agostino, President of AVEVA Select North (formerly Wonderware North).

"With the new AVEVA Select Program we can confidently grow the partner network from strength to strength by offering real value for our strategic technology partners, distributors, systems integrators and many more, enabling our network members to work better together to help their customers create increased business value. I am excited to be part of this journey which will undoubtably extend the capabilities of the AVEVA offering to a new and previously untapped partner audience," said Jason Bass, President of AVEVA Select Central (formerly Wonderware West).

"Our Partner and Channel Network is already one of the most active and supportive global networks in the industrial and manufacturing sector. The passion of our people is to bring communities together in order to overcome everyday business challenges as well as develop innovative new ideas. This is particularly relevant in times like these where many organizations are feeling the effects of the economic downturn in the COVID-19 world," concluded Kerry Grimes, Head of Partners, AVEVA.

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Bentley: Remote Design Collaboration as the New Norm

14 September 2020

During the last few months, the emergence of the COVID-19 pandemic has disrupted business across numerous industries and caused firms to reevaluate and adjust their practices to keep up. In the AEC industry, this situation has accelerated an existing, growing trend toward remote design collaboration. In addition to more team members working from home due to office closures, projects have become more complex and geographically distributed, turning remote work from an afterthought to an imperative consideration.

Now more than ever, design project leaders need to keep their teams connected to information and each other, despite remote work challenges that may arise. As design teams around the world become increasingly dispersed, team members are challenged with producing the same work remotely that they used to do in the office, all while maintaining the same level of productivity and quality of work.

This need is causing many firms to shift from more manual, siloed project delivery methods to new, cloud-based solutions, purpose-built for engineering workflows. These new solutions are helping connect participants and stakeholders to quickly and easily share and find information as well as conduct collaborative design reviews, regardless of their location, keeping design teams as productive as possible, even with remote work hurdles.

Connecting Dispersed Teams with Project Information Right at Your Fingertips

One common challenge of remote work is reliably sharing information with team members. Manual methods of sharing information—such as email, FTP or ad hoc file-sharing services—can hinder productivity by making it difficult to exchange larger files, creating information silos and preventing project participants from readily finding information when they need it. Firms that rely on network drives are often hindered as well, having difficulties remotely connecting and accessing information out of office. These methods often caused team members to waste time finding information and verifying its accuracy, even causing costly delays and cutting into the overall project delivery schedule.

Many design teams have improved how they store, find and share their design records by establishing a centralized, cloud-based repository for all project information. This repository allows team members to ensure they are working with the most recent, up-to-date files, reducing the risk of rework. It also

provides a secure way for all internal and external project participants to readily access information from their web browser and, in some cases, through native work environments, such as Microsoft Teams.

Design firms are now not only able to keep their remote teams connected, but they can also save significant time, while avoiding the risks associated with their legacy workflows.

Improved Design Collaboration Across the Project Team

Another common challenge of efficient remote work is ensuring that the entire project team can readily collaborate on design work. Conducting reviews using manual methods such as email or siloed markup applications makes it difficult for team members to readily provide feedback, work with multiple team members, and track and resolve issues raised. Teams risk being unable to implement changes and resolve issues in a timely or effective manner when they do not have ways to quickly and easily capture, track, and manage feedback on 2D and 3D design work in a way visible to all project participants. Ultimately, this inability impacts productivity and creates friction and added risk when delivering design projects.

Teams have been mitigating these risks and improving efficiencies through cloud-based solutions. Reviewing 2D and 3D design work in accessible, web-based environments makes it simple for teams to work together and stay on the same page. Also, by leveraging automated workflows to streamline the process of tracking, managing and resolving issues raised, it enables teams to avoid rework and ensure the highest-quality designs are being submitted. Now, team members eliminate collaborative friction and facilitate more informed review decisions—focusing on their design work and keeping the project moving forward.

The Future of Infrastructure Design

Even before COVID-19, the AEC industry was embracing greater digitization to more efficiently address remote work challenges and deliver projects through accelerated collaboration and automated workflows. Now, with the global pandemic making it mandatory for colleagues to work remotely, organizations will only continue to lean into these changes, moving toward more remote-friendly work environments and workflows.

In short, firms are embracing new paradigms of work precisely because they know that the “same old methods” are no longer adequate. When one delay or mistake can have a huge ripple effect downstream, every competitive advantage is essential. Although legacy methods of collaboration worked, team members often lost time and encountered issues locating, sharing, and verifying project information and collaborating on design work, ultimately hindering their ability to deliver projects on time and with minimal risk.

As remote collaboration becomes the new norm, so too will new cloud-based workflows, enabling all engineers to be able to work from anywhere while still maximizing efficiencies and productivity. Although this situation seemed impossible only months ago, the push from a global pandemic has moved it ever closer toward reality today.

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Bentley Systems Announces Finalists in the Year in Infrastructure 2020 Awards Program

15 September 2020

Bentley Systems, Incorporated announced the finalists in the Year in Infrastructure 2020 Awards program. The annual awards program honors the extraordinary work of Bentley software users advancing infrastructure design, construction, and operations throughout the world. Sixteen independent

jury panels selected the 57 finalists from over 400 nominations submitted by more than 330 organizations from more than 60 countries.

The finalists for Year in Infrastructure 2020 Awards for advancements in infrastructure are:

4D Digital Construction
• DPR Construction – 2019 LSM DS Tech Upgrade
• Mortenson | McCarthy - a Joint Venture – Allegiant Stadium
• Office of the Renovation and Expansion Project of the Beijing-Harbin Expressway Section from Lalin River (Boundary between Jilin Province and Heilongjiang Province) to Harbin, Heilongjiang Construction Technological Innovation & Investment Co., Ltd. – Application of 4D Digital Technology in the Management of the Renovation and Expansion Project of the Beijing-Harbin Expressway Section from Lalin River to Harbin

Bridges
• Arup – Cherrywood Grand Parade Bridge
• Chongqing Communications Planning, Survey & Design Institute Co., Ltd., Guizhou Communications Construction Group Co., Ltd., Guizhou Bridge Construction Group Co., Ltd. – Digital Design and Construction of Taihong Yangtze River Bridge
• Sichuan Road & Bridge (Group) Co., Ltd. – Chishui River Bridge of Expressway from Jiangjin (Chongqing-Guizhou Border) to Xishui to Gulin (Guizhou-Sichuan Border)

Buildings and Campuses
• Beijing General Municipal Engineering Design & Research Institute Co., Ltd. – Innovative Application of BIM in Municipal Engineering Design of Ezhou Civil Airport
• PT. Wijaya Karya (Persero) Tbk – COVID-19 Modular Hospital with NPI Room
• Voyants Solutions Private Limited – Bangladesh Regional Waterway Transport Project 1 – Shasanghat (New Dhaka) IWT Terminal

Digital Cities
• City of Helsinki – Digital City Synergy
• Skanska-Costain-STRABAG Joint Venture – HS2 Main Works Civils Contract
• Systematica S.r.l. – MIND: Testbed of New Mobility Paradigms

Geotechnical Engineering
• Golder Associates Hong Kong Ltd – Tuen Mun-Chek Lap Kok Link Tunnel, Southern Landfall
• HDR Engineering – Oroville Dam 3D Seepage and Stability Modeling of the Tallest Earthen Embankment Dam in the US
• Saidel Engineering SRL – Nine-story Residential Building above the Subway Tunnels in West Bucharest

Land Site and Development
• AAEngineering Group – Dzhamgyr Mine – Project Implementation in Extreme Conditions
• Jacobs Engineering India Pvt. Ltd. – Master Planning and Engineering for Infrastructure Development at Tumakuru, Karnataka
• KCI Technologies Inc. – HUB404 Concept Database

Manufacturing
• Citic Heavy Industries Co., Ltd. – The Application of BIM Technology in Fujian Ansha's Intelligent Green Cement Production Project with a Daily Output of 4,500 Tons
• MCC Capital Engineering & Research Incorporation Ltd. – BIM Technology-based Construction of Digital Plant for Iron and Steel Base in Lingang, Laoting of HBIS Group Co., Ltd.
• Shenyang Aluminum & Magnesium Engineering & Research Institute Co., Ltd. – Guinea Alumina Engineering Digital Twin Application Project of CHALCO Hong Kong Co., Ltd.

Mining and Offshore Engineering
• AAEngineering Group – Digital Twin of AKSU Plant: from Concept to Startup. A Real Story.
• Sapura Energy Berhad – Transporting of 3-x-330 Class Barge Loaded with Jacket onboard Semi-submersible Vessel
• Volgogradnefteproekt, LLC – Vladimir Filanovsky Offshore Field Modernization and Production Volume Increase

Power Generation
• PowerChina Hubei Electric Engineering Co., Ltd. – Kyrgyzstan Bishkek Thermal Power Plant Reconstruction Project
• Shanghai Institute of Mechanical and Electrical Engineering Co., Ltd. – Shanghai Electric Environmental Protection Group Technology Renovation and Expansion Project for Nantong Thermoelectric Waste Incineration
• TBEA Xi'an Electric Design Co., Ltd. – Application of Digital Technology in the Design of Complex Mountain Wind Farms

Project Delivery
• Aegea Saneamento – Infra Inteligente Program (Smart Infra Program)
• Shanghai Water Engineering Design & Research Institute Co., Ltd – The Integrated Delivery and Application of BIM Technology in the Design, Construction, Supervision and Management of Shanghai Water Pump Sluice Project
• Sweco – Sweco | Digitalization with BIM

Rail and Transit
• China Railway Electrification Engineering Group Co., Ltd., China Railway Engineering Consulting Group Co., Ltd., China Academy of Railway Sciences Corporation Limited – Beijing-Zhangjiakou High-speed Railway
• Network Rail Wales and Western Region – Bristol Area Signalling Renewal Enhancements
• PowerChina Huadong Engineering Corporation Limited – Innovative Application of Digital Engineering Technology in Shaoxing Rail and Transit Construction

Reality Modeling
• AUAV – Warragamba Water Pipeline Digital Twin
• Khatib & Alami – Geo-enabling Reality Model Tips and Tricks
• Merius Oy – Merius Smart Mill

Road and Rail Asset Performance
• Maryland State Highway – Maryland One (SUPERLOAD) Violation Tracking & Asset Insight

• Roads & Transport Authority (RTA) – Collaborative Information System Implementation - Whole Lifecycle Common Data Environment
• SMRT Trains Ltd – Predictive Decision Support System (PDSS)

Roads and Highways
• Sichuan Road & Bridge (Group) Co., Ltd. – BIM Technology Application on Chengdu-Yibin Expressway
• Sweco Nederland B.V. – Oosterweelverbinding Antwerpen
• SAI-SYSTRA Group – Mumbai Coastal Road Project (South) Package – II

Structural Engineering
• CNI Ingenieros Consultores SAS – Engineering Laboratories and Research Building
• Indian Railways – Design & Construction of the World's Tallest Rail Pier Girder Bridge
• WSP – WSP overcomes Complex Challenges with Bentley's Technology to Deliver Principal Tower

Utilities and Communications
• IOB Technology Sdn Bhd – BIM for Substation and Electrification Design of Double Rail Track, Johor, Malaysia
• Qinghai Kexin Electric Power Design Institute Co., Ltd. – Dayu 110kV Electrical Transmission and Transformation Project in Hainan Tibetan Autonomous Prefecture, Qinghai Province, China
• Sterlite Power Transmission Limited – Sterlite BIM

Utilities and Industrial Asset Performance
• Gazdaş Gaziantep Doğal Gaz Dağitim A.Ş. & Trakya Bölgesi Doğal Gaz Dağitim A.Ş. – Enterprise GIS Project for Natural Gas Utility on SAP/IS-U
• Glencore – Implementing Asset Reliability Tool for Copper and Nickel Smelters
• Shell QGC – Evolution of Engineering Data, Documents and Information Management

Water and Wastewater Treatment Plants
• AECOM/Wessex Water – Durleigh WTC Reconstruction
• Hatch – Ashbridges Bay Treatment Plant Outfall
• PowerChina ZhongNan Engineering Corporation Limited – Research on the Deep Application of BIM and Digital Twin Technology of Water Delivery Project Based on Bentley

Water, Wastewater and Stormwater Networks
• Companhia de Saneamento Básico do Estado de São Paulo – Operational Restructuring Project of Cursino Water Supply System in São Paulo City
• DTK Hydronet Solutions – Digital Water Network Engineering & Asset Management of Dibrugarh Water Supply Project
• NJS Engineers India P Limited – JICA Assisted Guwahati Water Supply Project

The finalists, chosen by independent juries of industry experts, present their projects during a pre-conference showcase beginning October 5 through October 16, 2020.

Chris Barron, Bentley's chief communications officer, said, "The circumstances of the global pandemic have made the past few months a challenge for us all, and it is a testament to our users' resilience that

we received over 400 nominees for our Year in Infrastructure Awards program. While we are not able to present this year's conference and awards ceremony in front of a live audience, the new virtual format gives us the opportunity to re-invent Year in Infrastructure and take full advantage of 'going digital.' Attendees can access our informative sessions in real time, or on-demand, making it easier for anyone to attend multiple sessions that might have ran concurrently. We are also providing new and exciting ways to engage with infrastructure thought leaders from around the world and to explore and share their innovative insights."

The agenda of the Year in Infrastructure 2020 Conference features:
• Pre-Conference Live Judging – The Year in Infrastructure 2020 Awards Finalists Presentation – Oct. 5 – Oct. 16 — Hear from the people behind the most extraordinary infrastructure projects of the year, as they tell their story of how they leveraged digital advancements to achieve unprecedented outcomes.

• TwinTalks – Digital Twins Go Mainstream — Featuring moderated panel discussions with users, Bentley executives, and industry analysts who will share how digital twins are gathering mainstream adoption in six sectors.

• Executive Perspectives: Digital Twins for Infrastructure Resilience — Greg Bentley, CEO Bentley Systems – Discover the software and cloud-service enhancements that empower users to create and operate economically and environmentally sustainable infrastructure.

• Executive Perspectives: Digital Twins — Join Keith Bentley, founder and chief technology officer, Bentley Systems, to learn how users have created digital twins to support accessibility, interoperability, and open standards.

• Digital Twins: Making the Business Case for Digital Twins — Learn how leading organizations have made compelling and successful business cases for deploying digital twins that improve project delivery and asset performance. Featuring Adam Klatzkin, Bentley's vice president, business development, and Richard Cooper, Bentley's strategic director.

• Digital Twins Showcase: Twinfrastructure! Twinnovation! — Greg Demchak, director of Bentley's iTwin Innovation Lab, Mehreen Javaid, Bentley's digital integrator, and Sanjeev Shah, Bentley's business development director showcase how users leverage mixed reality (XR) to visualize the past, present, and future of their projects, and create digital twins of existing assets to implement remote inspection and remote assist digital workflows.

• Live: Year in Infrastructure 2020 Awards Ceremony Oct. 21. After careful deliberation, by independent expert juries, the winners of the Year in Infrastructure 2020 Awards will be announced in a live global broadcast at 12:30 p.m. EDT. Don't miss what has been called the Academy Awards of Infrastructure. Register and watch live.

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Centric - PLM and its significance in fashion retail post-pandemic

18 September 2020

The importance of digitisation was well known to business before the pandemic, but the actual

implementation was slow and less. It is rightly said that some of the biggest changes need some situations like COVID-19 to bring about important transformation. The crisis has increased digital adoption significantly with companies and even customers going digital for getting their jobs done. The times have changed and there is no denying that this pandemic is going to change how we do many things, forever. So why not get prepared for the change now!

The fashion industry is complex, as demands are variable and change with consumer trends. Retailers prepared themselves for the coming season with forecasting, but no one was ready for such deep changes in consumer buying behaviour. Change in lifestyle has affected buying patterns, and it can be said that for the next 3 months, the major fashion that consumers will be purchasing will be loungewear or athleisure. Therefore, retailers need to re-strategise their business plans according to the new normal. Today, we've seen less physical and more of digital connection which is helping us collaborate and communicate better and is making us quickly adapt to the new technology. Since a lot of companies that have already gone digital are recovering more quickly and are increasing productivity and efficiency, it is important for brands and retailers to get onboard in order to survive in the post-pandemic environment.

Fashion product development is among one of the areas that is the most time-consuming, as it is quite a decentralised process. Product Lifecycle Management (PLM) can help businesses increase collaboration and communication for streamlining the process and reduce unnecessary tasks, saving time and costs. PLM streamlines production, reduces errors, and empowers effective remote team collaboration, ultimately saving time and money – a strategy that's vital for businesses entering a recovery phase.

"Implementing PLM is essential to enable businesses to react to marketplace fluctuations, and not only recover successfully, but also go on to thrive in the new climate and respond rapidly if the virus resurges. Many brands are revolutionising the way they ideate, design, and sell products with PLM acting as a digital backbone that enables them to capitalise on three key drivers: agility, efficiency, and innovation," said Lily Dong, APAC Marketing Director, Centric Software®. A PLM solution digitises four major phases of the fashion industry including conception, design, production, and distribution.

For businesses to stay relevant in the post-COVID-19 world, retailers need to focus on reducing their development time. The use of PLM solution can help digitise the work flow, enabling better communication, collaboration, and reducing the extra amount of time that was otherwise invested in doing the process. It is important to look at the process that can help reduce time, and therefore, reduce the product development time, and subsequently, the time to market. The other benefits of the solution involve integration with planning tools, and with good data analytics, it can give visibility to what needs to be designed. Communication with suppliers and factories can be simplified by involving them in PLM and letting them have an active participation in the development process. Integration is key for the success of digitalisation, and PLM is the perfect platform for integration of different roles/locations.

Stepping stones to recovery path

Headquartered in Silicon Valley, Centric Software provides a Digital Transformation Platform for fashion, retail, footwear, luxury, outdoor, consumer goods, and home décor. Centric Fashion PLM connects all product-related activities and product information including the entire supply chain on one cloud-based platform, giving internal and external users a single, actionable version of the truth in real time. "What recovery looks like will vary from country to country as their situations evolve, but there is one key thing that's been made evident by this pandemic – businesses that succeed in the future will be powered by digital transformation and will heavily depend on technologies that leverage remote collaboration – such as Centric Software®'s Product Lifecycle Management," said Lily.

Centric Fashion PLM builds communication across branding, design, merchandising, financial planning, development, specs, sourcing, manufacturing, quality control, and presentation at retail to increase efficiency, cut costs and speed time to market. It has eight core modules including merchandise planning management, development calendar management, design and development management, material management, cost management, series management, procurement management, and quality management.

Centric PLM solution is based on the needs of different customers like retailers, SMBs, etc. Centric's flagship PLM platform, Centric 8, delivers enterprise-class merchandise planning, product development, sourcing, quality, and collection management functionality tailored for fast-moving consumer industries. Centric SMB provides innovative PLM technology and key industry learning for emerging brands. Centric Visual Innovation Platform (VIP) offers a new visual and digital experience for collaboration and decision-making, and includes the Centric Buying Board to transform internal buying sessions and maximise retail value, and the Centric Concept Board for driving creativity and evolving product concepts. All Centric innovations shorten time to market, boost product innovation, and reduce costs.

The retailers with the solution are benefited in three major ways – the solution maximises product introduction success through the centralised merchandise plan for visibility and establishes targets earlier. The users can easily track the product performance pinpointing the best and worst selling product to plan their assortment plan accordingly for better sales. The availability of data helps minimise the guess work in product introduction, pushes private and white label products. Private label and white label products are usually more profitable than branded products, as it's easier to control margins, and luckily for retailers, more consumers are putting both items in their shopping baskets.

PLM streamlines private label development, whether users create products from scratch, co-create with suppliers, or source finished products. It reduces errors and eliminates tedious hours of data entry, so users can get a wide selection of products to market faster; and it turns up the volume on sourcing, when a business uses many different suppliers, employees can end up drowning in spreadsheets. High-volume sourcing and direct to factory sourcing are powered by PLM solutions. Users can launch and evaluate supplier requests en masse while automatically consolidating RFQ responses and supplier notes in one centralised digital space.

Centric cloud-based solution is available on a subscription basis as Software as a Service (SaaS). For the installation, a Representational state transfer (Rest) API enables companies to leverage Centric data throughout the organisation by connecting with business systems such as Enterprise Resource Planning (ERP), Digital Asset Management (DAM), or other platforms. Users can even create their own apps to seamlessly connect or digitally transform processes without limitation.

For the collaboration between the buyer and the manufacturer, both need to have the system installed. This enhances and speeds up the collaboration through the cloud-based digital environment enabling better management of every aspect of the R&D, product development, costing and sampling process, including responding to RFPs, building tech packs, quality testing, compliance documentation, and more. Manufacturers and their customers enjoy greater transparency, better communication, fewer errors, and time savings. "The implementation can be as fast as 3 to 4 months for Centric 8 PLM. Centric's SMB solution for small to medium-sized companies packages the core modules of Centric 8 PLM into a small business-friendly product and can be implemented at breakneck speed – in just a few weeks – and at a competitive price offering," commented Lily.

"Over the course of the pandemic, many apparel companies have seen fast, fundamental changes to the way they work, bringing unforeseen challenges that can only be overcome through rapid response and quick adaptation. And, in an era in which mobile phones, laptops, IoT, AI, and other technologies form

part of our everyday lives, achieving business agility without key digital innovations is almost impossible. Leveraging revolutionary cloud-based technologies such as Centric PLM, Quick-start remote collaboration boards, and 3D design integrations will only become more important in times ahead," underlined Lily.

Since the COVID-19 outbreak, Centric Software®'s PLM solutions have been selected by 30 brands, retailers, and manufacturers to boost efficiency, reduce costs, and drive remote collaboration. Brands, retailers, and manufacturers – ranging from large retailers to digital natives to upcoming brands to traditional manufacturers – from 10 countries have shown an overwhelming need to quickly adapt to the new conditions imposed by the pandemic and prepare for the future.

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HCL and GOOGLE CLOUD Expand Partnership

17 September 2020

HCL Technologies and Google Cloud announced the expansion of their strategic partnership to bring HCL's Actian portfolio, starting with Actian Avalanche, to Google Cloud. Actian Avalanche is a high-performance hybrid cloud data warehouse designed to power an enterprise's most demanding operational analytics workloads. Actian Avalanche enables a seamless path to migrate legacy data warehouses, including IBM Netezza and Oracle Exadata, to Google Cloud, through a hybrid-cloud offering leveraging Google Cloud's Anthos application platform.

HCL's Actian Avalanche hybrid cloud data warehouse has been deployed by Fortune 500 customers to deliver powerful insights to manage business complexities for a variety of use cases, including fraud detection, real-time offers and market basket analysis. Avalanche delivers a fully managed hybrid cloud data warehouse service designed from the ground up to deliver breakthrough performance, scale and concurrency for data-driven enterprises.

Bringing Actian Avalanche to Google Cloud enables enterprise customers to leverage the platform's scalable, high-performance infrastructure and global network. Avalanche also features native integration with Google Cloud's Looker business intelligence and analytics platform, and hundreds of popular SaaS and enterprise applications, to deliver a comprehensive solution that is easy to deploy and consume.

"The integration between Google Cloud and HCL Actian Avalanche will enable customers to gain real-time insights from their operational data at a significantly lower Total Cost of Ownership. This will deliver improved business performance and the ability to increase business agility, mitigate risk and secure material cost savings in today's demanding business environment. We are excited about the strategic potential this partnership with Google Cloud brings to the market," said Raghu Chakravarthi, Chief Product Officer, Actian.

"It's critical that businesses are able to derive maximum value from their data, and we're proud to expand our partnership with HCL to help them do so," said Avanish Sahai, Vice President, Partnerships, Google Cloud. "Bringing its Actian portfolio to Google Cloud will enable HCL's enterprise customers to migrate and modernize legacy data warehouses and leverage Google Cloud's global network, performance and scale."

"The HCL Google Cloud Ecosystem is unlocking business value for customers by enabling product collaboration across HCL and Google Cloud. The launch of Actian Avalanche on Google Cloud is another differentiated collaboration that strengthens our joint offerings built around application and platform modernization, digital foundation and data value unlock." said Kalyan Kumar, CTO and Corporate Vice-President, HCL Technologies.

This latest announcement from HCL and Google Cloud expands a deep and growing partnership between the two companies to help organizations digitally transform. In 2019, HCL and Google Cloud announced the launch of HCL's Google Cloud Ecosystem to accelerate enterprise cloud adoption worldwide. To support customers, HCL has established three dedicated Google Cloud Native Labs in New York, London and the New Delhi area. These labs provide business-focused design workshops to engage customers and develop intellectual properties and Minimum Viable Products on Google Cloud across industries effectively and efficiently.

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HCL Joins NVIDIA Partner Network, Will Pursue Opportunities In AI Space

14 September 2020

HCL Technologies announced it has joined NVIDIA Partner Network (NPN), the US-based technology company's partner program, with plans to pursue expanded opportunities in the Artificial Intelligence (AI) space.

HCL also announced the launch of NEXT.ai, HCL's AI Lab, focused on upskilling engineers and architects utilizing AI solutions across hardware and software technology stacks. This will enhance their capabilities to build AI-led solutions for multiple HCL clients across industry verticals.

The HCL NEXT.ai lab focuses on emerging technologies to develop industry-specific AI solutions for customers pursuing digital transformation. Customers and partners can co-create proofs of concept and full-fledged, scalable and production-ready solutions in the lab. NEXT.ai comes equipped with the latest technology products and infrastructure from its partner ecosystem. The areas of focus include computer vision, predictive modeling, failure analysis, optimization, product intelligence, data engineering, data management, and more.

"HCL's NEXT.ai lab serves as a learning center for next-generation technologies and as an incubation zone for transformational business solutions," said GH Rao, President – Engineering and R&D Services, HCL Technologies Ltd. "Collaborating with NVIDIA will enable us to engineer high-performance and scalable solutions that deliver real business benefits to our customers.".

Vishal Dhupar, Managing Director for NVIDIA South Asia, said, "NVIDIA is dedicated to powering the AI revolution across industries and across the globe. We are excited by the work HCL is doing to empower organizations in India with rich AI solutions to meet their business and technology requirements."

NEXT.ai lab is powered by two NVIDIA DGX-1 systems, which enables accelerated delivery of AI solutions.

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Infor Customer Cloud Migration Continues to Gain Global Momentum

16 September 2020

Infor announced significant global success for its CloudSuite solutions, which can help customers recognize time-to-value faster and can help them become more agile, resilient and competitive. Industry-specific applications developed for sectors such as manufacturing, healthcare, distribution, public sector, retail and hospitality have contributed to Infor now having more than 14,000 customers in the Infor Cloud. Recent customers include Burton Snowboards, Frederick County (Maryland), Midwest Wheel

Companies, Cloetta, Saarioinen, and Auckland Transport.

Infor is focused on delivering end-to-end functionality in the cloud, with an increase of more than 200 percent in on-premises customers upgrading to the cloud and 112 percent growth in ACV (annual contract value) bookings from May through June.

Infor aims to deliver unmatched multi-tenant cloud capabilities, as well as best-in-class data management and analytics capabilities through the Infor Data Lake and Infor Birst. In addition, Infor's experienced professional services team and a deep channel and partner network, can help bring customers online quickly, with no material disruptions to their businesses.

Over the past 12 months, Infor has made significant industry-specific product updates that are designed to help customers better manage three important assets in their businesses: people, physical assets, and supply chains. These include new capabilities in human capital management (HCM), enterprise asset management (EAM) and supply chain management (SCM).

Midwest Wheel Companies, one of the largest truck parts distributors in the Midwestern U.S., is using Infor CloudSuite Distribution and Infor Birst analytics to help manage inventory across its six warehouses, enable complex workflows and alerts, and do more online business. With Infor's multi-tenant cloud solutions, including Infor OS (Operating Service), the company has improved customer service, realizing as much as a 15 percent improvement in vendor fill rates.

"If you're not innovating new ways of increasing service levels, you're going to get beat out. And that's how we approach everything," said Steve McEnany, vice president of marketing and technology at Midwest Wheel. "The fact that we're not running around putting out fires anymore has made a huge impact on our productivity."

Cloetta, a leading confectionary company in Northern Europe, recently selected Infor CloudSuite Food & Beverage to support digital transformation and drive innovation across its operations. Infor's multi-tenant cloud architecture was key to the decision, as well as Infor's deep industry functionality, which can help Cloetta with aspects such as quality control, recipe management and traceability.

Per Svensson, Cloetta IT Director, said, "In meeting the needs of our market, it's imperative that we have the agility to respond quickly to trends to capitalize on new opportunities and, ultimately, maximize sales. We're looking forward to the journey ahead with Infor, safe in the knowledge that we'll have industry-leading capabilities that can help enable us to build market share in our key territories and subsectors."

New Zealand's regional transportation authority, Auckland Transport, has centralized asset management in the cloud using Infor EAM. "As a business, we are not into building heavy software nor paying high maintenance and upgrade costs, so we looked for SaaS solutions that are ready to deploy and easy to maintain, and we found a strategic partner in Infor," said Roger Jones, Auckland Transport Executive General Manager, Business Technology. "This multi-year SaaS project can help optimize Auckland Transport's multi-billion-dollar assets across the organization to attain better decision-making, drive operational efficiencies and boost customer satisfaction. The first phase involving the predictive maintenance of bridges, as part of our bridge system transformation project, has gone live – on time and on budget, which is no mean feat during a pandemic. The remote and agile implementations could only be achieved due to the commitment and deep industry expertise of a team at Infor that we trust and work well with."

Infor Cloud Solutions Help Customers Innovate During Uncertain Times

Infor's cloud solutions are designed to drive new levels of usability, connectivity, and insight.

Customers across the globe can benefit from rapid scalability to accommodate brand expansion and acquisition, and multi-currency financials with powerful performance analysis by region and market. For many businesses, a critical component of success in navigating these uncertain business times has been innovation and having the scalability of cloud technology to quickly apply solutions to maintain continuity and reinvent ways of working.

Part of the Maryland Capital Region, with proximity to both Washington D.C. and Baltimore, Frederick County saw a growing need to shift away from its all paper-based operations. “During uncertain times, the strength of our cloud operations is now on full display,” said Gary Hessong, Deputy Division Director, Division of Planning and Permitting, Frederick County. “Working with Infor, we’ve been able to create an all-electronic portal that streamlines workflows and provides a simple, more cost-effective alternative for our customers. And, barely three months after we fully implemented the new portal, the system became a cornerstone of our efforts to maintain business continuity during the COVID-19 pandemic.”

“With Infor’s cloud solutions,” he added, “we have been able to scale, and scale quickly, adjusting demand and influxes on a daily basis. By putting our mission-critical applications in the cloud, we’ve been able to continue work without disruptions, seamlessly shift to home offices, and continue sustaining local business activity.”

Burton Snowboards, one of the world’s leading snowboard companies, is using Infor CloudSuite Fashion, an ERP system tailor-made for the fashion industry, and the Infor Nexus digital supply chain network to help optimize inventory across channels, increase its direct-to-consumer business, operationalize its expansion to global markets, and upgrade its technology footprint to the cloud.

“At Burton, we are consumer-centric and steadfast about leveraging the best tools to safeguard our production, product management and operations,” said Josee Larocque, Burton Senior Vice President of Operations. “We are excited to partner with Infor and upgrade our enterprise resource planning footprint to its modern cloud software solution.”

Saarioinen, a leader in the chilled convenience food market in Finland, is using Infor CloudSuite Food & Beverage to help it standardize, simplify and accelerate product development, improve customer experience and become a more data-driven company.

“We have our eyes fixed firmly on the future,” said Eero Kinnunen, Business Development Director at Saarioinen. “This modern technology can help create a platform, not only for better processes, but also faster, more responsive innovation.”

Kevin Samuelson, CEO at Infor, said, “Helping customers navigate today’s turbulent environment requires a deep understanding of the forces shaping their companies and their industries, at large. We believe our innovative cloud technology, infused with industry-specific expertise is what sets Infor apart.

“Rather than trying to build a single product to serve all industries, we’ve invested billions to create separate, industry-specific product suites, which go into the details for sub-verticals to meet certain specific needs of those customers,” he explained. “For example, we don’t have just a manufacturing suite, we have a suite that is purpose-built for the automotive industry – with specific key processes, functions and attributes germane to the sector – all built into our products. This structure is designed to enable faster deployments and deliver more value, over time, than generic, horizontal alternatives on the market.”

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Kerf Developments and Lantek collaboration delivers industry leading plasma technology

18 September 2020

Kerf Developments has been building plasma, oxy-fuel and waterjet cutting machines since 2002.

The company originally started as a service-based organisation repairing and upgrading a broad range of profile cutting machinery. It was the experiences gained working on such a varied range of equipment that formed the basis of the current machine range. Dan Taylor, Managing Director, explains the transition to machine building, "We have a considerable amount of experience in the industry and we could see which machine configurations gave the best and most reliable performance. The machines that we build here in the workshop in Rochdale have been designed by our team of engineers which, with Kerf being completely independent, means that we can select best in class products for our turnkey solutions from leading global partners such as Lincoln Electric and Burny."

In addition to offering a standard range of profile cutting machines, Kerf works with its customers to specify a bespoke machine that matches their own individual application. They design and build machines up to 4m wide with a combination of plasma and oxy-fuel heads and of any length. The smallest machine the company have supplied has a working area of 2.5mx 1.25m. The largest has a huge working area of 40m x 4m with multiple bridges.

A choice of plasma systems can be supplied with the machines ranging in cut capability from 1mm right the way through to 90mm. For oxy-fuel applications machines can cut up to 150mm thick as standard or considerably more if the application requires it.

As part of their continued development Kerf needed to evaluate the capabilities of various CADCAM and nesting systems as this was becoming an ever-increasing requirement from its customers. Following evaluation of several of the leading systems the one that came out on top for the engineering team at Kerf was the Lantek Expert system.

As a world leader in software for the sheet metal and fabrication sector Lantek now has over 24,800 customers in over 100 countries and 20 offices in 14 countries. Its Expert software is supported by a team of engineers in the UK and is developed at the company's Technological Excellence Centre in Bilbao, Spain. For Kerf Developments, Lantek has trained Kerf's engineers so that they can provide training and first line support. Dan Taylor says, "All our field service engineers have a copy of Lantek Expert software as part of their toolbox so that they can provide an instant response to any queries. Lantek provides regular and valuable updates to the software and are always on hand to provide online support to fine tune systems to work in line with our customers' needs."

For offline programming of the cutting machines, CAD data can be imported directly into Lantek Expert, parts nested on the material to optimise usage and the cutting path automatically created, providing a very fast and simple way of keeping the machine running, achieving high productivity levels and short delivery times.

As part of the collaboration, Lantek has worked closely with the engineering team at Kerf to perfect its UltraSharp technology which delivers high quality parts with a square edge, better quality edges and 1:1 hole sizes, for example, a 5mm hole in 5mm material, a capability which would previously have been impossible on a plasma machine. For the user, this capability makes it possible to use much lower cost plasma technology rather than laser technology to manufacture parts and is especially effective for thicker components. Dan Taylor adds, "The UltraSharp technology involves internally enhanced software protocols, accelerating and decelerating the torch dynamics on tight contours and holes, controlling the power, gas pressure and flow, amongst other things, and also automatically selecting special lead in and lead out configurations. The result is a constant and true arc with no lag between the

top and bottom of the material being cut. All the parameters required to achieve this are built into our technology tables making it easy to achieve high quality components direct from the CAD data."

One of Kerf Developments' customers, Pressed Flights based in Littleborough manufactures screw conveyors. The shape of the screw in its flat state is complex and, in many cases varies along the length of the screw depending on the material being transported.

Previously these parts were subcontracted for laser and waterjet cutting. Now the company has a Kerf RUR2500p machine with UltraSharp cutting technology and Lantek's software and carries out all the cutting in house achieving ± 0.25mm general tolerance. Mark Cryer, Managing Director at Pressed Flights says, "It is one of the best investments we have made. We transfer CAD data directly into Lantek, nest the parts for best yield, easily and quickly generating the CNC program. The Kerf UltraSharp plasma is very reliable producing augers which are spot on in size, it is a vital part of our operation. After sales service is excellent from both companies."

Dan Taylor concludes, "The 14-year collaboration with Lantek has enabled us to deliver industry leading technology to our customers as part of our turnkey machine packages configured to meet the demands of each client's business. Our focus is on providing excellent service, as it has been from the start. Lantek has the same mindset making it a valuable partner for the delivery of a full process offering."

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Siemens and VSI Labs partner to advance autonomous vehicle development

15 September 2020

Siemens Digital Industries Software and VSI Labs, a leading researcher of active safety and autonomous vehicle (AV) technologies, announced that they are partnering to further advance development of self-driving car technology. Through the partnership, Siemens' PAVE360™ platform will be used to create digital twin simulations for the validation and testing of all processors, electronics, sensors and systems powering the VSI Labs Capability Demonstrator -- an advanced AV development vehicle equipped with components from best-in-class automotive technology leaders and integrated by VSI solutions engineers.

"The primary objective of this partnership is to demonstrate equivalence between Siemens' industry-leading digital twin technology and a physical platform, thereby increasing confidence in digital twin-based modeling methodologies well in advance of the existence of a physical vehicle," said Ravi Subramanian, senior vice president, IC Verification, Mentor, a Siemens business. "This collaboration with VSI has the potential to significantly advance the AV space with the creation of a high-fidelity autonomous vehicle digital twin that simulates the interaction and combined power of the most advanced AV components and technologies in the world."

Siemens' PAVE360 pre-silicon autonomous validation environment delivers a comprehensive platform for multi-supplier collaboration across the automotive ecosystem. PAVE360 can extend simulation capabilities beyond processors to create digital twins that include automotive hardware and software sub-systems, full vehicle models, fusion of sensor data, traffic flows and even the simulation of smart cities through which self-driving cars will ultimately travel.

Siemens and VSI Labs plan to collaborate on multiple engineering projects, beginning with the validation of Digital Twin technology for systems functionality across the electronics, System-on-Chip (SoC), sensor and mechanical levels of the VSI demonstrator vehicle. Initial phases of this project are focused on SoC functional verification using Mentor's Veloce™ hardware emulation platform.

"Siemens' PAVE360 is a unique and powerful environment that we believe will substantially enhance our ability to analyze, test and deploy the hardware, software and connectivity systems necessary to support advanced safety and automated driving systems," said Phil Magney, president and founder of VSI Labs. "By creating a digital twin of our demonstration vehicle, VSI developers can test applications long before physical deployment, which will save time and reduce development cycles."

VSI's Capability Demonstrator travels to conferences throughout the year to exhibit the ADAS & autonomous driving technology enabled by their clients' components and solutions. Amid the COVID-19 pandemic, many of these events have been called off for the foreseeable future. In response to this, VSI is launching the Automated Drive Series, a set of four cross-country drives through which developers of AV and ADAS technology can promote their solutions.

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Events

CONTACT Cloud Connect 2020 - the online event for the digital transformation of product business

14 September 2020

On September 17th CONTACT Software will present the current trends and use cases of digital value creation in product development, production and service together with practitioners, industry experts and pioneers.
Under the motto "stepping up your digital product business", the online event on September 17, 2020 will focus on PLM, IoT and project management along the digital thread. Selected keynote speeches, specialist presentations and hands-on tutorials will address the question of how companies can further digitize their product business in order to increase their added value in product creation and service business.

The highlight of the Cloud Connect 2020 is the new version 15.5 of CONTACT Elements, CONTACT's open and highly modular platform, which combines over 50 business applications and core services for end-to-end processes along the digital thread. The Cloud Connect presents the latest developments for the central product programs PLM, Project Management and IoT, experienced through the Elements InSync Design System, in order to use complex product data and its connections more easily.

The main application areas are variant management, product costing, model-based systems engineering and configuration management. Highlights around the technology of the CONTACT Elements platform are software services from the cloud, system security, mobile applications and PLM/ALM integration. Central topics are also analytics & machine learning, agile project management, ROI calculation and compliance with regard to the methodologically based approach in companies.

In addition, well-known industrial users and partners provide insight into their projects and solutions. The program is framed by the keynote speech of Prof. Dr. Fischer from the Steinbeis Transfer Center, who, in his presentation "Orientation on the way to the digitized enterprise", will be analyzing the

potentials and applications of digitization with a view to the needs of the industry.

Interactive features such as tutorials, chats and the 1:1 online meetings with CONTACT's team from the areas of product management, consulting, professional services and software development complete the offer of the Cloud Connect 2020. The major online event will take place for the German-speaking countries on September 17, 2020 from 9:00 a.m. to 2:00 p.m. Interested parties can obtain information here and register directly free of charge.

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Financial News

Bentley Systems Announces Launch of Initial Public Offering

16 September 2020

Bentley Systems, Incorporated announced the launch of the initial public offering of 10,750,000 shares of its Class B common stock. The shares of Class B common stock to be sold in the offering will be sold by existing stockholders of Bentley. The selling stockholders expect to grant the underwriters in the offering a 30-day option to purchase up to an additional 1,610,991 shares of Class B common stock from the selling stockholders. The estimated initial public offering price is between $17.00 and $19.00 per share. Bentley has applied to list its shares on the NASDAQ Global Select Market under the symbol "BSY".

Goldman Sachs & Co. LLC and BofA Securities are acting as lead book-running managers and RBC Capital Markets is acting as a book-running manager for the proposed offering. Baird, KeyBanc Capital Markets and Mizuho Securities are acting as co-managers for the proposed offering.

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Implementation Investments

ACS Custom Revolutionizes In-ear Device Production with 3D Systems Figure 4 Direct Digital Solution

15 September 2020

The manufacturing industry is undergoing a significant transformation; fueled by the power of additive manufacturing solutions. 3D Systems' customer, ACS Custom, a UK-based digital production house for custom hearing protection, in-ear monitors, and other communication devices has revolutionized their workflow with 3D Systems' Figure 4 direct digital solution. ACS Custom's bespoke solution – comprised of Figure 4 PRO-BLK 10, Figure 4 Standalone, 3D Sprint software, and application engineering services – is accelerating its product development cycle for enhanced time to market and competitive advantage. As a result of this direct digital production workflow, ACS has realized a 4X increase in capacity and 2X increase in efficiency while reducing material consumption by 50% and labor cost by as much as 80% on one part.

"Figure 4 technology has been an integral part of our workflow for the past two years," said Andy Shiach, managing director, ACS Custom. "Through collaboration with 3D Systems' team, we've been

able to maximize the technology's role in our business and have elevated our company to a whole new level. The unique solution was designed specifically for our application and has helped us dramatically increase production capacity and efficiency as well as unparalleled surface finish to deliver high-quality products to our customers."

ACS built its business around a 100% digital workflow that provides customers with quick access to one-of-a-kind articles. 3D Systems' team worked closely with the team at ACS Custom to understand their specific application needs which resulted in a direct digital production solution.

At the core of this solution is 3D Systems' Figure 4 PRO-BLK 10 material – the company's first photopolymer for additive manufacturing that exhibits thermoplastic behaviors, providing a combination of speed, accuracy, strength, and durability previously only associated with injection molding output. This material has unique and compelling properties that represent significant improvements in first-time print yield, heat deflection, UV stability, durability, flexibility, and impact strength, while also enabling new biocompatible and direct digital production workflows such as the one designed for ACS. Figure 4 PRO-BLK 10's material properties – which include being biocompatible capable per ISO10993-5 and ISO10993-10 - results in a long-wear device that enables enhanced sound transmission and quality.

ACS Custom is using 3D Systems' Figure 4 Standalone 3D printer to take products from concept to prototype and final product. The Figure 4 platform is well-suited to these types of custom production applications that require rapid turnaround. The combination of Figure 4 PRO-BLK 10 and Figure Standalone enables fast print speed up to 62 mm/hr at 50 micron layer thickness to deliver new levels of productivity to ACS.

Figure 4 Standalone also includes 3D Sprint software. An all-in-one additive manufacturing software, 3D Sprint enables file optimization, preparation, and printing with a suite of advanced features for design, file correction, analysis, and more.

"3D Sprint is very intuitive in terms of layout, and the support features are really good," explained Dan Bennett, technical director, ACS Custom. "When the outside surface quality is important, we can reduce the touchpoint size and position of supports with precision. This allows us to produce a final product that is comfortable for the customer."

In addition to direct production applications, ACS Custom uses its 3D printers for eggshell casting. This technique takes advantage of the ability to print ultra-thin walls with Figure 4 to create molds for injecting silicone with Figure 4 EGGSHELL-AMB 10 material. Once injected, the 3D printed mold can be broken and peeled away like an eggshell to reveal a silicone part that ACS Custom post-processes, marks, and finishes.

"3D Systems' customer-centric solutions approach to innovation underlies everything we do – from understanding the customer workflow and application through to complete solution development," said Scott Anderson, VP & segment leader for manufacturing & prototyping, 3D Systems. "This highly market-driven approach allows our team the opportunity to engage unique applications for each customer and deliver solutions that propel their innovation and customer value to the next level. Our collaboration with ACS Custom showcases how the Figure 4 solution (hardware, software, and materials) enables direct and indirect digital production to increase efficiency, capacity, and flexibility, while concurrently offering superior end-part quality. This reinforces how additive manufacturing solutions can truly drive competitive advantage."

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Gerber MCT Cutter Empowers Colorwave Graphics to Transform During COVID-19 Pandemic

14 September 2020

As COVID-19 cancelled in-person events, sign & graphics companies were forced to develop new revenue streams in order to stay afloat. Colorwave Graphics was able to expand their business through a quick and seamless transition to producing personal protective equipment (PPE) by leveraging the Gerber MCT Cutter. Colorwave was able to develop signage for social distancing, sneeze guards and even a temporary hospital bed made from 100% recyclable material. Additionally, the versatile solution empowers the Illinois-based signage producer to greatly improve their speed and throughput, enabling them to cut 2-up gang banners in just 20 seconds, which normally would have taken 40 hours manually.

"The pandemic has further highlighted the need for versatility in the sign & graphics space," said Pete Doscas, Vice President & General Manager, Americas Sales & Service Delivery of Gerber Technology. "Since Colorwave was already leveraging a versatile solution that enables them to create and produce a variety of projects, they were able to quickly expand their business for PPE without falling behind."

Colorwave saw an immediate improvement in their production process when they integrated the

Gerber MCT Cutter into their supply chain last year. They were able to handle multiple projects at once and take on new projects that they previously weren't able to, all while improving throughput, reducing operator error and shortening time to market. With the Gerber MCT Cutter, the industry's most versatile solution, Colorwave was able to create 800 banners as 2-up gangs in just four hours. It cut each gang banner in 20 seconds, which normally would have taken their team 40+ hours to cut by hand.

"Having the ability to run multiple projects, all with unique cutting and routing processes, was a major game changer for us, " said Mike Lombardo of Colorwave Graphics. "Not only were we able to take on new projects but we were also able to dramatically increase our throughput."

To optimize their supply chain even further, Colorwave also utilized Gerber's advanced, remote service and support solutions. Gerber professionals were able to remotely access Colorwave's TigerVision™ software and resolve complex issues quickly to get them back up and running within minutes.

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Largest building engineer association in Spain chooses GRAPHISOFT

15 September 2020

Located in Barcelona, CAATEEB is Spain's largest association of surveyors, technical architects, and building engineers, and a leading authority on building engineering in the country.

According to the agreement, GRAPHISOFT distributor and exclusive training center SIMBIM will provide official training and BIM manager certification programs based on Archicad. As part of the joint collaboration, SIMBIM and CAATEEB will organize Archicad-themed professional seminars through monthly and quarterly activities benefiting CAATEEB members and other BIM professionals in the region.

In a separate agreement, young members of CAATEEB — or any company that hires a young member — can purchase Archicad at a discounted rate. Such support applies if the member is under 30 years of age and commits to obtaining GRAPHISOFT Archicad BIM professional certification.

"We are thrilled about collaborating with CAATEEB and encourage companies to hire young professionals who work with Archicad," said Dr. Mohsen Shojaee Far, CEO of SIMBIM. "These agreements will give young building engineering graduates easy access to a leading BIM software solution that seamlessly connects architects and engineers."

"We are pleased to partner with GRAPHISOFT — one of the leading global BIM software vendors — to directly support our members. We would also like to thank GRAPHISOFT and SIMBIM for recognizing our efforts in positioning Archicad as an official CAATEEB BIM partner in Barcelona," said Teresa Pallàs i Torres, Education Director of CAATEEB.

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Music Tribe selects Siemens Xcelerator portfolio for electronics manufacturing smart factory

17 September 2020

Siemens Digital Industries Software announced that Music Tribe, a multi-national leader for professional audio products and musical instruments, has selected solutions from the Xcelerator portfolio as the cornerstone for its digitalization initiatives, and as the technology to power a new smart factory in Malaysia. Music Tribe plans to deploy product lifecycle management (PLM) and manufacturing execution system (MES) software from Siemens to deliver a better customer experience using digitalization.

"We are proud to announce our collaboration with Siemens to implement an advanced design and manufacturing environment based on digital twin technology," said Uli Behringer, CEO of Music Tribe. "Using solutions from the Xcelerator portfolio can not only enable Music Tribe to revolutionize it's design processes, but also power our new digital and full automated factory in Penang, Malaysia, all for the benefit of our customers."

Across industries, customers are continuing to look for smarter and more personalized products. Music Tribe has chosen Siemens' personalized, adaptive and modern services to enable the creation and use of a comprehensive digital twin, which can allow them to realize the dream of digitalizing their customer-obsessed culture and the goal of achieving "lot size 1" manufacturing. Using Siemens' solutions, Music Tribe can better meet the needs of their customers and deliver a unique personal experience with their products, including audio mixers, amplifiers and other high-end audio equipment.

"Music Tribe is a strong leader in their industry, and Siemens is proud to have been selected to support its enterprise-wide standardization and scalability strategies," said Alex Teo, Vice President, South East Asia at Siemens Digital Industries Software. "Making the strategic decision to move forward with a clear digital transformation strategy to achieve Music Tribe's goal towards Customer Obsession can position Music Tribe as a strong industry player set up to meet the competitive market of tomorrow."

Music Tribe is a multi-national leader for professional audio products and musical instruments with operations in the UK, Denmark, Sweden, Canada, Germany, Japan, China and the Philippines. The company's brand portfolio includes brands such as Behringer, Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Bugera, Coolaudio and Auratone.

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NSITEXE Develops Custom Processors in Half the Time with Synopsys Tool

17 September 2020

Synopsys, Inc. announced that NSITEXE, a group company of DENSO Corporation that develops and sells high-performance semiconductor IP, used the Synopsys ASIP Designer Tool in the development of five specialized custom processors, including dedicated vector-processing engines, for its automotive data flow processor (DFP) platform. With ASIP Designer, NSITEXE was able to optimize the

processors' multicore architecture and automatically generate software development kits (SDKs), enabling the company to design the custom processors in half the time compared to designing them from scratch.

"We were on an extremely tight deadline to complete development of multiple complex custom processors for our customer's automotive application," said Sadahiro Kimura, Manager, Semiconductor IP R&D Unit, Advanced Technology Development Section at NSITEXE, Inc. "Synopsys' ASIP Designer Tool provided us with ready-to-use processor examples that could be extended to implement our custom ISA, allowing us to rapidly develop our custom vector extensions that satisfied our functionality and performance requirements. ASIP Designer enabled us to develop the data flow processor model in record time and deliver it to the customer on schedule."

NSITEXE established an innovative design flow for its custom processor IP development, aiming for agility and efficiency. Synopsys' ASIP Designer allowed NSITEXE to specify the desired processor architecture in a high-level language at the abstraction level of a programmer's manual. Based on this high-level description, ASIP Designer automatically configured the SDK containing a cycle-accurate instruction-set simulator, assembler, linker, debugger and C/C++ compiler including support for OpenCL C. NSITEXE started from the rich set of processor examples provided with ASIP Designer to accelerate the development of their highly-specialized vector processors. The immediate availability of the SDK allowed NSITEXE to rapidly profile and modify the architecture to improve PPA in an iterative way. In addition, ASIP Designer's ability to export the processor's simulation model with SystemC interfaces enabled a rapid setup of a virtual prototype of NSITEXE's multicore DFP.

"Innovative companies like NSITEXE have adopted ASIP Designer to speed the development of their custom processors," said John Koeter, senior vice president of marketing and strategy for IP at Synopsys. "Synopsys' ASIP Designer Tool provided NSITEXE with a starting point for their processor design, along with the ability to explore and optimize the processor architecture for their unique design requirements, giving them a distinct advantage in creating a highly differentiated product."

Availability and Resources

The ASIP Designer tool is available now

Hear NSITEXE present at the Synopsys ASIP Seminar – Japan on Sept 25

Learn more about Synopsys' ASIP design tools at http://www.synopsys.com/ASIP

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Steinbeis Embraces Digital Circular Economy with SAP HANA

14 September 2020

Paper manufacturer Steinbeis produces around 300,000 tons of recycled paper every year. But it is operating in a hotly contested market and to continue offering competitive prices and producing paper sustainably, the company is aiming for cost efficiency through digitalization – with SAP HANA.

At its factory near Hamburg, family-owned Steinbeis produces an annual 300,000 tons of office paper, magazine paper, and digital printing paper from recycled paper. It began the switch from using wood pulp to using 100 percent recovered paper as the raw material for its paper production back in 1976.

“It was a breakthrough innovation at the time,” says Ulrich Feuersinger, managing director of Steinbeis Papier GmbH. “In those days, paper manufacturers were focused more on obtaining low-cost raw materials than on what their environmental impact might be. But, as a sixth-generation family-owned company, we enjoy the advantage of not having to think in terms of quarterly results. When it comes to

growing our company, we can take a longer-term perspective."

Digital Transformation for Efficient IT

Today, Steinbeis is a leader in the sustainable, closed-loop manufacturing of recycled paper. As a midsize company, it faces fierce competition from larger rivals. "In Scandinavia particularly, we're up against competitors that source their raw materials from managed forests," Feuersinger explains. "We have to be better and faster than them, which is why having efficient IT systems is key to our survival."

Three years ago, Steinbeis began expanding its digital transformation in production across the entire company. "Industry 4.0@Steinbeis Paper," a project supported by avato consulting ag and SAP, is the first major step on this journey.

"We've been using SAP software in all the production processes at our paper factory for 20 years now," says Dr. Michael Hunold, head of New Processes at Steinbeis. "We've already achieved a high degree of digitalization and automation in production. But we realized that there was a lot of data we could only analyze in retrospect. That gave us the idea of having all that data analyzed automatically in the background." This is the focus of the Industry 4.0 solution Steinbeis is implementing across the board.

"Our aim from the start was to turn information into insight in seconds," Hunold says. "We want to transform data into knowledge and use that knowledge to reap strategic and operational benefits. SAP HANA is the solution that's helping us achieve that aim."

In conjunction with its strategic partner for the initiative, avato, Steinbeis translated its ideas into use cases for specific applications and defined the technical set-up. SAP HANA, with its broad functional portfolio and unique features, forms the core of the tailored solution avato delivered to Steinbeis to collect data from production, the manufacturing execution system (MES), and the SAP ERP application and analyze it using state-of-the-art machine learning algorithms.

"Avato implemented our queries in applications that capture the relevant data from SAP HANA, prepare it, and deliver it to us as actionable insight," explains Hunold. What that means in practice is that every single second more than 25,000 sensors on the production line deliver data, which is then analyzed on the SAP HANA platform in conjunction with data from the MES and SAP ERP in near real time.

"From the operational perspective, our aim is to supply paper with consistent quality features and to do so cost- and eco-efficiently," Hunold shares. "We can only do that if our technical processes are stable at all times." For Steinbeis, this includes learning from the experience of past incidents in production.

"Thanks to our fully digitalized production lines, we can monitor our processes automatically and at high speed," says Hunold. "So we now have the technical capabilities to respond to incidents early and avoid production downtime." Incidents typically include unusual machine behavior, excessive energy or raw material consumption, and product quality issues.

"Our aim is to maximize machine availability because the information we receive in real time means that we can resolve incidents without losing precious time," he says.

SAP HANA: Informed Decisions in Real Time

Steinbeis has connected more than 25,000 sensors to its central database, SAP HANA. The data these sensors deliver is organized and analyzed by avato's Smart Data Framework. Combining the integrated functions in SAP HANA for data management and analysis with powerful machine learning algorithms, the solution helps ensure that monitoring is seamless and entirely automated.

"SAP HANA is a super fast database – and that's exactly what we, at Steinbeis, need," says Hunold. "When I run an analysis, I don't want to have to wait hours for the results. If there are inconsistencies in

product quality, for example, I need to know immediately."

"With SAP HANA at the heart of our Smart Data Framework, query response times on large volumes of data are typically less than one second," says Wolfgang Ries, managing director of avato consulting ag. "Other key benefits of SAP HANA are its extremely high data compression ratio and the fact that it supports both the traditional relational data model and graph data models in a single, integrated application. We map the asset structure, production processes, business processes, and so on in graph data models as digital copies – all in SAP HANA, with just 256GB RAM."

Steinbeis is using the new platform not just for the applications in production, but also for innovative solutions throughout the company. Together with avato consulting, it has successfully implemented use cases in purchasing, materials management, and management accounting. Others are being planned.

"Thanks to SAP HANA, we can now complete our day-to-day tasks incredibly quickly," says Torben Link, head of Purchasing at Steinbeis. "By digitally transforming our purchasing processes, we're profiting from new possibilities that we simply never had before. We can perform mass data analyses and get genuinely actionable insight from them."

From chemicals to a magazine paper line, all the relevant data is now monitored and captured. "Having a better overview of how much we're spending – and where – allows us to devise new purchasing strategies," Link says. "We can analyze how our suppliers are performing and adjust our negotiating stance accordingly, which saves us money."

Sustainable Business in Times of Crisis

Having digitalized processes means that the purchasing staff at Steinbeis can work from almost anywhere – an invaluable advantage in times of crisis. According to Link, "Going digital has made us more resilient. When a crisis hits, we can continue focusing on our standard processes without neglecting others."

Earlier this year, the Steinbeis project won an SAP Quality Award in the Innovation category.

Ramin Mirza, head of Platform Sales at SAP, describes the "Industry 4.0@Steinbeis Paper" project as a stellar example of what the SAP initiative #GiveDataPurpose is all about: "Data is becoming an increasingly important asset for businesses. But at the end of the day, its value depends on how much there is of it, how it is used, and – naturally – its quality. #GiveDataPurpose encourages companies to look at how they can access the right data and information from a central repository in real time to make well-informed decisions faster. Steinbeis did just that, designing a digitalization strategy that will give it a vital edge over its competitors."

According to Steinbeis' Managing Director Feuersinger, the circular economy is rapidly becoming a must in today's society. "It doesn't just save energy and resources; it encourages people to think more carefully about how raw materials are used and consumed," he says.

His company's raw material is recovered paper – not wood. "We use significantly less energy and water to produce our paper than manufacturers of comparable paper made from fresh fibers. We reuse waste paper, so trees aren't being felled directly for our products." Steinbeis also has much lower CO_2 emissions than its competitors.

The company has plans for further digitalization going forward and launched a Web shop in early 2020. "We want our communication with customers to be digital in the future, too," Feuersinger says. "Direct communication is what our customers expect, and it's also a way for us to open up new sales channels."

"The key to our strategy is this: all the data from our paper factory is now available on one technology platform rather than – as in the past – in two separate places, production and the SAP world," Hunold

explains. “Our Industry 4.0 project and SAP technology have given us the infrastructure we needed. We now want to use that infrastructure for any process in paper manufacturing, paper sales, and raw materials procurement. That’s the challenge we’ll be tackling next.”

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Team Penske and Stratasys Extend Technical Partnership to Bring 3D Printing Performance to NASCAR and INDYCAR Racing

17 September 2020

In Team Penske’s 53-year history, over 500 victories have proven that speed doesn’t just matter when the green flag drops. It’s equally precious in the days leading up to every race. So today, Stratasys Ltd. (NASDAQ: SSYS) announced a new multi-year technical partnership agreement with Team Penske to continue to bring the time-saving benefits of 3D printing to all Team Penske NASCAR, INDYCAR and IMSA SportsCar teams.

“Stratasys has consistently contributed to our ability to reach new solutions for improving our race performance ahead of the competition,” said Team Penske President Tim Cindric. “Our 3D printing strategy has always been to produce high-quality parts for our racing operations in the shortest amount of time, and the ever-evolving additive technology from Stratasys gives us confidence in our approach.”

Team Penske and Stratasys have worked together through five championships and more than 70 race wins since their relationship started in 2017. In that time, Team Penske has gone from two Stratasys 3D printers to four. The company now has three sophisticated FDM® 3D printers supporting advanced materials – a Stratasys F900, Fortus 450mc, and Stratasys F370 – primarily for tooling, fixtures, and end-use parts for cars. The team also has one PolyJet Technology™-based J750 3D Printer for prototyping. All are installed at the Team Penske facility outside of Charlotte, N.C. Stratasys also supports the organization with advisory and technical support services aided by cloud-based GrabCAD Print software.

“All of our Performance Partners represent the highest levels of development in their industry, from auto racing to aerospace to America’s Cup yacht racing, and Team Penske is truly elite,” said Stratasys Americas President Rich Garrity. “You win trophies with an every-day commitment to excellence, and we’re here every day for Team Penske to help them rack up another 500 wins.”

Race teams have developed a clear understanding of how vital data is, and they have been gathering as much of it as possible as often as possible, for some time. But being able to apply that data to improving vehicle performance has been a bigger challenge.

Matt Gimbel, Team Penske’s production manager, said Stratasys additive technologies have made a big difference. “The Stratasys partnership has allowed us to not only increase our output, but also produce parts in new materials that are immediately installed on race cars,” he said. “As a result, we have more design freedom and manufacturing speed to iterate faster to reach the optimum design. Ultimately we get better parts to the racetrack faster.”

The efficiencies gained from FDM 3D printing are clear for Team Penske, from fast turnaround time for parts to having developmental bandwidth at the ready. For example, previous options to produce composite layup tooling were limited to the team’s CNC machining technology. Now, Team Penske is largely using FDM 3D printers. An idea on Tuesday can be in the car on Wednesday and ready for the weekend race. Race teams also are increasingly using 3D printed parts in the cars themselves, particularly using Nylon12 Carbon Fiber. Common 3D-printed in-vehicle parts include brackets, mounts, and applications of new designs such as the side mirrors of NASCAR cars. Performance gains

are not only achieved on the racetrack; Team Penske also uses 3D printed parts for pit crew equipment.

With 37 national championships, including 16 in INDYCAR SERIES competition, Team Penske has often been referred to as the New York Yankees of motorsports. Last year, the team produced single-season records of 40 victories and 45 pole positions to go along with three championships across its five series of competition around the globe.

Stratasys is a global leader in additive manufacturing or 3D printing technology and is the manufacturer of FDM®, PolyJet Technology™, and stereolithography 3D printers. The company's technologies are used to create prototypes, manufacturing tools, and production parts for industries including aerospace, automotive, healthcare, consumer products and education. For more than 30 years, Stratasys products have helped manufacturers reduce product-development time, cost, and time-to-market, as well as reduce or eliminate tooling costs and improve product quality. The Stratasys 3D printing ecosystem of solutions and expertise includes 3D printers, materials, software, expert services, and on-demand parts production.

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Wipro will provide engineering services for OpenNESS

15 September 2020

Wipro Limited will provide commercial engineering services for the Open Network Edge Services Software (OpenNESS) toolkit globally.

Open Network Edge Services Software (OpenNESS), is a Multi-Access Edge Computing (MEC) software toolkit that was developed by Intel and allows developers to create and deploy applications at the network edge or on-premise edge locations. This open source distribution fosters application innovation, and developer engagement with the ecosystem to create 5G and edge solutions.

The engineering services for OpenNESS builds upon an ongoing collaboration between Wipro and Intel on innovative 5G and edge solutions that utilize Intel's FlexRAN software reference architecture and OpenNESS. Wipro will leverage its long legacy of engineering services to ensure successful deployment of commercial solutions based on the OpenNESS platform. With the evolution of decoupled RAN architecture, the Edge node is becoming a common host for both RAN and application workload. Wipro's expertise in working with FlexRAN in conjunction with a cloud-native platform such as OpenNESS uniquely positions the company to onboard both RAN and application workloads on a common, optimized edge platform ready for deployment.

K.R. Sanjiv, Chief Technology Officer, Wipro Limited said, "Our collaboration with Intel will help build 5G solutions enabled by edge computing that will power industry applications, deliver superior experiences and drive business efficiencies. Intelligence closer to the source of data will help us re-imagine business applications for our clients. We are excited to deliver commercial support services globally for OpenNESS."

"Successful commercialization of open source innovations requires partners who can expertly integrate technology components as well as provide engineering services that result in a complete solution," said Renu Navale, Vice President and General Manger, Edge Computing and Ecosystem Enabling at Intel. "Wipro's collaboration with Intel on OpenNESS and several other Intel technologies makes them a valuable partner for accelerating service provider and enterprise edge deployments."

Wipro is committed to be the leading 5G solutions and implementations partner to its clients by providing them with strategic advice on the technology and unlocking its potential to generate new

revenue streams. Wipro's deep engineering and product design expertise enable clients to achieve their 5G objectives in three primary areas: Engineering, Intelligence and Monetization. In addition to the 5G lifecycle services, Wipro's specializations in automation, security and enterprise transformation help clients realize business value in their digital transformation journeys.

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Xactly Selects Oracle as its Preferred Cloud Infrastructure Provider to Drive Continuous Innovation

15 September 2020

Oracle today announced that Xactly, a leading provider of cloud-based sales performance management software, will be using Oracle Cloud Infrastructure as its primary cloud provider to run its flagship Incent SaaS application and accelerate its global expansion.

As part of the multi-year agreement, Xactly will migrate the majority of its business critical-workloads from private cloud to Oracle Cloud Infrastructure for improved elasticity and exceptional price-performance capabilities.

Additionally, Oracle and Xactly have entered into a strategic partnership to jointly market and sell solutions. By delivering its Incent Suite on Oracle Cloud Infrastructure, Xactly will provide its customers with improved performance and speed, lower total cost of ownership compared to other cloud providers, and easy and rapid expansion into new geographic regions.

"Oracle is excited to have a world-class SaaS provider like Xactly join the Oracle Cloud Infrastructure community," said Oracle CEO Safra Catz. "We are focused on delivering superior performance and value to our joint customers from our global Cloud Regions. By adopting Oracle Cloud Infrastructure, Xactly is improving operational efficiencies to better serve its global customers."

"Adopting Oracle Cloud Infrastructure as our preferred platform will empower us to speed innovation and transform customer experiences," said Xactly Founder and CEO Chris Cabrera. "Xactly's collaboration with Oracle is an integral part of our continued evolution. No other cloud provider delivers the cost and performance benefits we require and the exceptional customer service that is essential to our business."

Available on the Oracle Cloud Marketplace, the Xactly Incent Suite will also be integrated with Oracle Cloud CX APIs. As a pioneer in sales performance management, Xactly provides a comprehensive suite that empowers teams to build data-driven compensation programs and optimize effective sales programs. Powered by Oracle Cloud Infrastructure, Xactly and its customers will benefit from built-in AI and machine learning to help securely activate real-time insights and speed execution.

This is a significant example of a major cloud-native company turning to Oracle to transform its business. Xactly has been named a Gartner Magic Quadrant Leader in Sales Performance Management for the past seven years. The sales performance management market grew 14 percent to $1 billion in 2019 as companies look to gain insights into valuable data across their operations to improve sales execution and operational efficiencies.

Oracle is uniquely positioned to support Xactly's global expansion due to its network architecture, capacity, and Cloud Region locations. Oracle's second-generation cloud infrastructure, combined with expertise in security, will support Xactly as it expands.

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Product News

Fujitsu Develops Technology to Block Facial Authentication Fraud

18 September 2020

Fujitsu Laboratories Ltd.announced the development of a facial recognition technology that uses conventional cameras to successfully identify efforts to spoof authentication systems. This includes impersonation attempts in which a person presents a printed photograph or an image from the internet to a camera.

Conventional technologies rely on expensive, dedicated devices like near-infrared cameras to identify telltale signs of forgery, or the user is required to move their face from side to side, which remains difficult to duplicate with a forgery. This leads to increased costs, however, and the need for additional user interaction slows the authentication process. To tackle these challenges, Fujitsu has developed a forgery feature extraction technology that detects the subtle differences between an authentic image and a forgery, as well as a forgery judgment technology that accounts for variations in appearance due to the capture environment.

Fujitsu's new technology ultimately makes it possible to prevent impersonation with forgeries using only face images taken at the time of authentication, enhancing security without sacrificing the convenience of face authentication and contributing to the DX (digital transformation) of operations with improved personal authentication technologies.

Growing Risk of Fraud Using Facial Images with Popularity of Biometric Authentication

While biometric authentication continues to grow in popularity, many risks remain. In some cases, when facial images are disclosed on the Internet via SNS, etc., the possibility emerges that the image may become the target of malicious users if stolen due to the loss of an ID card with a facial photograph, etc- because of the prevalence of such images, this makes facial authentication more vulnerable than other authentication methods, such as finger prints or palm veins.

Challenges

Smartphone screens, ID cards, and face images printed on paper vary in their appearance due to factors like reflections or blurring on a smartphone screen. It has proven difficult to determine the authenticity of a face by relying on a facial image alone because of the effects of similar fluctuations, such as reflections caused by fluorescent lights or sunlight, or blurring caused by facial movement. For this reason, special cameras like near-infrared cameras or depth cameras that measure the distance between the subject and the camera are used to catch typical signs of forgery. These methods remain imperfect, however, and lead to issues including increased costs for dedicated cameras and reduced convenience due to the addition of motion information required when using general purpose cameras. The development of technologies that can conveniently and inexpensively detect spoofing with general purpose cameras has become a topic of consideration.

About the Newly Developed Technology

Fujitsu has developed a technology that can detect the impersonation of others through photographs, etc. from face images taken with a general purpose camera. The features of the developed technology are as follows.

Forgery Feature Extraction Technology Based on Characteristics in Photographic Appearance Unique to Counterfeit

Various features characteristic of a forgery remain in images obtained by presenting the forgery to the camera, such as reflections on the terminal screen of a smartphone, and distortion of the shape of the face caused by taking a planar forgery. Fujitsu has developed a forgery feature extraction technique to express the difference between the forgery's characteristic features and the real face as determinable values.

First, the face image captured by the camera is separated into various elements that exhibit the characteristic features of forgery, such as reflection elements and shape elements. Next, image processing technology is used to digitize the characteristic features of forgery for each of the separated elements, and the characteristics of each element are combined to generate a characteristic for judgment. This makes it possible to identify counterfeits without information based on user operations.

Technology for Judging Forgery in Response to Variation in Image Quality due to Capture Environment

In the past, in order to respond to variations in image appearance caused by the capture environment, a single determination model was generated by training a system with face images containing various variations using machine learning. However, the wide range of variations in the way images are taken, depending on the type of forgery, such as a smartphone screen or ID card, complicates the boundary between the real face and the forgery, making it difficult to identify the forgery even with the latest Deep Learning techniques. Therefore, Fujitsu has developed a technology that can correctly identify counterfeits by generating determination models that reduce the influence of variations by learning the categories of face images that have similar variations, such as face images taken at the office or face images taken by a window.

The development technology steps are divided into a training phase and a judgment phase. In the training phase, face images acquired in various environments are classified into categories such as window, backlight, and normal based on the capture environment, such as the intensity of light and the direction of light. Next, a judgment model is made for determining whether the target is a real face or a counterfeit with machine learning, using the decision features generated by the forgery feature extraction technology for each category.

In the judgment phase, in order to estimate which of the categories defined in the training phase the input image capture environment is close to, the similarity between the input image and each category is calculated dynamically. Next, in order to emphasize the result of the determination model of the category in which the input image and the environment are close to each other, a value obtained by multiplying the score indicating the authenticity output from each determination model by the weight based on the similarity with each category is used to determine whether or not the object is a fake .

By using these technologies, it becomes possible to identify counterfeits using only the information of face images taken by a general purpose camera, and to realize relatively convenient and inexpensive spoofing detection.

Outcomes

Fujitsu reviewed its own evaluation data set collected in a general office environment or an environment where telework outside the office is assumed, and confirmed that spoofing attempts can be detected with the same level of accuracy as before, even when there is no specified movement by a dedicated camera or a user. This makes it possible to prevent unauthorized access at a low cost without sacrificing convenience. The technology offers the potential to improve security for workers remotely accessing company systems from offsite and to contribute to the digital transformation of operations through the advancement of enhanced personal authentication technology.

Future Plans

Fujitsu aims to further improve the accuracy of its forgery detection technology with the aim of putting it into practical use by the end of the fiscal 2020 in March 2021.

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New Tebis software release introduces more automation

18 September 2020

For over 35 years, Tebis Group has provided its capabilities in CAD/CAM and MES software with associated services for mechanical component, model, pattern, die and mould manufacture.

For Tebis, automation is a key principle for effective and efficient CNC programming while improving machining quality, efficiency and safety. The latest release of Tebis 4.0 R8 has added additional capabilities for more automation.

CAM: Automation: clearer operating structures in the revised feature scanner

The 'Auto' function is also convenient: The component is completely scanned with no interruption, and clearly evident features are automatically inserted. If several different features are possible for a machining operation, users can jump right to the appropriate areas after scanning and select the desired feature.

CAM: Machine technology: quickly and easily create tool assemblies

The insert length for tool assemblies can be determined at the click of a button. A line at the diameter of the cutter is drawn parallel to the tool axis. The intersection point between this line and the shank contour yields the insert length.

CAM: Milling

Machining time is significantly reduced. The machine spindles are subject to lower loads due to machining in the axial direction. Side milling and downward machining can be easily combined, so users can fully benefit from the advantages of both strategies

CAM: Job planning: more collision checking in multiple set-ups

For components in multiple set-ups, the blanks for adjacent components are now also fully accounted for by collision checking with the CNC simulator.

Laser hardening

The fully integrated solution includes manufacturing preparation allowing for the automatic generation of curves. Integrated collision checking it supports the simple and intuitive calculation of NC programs for laser hardening systems. The hardened areas are coloured differently depending on the intensity of the laser irradiation which helps to evaluate whether the laser passes over the part at certain points or remains in position.

Laser weld cladding

The 'Pocket' function in the 'LClad' module can be used to automatically generate NCJobs for laser weld cladding to fill pockets. The software automatically accounts for holes and excludes it from cladding. Operators can also easily create complex toolpaths with the integrated simulation and collision checking functions.

CAD: Reverse engineering: more automation and clear presentation of the results

As the basis for reverse engineering, you create a wire-frame model from digitised data, which in turn is

used to create a surface model. The surface model can now be generated automatically.

Faster machining with indexed collision avoidance

The function for residual stock machining provides a new and highly convenient strategy for collision avoidance with indexed tilt determination. This strategy automatically detects and connects milling areas that can be machined collision-free with the same tilt direction.

The corresponding tilt direction is also calculated and areas that can't be machined without collisions are deactivated and can be selected in the continuation job. Flexibility is maintained and users can also manually subdivide the milling areas as desired.

Shorter run times and fewer machine movements in 5-axis simultaneous avoidance milling

The function for 5-axis simultaneous avoidance milling has been comprehensively improved. Specific milling areas that can't be machined collision-free in an NC job calculated using the collision avoidance.

5-axis simultaneous deburring, also with tapered cutters

Edges that don't lie on the same plane in space can now also be processed by automatic multi-axis simultaneous deburring with tapered cutters. You can also specifically select whether you want to machine the component in climb cut, conventional cut or lace cut mode. Machining of sharp edges and corners has also been optimised.

Integrated simulation

Integrated simulation ensures collision protection before NC output. Travel behaviour and switching of drill bushes and drill bush holders are simulated with absolute precision in the virtual CAM environment.

CAM: Job planning: collision checking in multiple setups

For components in multiple set-ups, the blanks for adjacent components are now also fully accounted for by collision checking with the CNC simulator.

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NUM launches digital twin technology for CNC machine tools

14 September 2020

CNC specialist NUM has launched digital twin technology that enables machine tool manufacturers to reduce their time to market dramatically, by using powerful Industry 4.0 simulation techniques.

Originally known as pairing technology, and first used by NASA in the early days of space exploration, digital twin technology is now rapidly gaining industry acceptance as one of the most cost-effective means of accelerating the development of products, processes and services.

For automation products such as machine tools, a digital twin is a virtual model that uses simulation, real-time data acquisition/analysis and machine learning techniques to allow full evaluation of a machine's dynamic performance before constructing a physical prototype. The same technology can also be employed for customer presentations, virtual commissioning and operator training purposes – and all well before the actual machine itself has even been built.

NUM offers two versions of digital twin technology, to best suit customers' needs. Both versions are designed for use with NUM's powerful, open-architecture Flexium+ CNC platform. One version uses a

naked Flexium+ controller and resident virtualization software running on the system's industrial PC to simulate the twinned machine automation. The other version uses the actual Flexium+ controller that will eventually be incorporated in the machine, linked via EtherCAT to a standalone PC running specialist high speed hardware simulation software to represent the mechatronics of the twinned machine.

The virtual controller version includes a software development kit for creating the software model of the machine. The model is a standalone PLC program that uses predefined components to simulate individual machine elements, such as sensors, spindles, pneumatic cylinders, etc. It is loaded into the integrated PLC of the Flexium+ controller. The Flexium NCK in the controller executes the NC programs and simulates the changing position values of the machine's axes. To help users visualize the process, NUM's package includes the CODESYS Depictor software tool produced by CODESYS GmbH, which is used to produce 3D visualizations from the IEC 61131-3 code created by the simulation.

The other version of NUM's digital twin technology package accommodates real-time data acquisition and analysis. It is based on the ISG-Virtuous hardware simulation software produced by Industrielle Steuerungstechnik GmbH (ISG). The Flexium+ controller that is intended to be used in the physical machine is connected via an EtherCAT network to a standard PC, and interacts with the simulation software in real-time. The PC acts as the twinned virtual machine – with all simulated, virtual components behaving like real components in terms of their interfaces, parameters and operating modes – to accurately replicate the structure and dynamic performance of the real machine. The movements of the machine are displayed realistically on the PC, using the supplied 3D simulation software.

NUM's new digital twin technology provides machine tool manufacturers with a very powerful and cost-effective means of reducing their developments costs and accelerating their time to market. The virtual controller version is especially useful for the early development stage of a project, before the CNC system has been finalized, while the real-time hardware simulation version has the advantage that all sequencing (PLC) and motion control (CNC) programs that are created during development can simply be transferred to the real machine as soon as it becomes available.

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Vectorworks, Inc. Launches 2021 Version of BIM and Design Software

17 September 2020

Global design and BIM software provider Vectorworks, Inc. has launched Vectorworks 2021 with a continued emphasis on improving product quality, performance and the user experience. This latest release includes Vectorworks Architect, Landmark, Spotlight, Designer and Fundamentals, as well as 2021 versions of Vision, Braceworks and ConnectCAD.

"Vectorworks 2021 is the continuation of our commitment to quality and performance and is something that will further drive our mission to provide best-in-class design and BIM tools to AEC, landscape and entertainment professionals," said Vectorworks CEO Dr. Biplab Sarkar. "When you drill down to this year's launch theme of 'simplicity to design the complex,' you can see how we've re-engineered our most frequently used tools to keep the feature set reliable and cutting edge."

In addition to quality-and performance-focused features like the new Project Sharing server and multithreaded Vectorworks Graphics Module (VGM) Cache that offers up to five times faster file loading, Vectorworks 2021 boasts interoperability capabilities with Excel Import/Export and PDF Drawing Marker Links. The Smart Options Display also allows users to stay in the modeling space

without needing to constantly move their mouse between drawing area and tool palettes, plus it's customizable to easily access the most-used tool sets, last-used tools and more.

Specifically, architecture and landscape professionals will enjoy the new Materials feature that can define the graphical attributes and data of building materials all in one location for a better BIM workflow. Entertainment professionals will streamline their rigging layout process with the help of improvements to the hoist tools.

Vectorworks 2021 is already garnering praise:

"The Smart Options Display is an innovative leap forward in Vectorworks' user interface. I know that after a short period of time using it, everyone in the office will wonder how we ever did without it." – François Lévy, AIA, NCARB, Principal at François Lévy Architecture + Interiors

"The new structural grid tool is a huge leap forward in coordinated drawings. There is a sense of magic about the tool." –Ion Webster, Principal of Pults & Associates, LLP

"I absolutely love the live interactive ability to focus multiple fixtures at once. The lighting device improvements in Vectorworks 2021 are the kinds of features that many of us are used to having on a lighting console, so it makes sense that we would have this in Vectorworks." –Scott Barnes, Lighting Console Programmer and Owner of i-light design

"My jaw dropped to the floor when I realized that the full component section for Landscape Area soil components now interacts with Site Models when used as a texture bed modifier. This is a game changer because it allows us to better understand the effects of a full section on our cut/fill grading and site modeling workflows." –Eric Berg, Senior Associate at Pacific Coast Land Design

"I see Excel Import/Export becoming an important part of practice for pretty much any Vectorworks user to use data from their drawings to prepare takeoffs, cost estimates, schedules, etc." –Stephen Schrader, PLA, ASLA, GRP, Landscape Architect at Renta Urban Land Design

To learn more about the latest release, visit vectorworks.net/2021 or join the conversation on social media with #Vectorworks2021.

The English-language editions of Vectorworks, Braceworks, ConnectCAD and Vision 2021 are available today. The release of localized language versions will begin in October and conclude the first quarter of 2021. For more information about the availability of Vectorworks 2021 in other markets, contact your local Vectorworks distributor. Members of the Vectorworks Service Select maintenance program and subscription users will receive upgrades to Vectorworks 2021 as soon as the product is released in their local markets.

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