CIMdata

PLM Weekly Summary

Contents

CIMdata News

Aerospace & Defense PLM Action Group Publishes Report on Multiple-View Bill of Materials Solution Evaluation Benchmarks

16 July 2020

Representatives of the Aerospace & Defense PLM Action Group (AD PAG) have published the results and conclusions from a sponsored project team that engaged with four leading software providers to validate the team's recently defined multiple-view bill of materials (Multi-view BOM) requirements by benchmarking use cases using commercially available software. The benchmarks are the culmination of three years of effort by the team made up of domain experts from the nine-member companies and select Tier 1 suppliers. This effort follows the publication of their comprehensive position paper on the subject in February 2019.

The report documents the definition of use cases that encapsulate requirements for Multi-view BOM management within an aerospace original equipment manufacturer (OEM), and the findings and conclusions from evaluating the capability of commercially available PLM software to fulfill those requirements. The report concludes that the use cases are valid, and that commercial technology has matured to a level where the implementation of Multi-view BOM management within an aerospace OEM is a practical possibility, albeit with caveats.

The AD PAG members consider Multi-view BOM management to be foundational to their Digital Thread strategies. According to Shyam Rangaswamy, Product Manager, Digital Engineering Solutions for GE Aviation, "The Multi-view BOM benchmarks helped our company to better understand what

capabilities do and do not exist in PLM software today for managing BOM configurations. The effort also allowed us to engage in meaningful conversations on BOM configuration management that align directly with our future vision."

Select tier 1 suppliers have likewise found benefit from being part of the project team. "The discussions with the PLM providers and demonstrations of different solutions have been of high value for Saab and have already brought good input to our ongoing implementation project. We will definitely bring the benchmark results into our strategic work with future PLM solutions," says Magnus Manke, Senior Solution Architect - PLM & MBD for Saab Aeronautics.

According to James Roche, CIMdata's A&D Practice Director, "The concept of linking multiple representations of a product, each tuned to the needs of creators and consumers in various domains along the lifecycle, is powerful. These benchmarks indicate that commercial PLM solutions have advanced over the last 3 to 5 years to a level where enablement of this core element of the Digital Thread is now technically feasible in industries as complex as aerospace & defense. This is a big deal."

Since its founding in 2014, the Aerospace and Defense PLM Action Group, which is administered by CIMdata, has sponsored research and jointly staffed projects on a diverse set of prioritized industry and technology topics. These topics include Model-Based Definition, Multiple-View Bill of Materials, PLM Technology Obsolescence Management, Global Collaboration, and Model-Based Systems Engineering. As an outcome of these investments, the Group has released a series of direction statements and position papers that are freely available for downloading from its website at www.ad-pag.com. Making these materials available is consistent with the Group's mission to engage proactively within the PLM ecosystem and advocate for common direction and positions within the aerospace and defense industry on PLM-related topics of importance to the members.

To download the paper visit https://www.cimdata.com/en/aerospace-and-defense/publications/mv-bom#

[⬆]*Click here to return to Contents*

CIMdata Announces Fall Dates for PLM Core Virtual-Live PLM Certificate Program
16 July 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that it has added a date in the fall for the PLM Core Virtual-Live PLM Certificate Program. This class follows the successful programs held in June. Classes will take place during the week of September 28th – October 2nd, with separate offerings for attendees in the North American and European time zones.

The PLM Core Virtual-Live PLM Certificate Program provides a way for the broader PLM community to experience CIMdata's world-class PLM education programs without leaving the home, office, or plant. The PLM Core Virtual-Live PLM Certificate Program comprises two modules. The first module is a self-paced e-learning module, PLM Basics, which is a three-part online educational program. The second module, PLM Core Concepts, is comprised of five half-day virtual-live sessions that take place over five consecutive workdays. The successful completion of the course and the associated assessments leads to a Core Certificate of PLM Leadership.

According to CIMdata's president and CEO, Peter Bilello, "This program makes CIMdata's PLM education and training available to a wider group of PLM professionals. It also continues to satisfy the

need for providing non-biased education for today's PLM professionals at a time when many are unable to leave home or travel." Mr. Bilello also stated that "CIMdata has been working with the PLM industry for more than 35 years. Our consulting services and research expertise are known and respected around the world for their best practice-based content. CIMdata's educational offering draws on this vast knowledge and experience. Our PLM Core Virtual-Live course leverages CIMdata's internationally recognized five-day PLM Certificate Program for Industrial Organizations and PLM Solution Providers."

For more information on CIMdata's PLM Core Virtual-Life Course, visit https://www.cimdata.com/en/education/plm-core-virtual-live-plm-certificate-program.

Click here to return to Contents

CIMdata President & CEO, Peter Bilello, Featured in a Recent Episode of MinervaPLM TV

17 July 2020

CIMdata's President & CEO, Peter Bilello, was recently interviewed by Minerva's Jennifer Moore about his recent position paper "Why is PLM Often so Hard?" Learn what he had to say at https://www.cimdata.com/en/resources/complimentary-reports-research/articles

Click here to return to Contents

CIMdata President & CEO, Peter Bilello, to Participate in a Webinar on Easier Ways to do PLM

14 July 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that its President & CEO, Peter Bilello, will take part in a webinar that is being sponsored by Upchain.

Companies must ensure that their PLM solution addresses their real enterprise PLM requirements in a manner that is easy to implement and intuitive to use for all users, forming an effective and innovative work environment. Upchain's thesis in designing a new SaaS Multi-Tenant PLM solution is that people must be empowered. People must be at the center of PLM, not serve it, and it must support how people prefer to work. Join CIMdata and Upchain for a free webinar that will share more about this approach for those who are seeking a new and more straightforward way to do PLM.

According to Mr. Bilello, "Albert Einstein, the famous theoretical physicist, said it best, "Everything should be made as simple as possible, but not simpler." This is true for PLM as well. When PLM is made as simple as possible, you maximize ROI and innovation flourishes. It is that simple."

Peter Bilello has more than 30 years of experience in the development of business-enabling IT solutions for research, engineering, and manufacturing organizations worldwide. He has participated in PLM analysis, selection, implementation, and training; CAD/CAM/CAE/CIM implementation and management; synchronous and lean manufacturing consulting; software engineering; and general data management strategy development and support. He has authored numerous papers and research reports on PLM and related topics, and his articles, commentaries, and perspectives have appeared in publications throughout the Americas, Europe, and Asia.

With this webinar in mind, Upchain's founder & CEO, John Laslavic, said, "Our guiding principle and vision for PLM is that it acts as an operating system—always on, always there, never worried about, and never in the way of getting the real work done. The users and the organization see the results of the applications built on top of it, but the PLM system itself should be invisible."

People who are interested in learning more about how to make PLM simpler without sacrificing functionality will find this webinar to be time well spent.

The webinar, People-Ready PLM, will take place on Thursday, 20 August, at 11:00 a.m. EDT. To learn more or to register for this free webinar, visit https://www.cimdata.com/en/events/cimdata-supported-events/event/549-webinar-people-ready-plm.

Click here to return to Contents

CIMdata to Offer Virtual-Live Digital Transformation Short Course in September

15 July 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that it is offering a virtual-live Digital Transformation Short Course in the late Summer. The program, which is part of CIMdata's world-class PLM Leadership education and training offering, will take place over two four-hour sessions on September 10 and September 17.

The "Digital Transformation Short Course" offers those participating in a digital transformation initiative the opportunity to gain a solid understanding of the critical concepts and industry-leading best practices. The successful completion of the course and the associated assessments leads to an Executive Certificate of Digital Transformation Leadership.

For many, digitalization is moving from a fuzzy concept to the newest data-driven disruption of the status quo. Those involved in a digital transformation journey need to not only understand what digitalization is but how to leverage it for business success. Attendance at this class will show how this is achievable.

For more information on CIMdata's Digital Transformation short course, visit https://www.cimdata.com/en/education/digital-transformation-short-course.

Click here to return to Contents

Hexagon MSC Apex Generative Design Expedites Design for Additive Manufacturing

15 July 2020

Key takeaways:

Generative design is the initial step toward a vision of automatic creation of model geometry that fully meets design requirements.

The uncomplicated setup and execution of MSC Apex Generative Design does not require highly skilled simulation experts.

MSC Apex Generative Design exports proper geometry after each iteration allowing the user to view the algorithm's progress and potentially make changes to explore various design alternatives.

MSC Apex Generative Design offers its users a high degree of automation and in combination with a smooth workflow can accelerate time-to-market.

To gain a competitive advantage, product designers seek to use the latest technology but do not want the burden of having to use highly skilled resources. Hexagon (www.hexagon.com), a global provider of information technologies that drive manufacturing productivity, acquired MSC Software in 2017 and

developed the Apex Generative Design solution to deliver on that goal.[1] CIMdata defines generative design as a process wherein the shape and composition of a product are determined by using physics-based simulation and other analysis methods that consider performance requirements and optimize objectives such as minimum cost and weight.
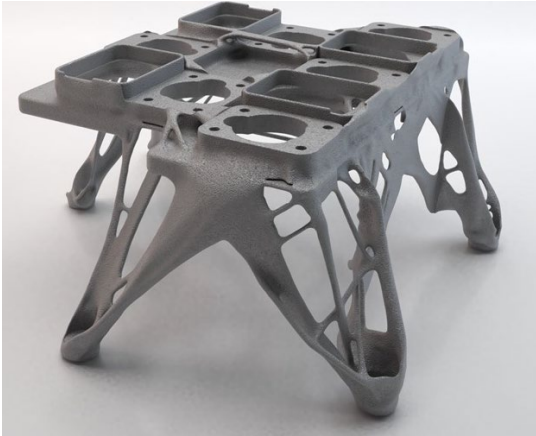
Figure 1—Satellite Bracket Generated using MSC Apex Generative Design is more Lightweight while Reducing the Overall Stress Level
(Courtesy of Hexagon)

MSC Apex Generative Design fulfills that mission, allowing the creation of designs that are tailored for additive manufacturing (AM). Once given start conditions by the user, the MSC Apex Generative Design algorithms automatically mesh, analyze, optimize, interpret analysis results, and execute model smoothing as they rapidly iterate toward attaining user-specified goals. The performance of the solution allows a designer to explore different design candidates. Each resulting model structure is fully adapted for AM production. CIMdata concurs with the Hexagon strategy of providing a solution that minimizes the requirement of skilled experts in simulation and AM.

The Challenge

The traditional method of design uses a "*model then analyze and modify*" iteration that takes time with geometry often being passed back and forth between design engineers and CAE specialists. Generative design turns the traditional approach on its head. Generative design algorithms themselves perform both the analysis and geometry modification cycle. The algorithms are capable of processing numerous model permutations seeking an optimum solution specified by the user. However, many generative design solutions in the market still require a design engineer, specialized CAE analyst, and additive manufacturing expert to accomplish the goal of an optimized, manufacturable model.

Hexagon promises that MSC Apex Generative Design does not require a team of specialists. The user first specifies the *design space* of the model—the bounded volume within which the model must be contained, including "keep out" areas that are necessary for mounting the resultant model in a larger assembly. Next, the designer identifies the material of the model and the analysis goals, such as minimizing material, therefore weight, or optimizing structural strength. MSC Apex Generative Design then takes over and rapidly performs the iterative calculations.

Figure 2—Iterative Optimization Steps using MSC Apex Generative Design where Every Iteration is Displayed and can be Exported
(Courtesy of Hexagon)

MSC Apex Generative Design exports a proper geometric model after each iteration. This allows the designer to view the optimization progress to check whether it is heading in the right direction. If needed the designer can adapt the model to refine or alter the direction of the optimization to explore other potential solutions. CIMdata views this flexibility as adding more control for the designer in interactively arriving at an optimized model. The fact that parameters can be changed to generate different design variants allows the designer to explore more alternatives and helps foster innovation.

Hexagon reports they have done extensive tuning of MSC Apex Generative Design to exploit both CPU and GPU power to offer increased productivity.

Summary

The growth of generative design methods is driving new levels of innovation and optimization across product development. The methodology, with its ties to additive manufacturing, is resulting in products that were impossible to realize with traditional subtractive manufacturing technology and traditional design development processes. Hexagon's MSC Apex Generative Design, with its easy setup, ability to deliver viable models at each step in the optimizing iteration, and its adaptability to drive AM is helping spearhead new inroads of innovation in product development. CIMdata recognizes the significance of MSC Apex Generative Design and the benefits it brings design engineers. Companies would do well to explore the solution as a strong addition to their tool portfolio.

Click here to return to Contents

Ken Amann, CIMdata Executive Consultant, Interviewed for the Where Today Meets Tomorrow podcast

17 July 2020

CIMdata's Executive Consultant, Ken Amann recently sat down with Ginni Saraswati to discuss his career and how digitalization is driving change in industries today in ***Where Today Meets Tomorrow***, a

new Siemens podcast.

https://blogs.sw.siemens.com/podcasts/where-today-meets-tomorrow/podcast-digitalization-past-present-future-with-ken-amann-episode-1/

Click here to return to Contents

Siemens and SAP Announce Strategic Relationship - A CIMdata Highlight

14 July 2020

Today, July 14, 2020, Siemens Digital Industries Software (Siemens) and SAP, two long-time leaders in the product lifecycle management (PLM) market, announced a strategic relationship designed to drive industrial transformation and digitalization in support of Industry 4.0. These two industry leaders are combining their expertise in PLM, supply chain management, project and portfolio management, and asset management to deliver new innovations and business models that enable their customers to remove process and information silos and accelerate industrial transformation. As part of this relationship, SAP will resell Siemens' Teamcenter solution as its core product data management (PDM) backbone and Siemens will resell SAP's Intelligent Asset Management and Project and Portfolio Management solutions.

The objectives of this relationship include:

Creating a comprehensive digital thread throughout the complete lifecycle

Enabling enterprises to deploy a sustainable and closed-loop development process

Fueling the design of products with real-time supply chain connectivity and in-use feedback

Dramatically improving time to value for both customer bases

Each company is a leader in their respective domains—Siemens in engineering, simulation, and comprehensive product development support; SAP in resource management, manufacturing support, and supply chain management, just to name a few. Both have demonstrated strong lifecycle approaches. Each company brings deep experience, expertise, and technology in their respective domains and both have offered integrations with the other's environments for years. While they have some overlapping solutions and technologies, overall, they offer highly complementary solutions. For example, SAP's Innovation Management offering supports the "fuzzy front end" of innovation, capturing early market requirements, a natural fit with the formal requirements and configuration management capabilities in Teamcenter, creating the beginnings of the digital thread. SAP Intelligent Asset Management is a natural complement to Siemens MindSphere open IoT ecosystem, which provides the smart product connectivity used to enable advanced maintenance and control of fielded assets, as well as with Siemens recently announced Teamcenter Capital Asset Lifecycle Management (CALM) offering.

CIMdata believes that this Siemens-SAP relationship will provide significant business and IT benefits for customers of both companies. More strategically integrating their solutions should indeed enable their customers to create and use a more complete digital thread than has been possible in the past. This new combination will also enable the definition and management of a more comprehensive digital twin strategy. Finally, it should enable companies to create and leverage more effective supply chains for development, production, and aftersales services and support.

CIMdata believes that, over time, this relationship will provide the opportunity to expand and leverage more areas of support from each company, e.g., software lifecycle management and electronics design from Siemens, and customer relationship management and logistics from SAP. Additionally, both companies have substantial R&D organizations that can be applied to creating more in-depth

comprehensive solutions to address their common customers' needs.

We are excited about the potentially disruptive nature of this new relationship and look forward to seeing it develop and deliver new capabilities for manufacturers in all industries. Additionally, we are looking forward to seeing how their go-to-market strategies evolve, as well as how programs and roadmaps of both Siemens and SAP are defined and executed.

⬆️*Click here to return to Contents*

Acquisitions

Planview Acquires AI/ML Leader Aptage

14 July 2020

Planview announced the acquisition of Aptage, a technology leader and pioneer in the application of Artificial Intelligence (AI) and Machine Learning (ML) to portfolio management and work management.

Aptage's expertise in data science is combined with unique domain knowledge in the economics of development spanning Agile and project methodologies. The company's technology and IP is focused on the application of AI/ML to enterprise software, offering customers early insights and visibility into anticipated value and delivery risk across traditional project management and agile methodologies. For Planview customers, this ultimately means more accurate project outcome forecasting, regardless of work methodologies and processes used to get work done.

"In today's disruptive environment, the companies with early insights are the ones that can pivot more quickly to create competitive advantage," said Greg Gilmore, CEO of Planview. "Aptage's innovative AI/ML technology creates insights into project value and delivery risk, improving and strengthening the strategy to delivery pipeline. We're excited to welcome Aptage into the Planview family and bring this expertise to our customers."

"Aptage and Planview share a common vision for the future of AI/ML within portfolio management and work management," said John Heintz, co-founder and CEO of Aptage. "We're thrilled to be taking this next step together, expanding the reach of our technology and driving better outcomes for organizations."

Founded in 2016, Aptage's proprietary IP was designed to accommodate the small data characteristics of Agile and traditional projects to continuously learn, predict, and provide actionable advice throughout the strategy to delivery pipeline. The technology has been proven with early adopters and is ready to scale to the mainstream market with Planview.

John Heintz, co-founder and CEO, and Dr. Murray Cantor, co-founder and CTO, will be joining Planview, bringing extensive experience and unique expertise to the company. Heintz is a recognized thought leader in the Agile and Lean community with 20 years of hands-on experience, and will be joining to lead product management for AI/ML. Dr. Cantor joins Planview as the company's Chief Data Scientist, a new role created in recognition of the momentum in data science and the application of AI/ML in enterprise software.

Planview will be embedding the Aptage AI/ML IP across the Planview product portfolio. We anticipate the Aptage technology being available to customers later this year. To learn more, visit: Planview.com.

Siemens acquires Avatar, expands EDA footprint with innovative Place and Route technology
17 July 2020

Siemens has signed an agreement to acquire Santa Clara, CA-based Avatar Integrated Systems Inc., a leading developer of place and route software for integrated circuit (IC) design. Avatar helps engineers optimize power, performance, and area (PPA) for complex chips with fewer resources. Siemens plans to add Avatar's technology to the Xcelerator portfolio as part of Mentor's IC suite of software, capitalizing on the growing segment of place and route. Avatar will be integrated with existing market-

leading products from Mentor, a Siemens Business, including the Calibre® platform, Tessent™ software, and Catapult™ HLS software, to help customers develop solutions that address today's and tomorrow's design implementation challenges.

"Customers are accelerating their move to advanced process nodes. Navigating the increasing complexity is a crucial challenge," said Joseph Sawicki, executive vice president, Mentor IC EDA, Siemens Digital Industries Software. "Avatar's innovative software architecture, as well as a reputation for ease of use, helps customers overcome this complexity with advanced node place and route capability. The Avatar solution, backed by Siemens' investment, will offer customers shorter time to design closure with better PPA results than existing competitive offerings. We welcome the Avatar team and community to Siemens."

At 7nm and below, detailed routing must be considered during placement. Avatar pioneered a detailed-route-centric architecture that has been built bottom-up on a unified in-memory data model, designed to enable all engines to access full design data and attributes at any time. This empowers each engine (placement, routing, timing, optimization, clock tree synthesis, etc.) to dynamically invoke other engines incrementally.

"Avatar's approach can lead to excellent correlation through all phases of place and route, with improved PPA results," said Ping San Tzeng, Chief Technical Officer, Avatar Integrated Systems. "As a part of Siemens, Avatar can further develop this approach, accelerate R&D, and grow market share by leveraging a much larger pool of resources. We are proud of our technical achievements and well-known record for excellent customer support and look forward to enhancing these strengths as part of Siemens."

Avatar's products are built on technologies acquired from ATopTech Inc. in 2017. The product line includes Aprisa, a netlist-to-GDS full-function block-level physical implementation tool, and Apogee, a complete top-level prototyping, floor-planning and chip assembly tool. The industry's top semiconductor foundries have qualified Avatar's products for designs at established and advanced process nodes, such as 28nm and 7nm - with 6nm and 5nm currently under development.

Siemens' acquisition of Avatar is expected to close in the second half of 2020. Terms of the transaction are not disclosed.

Wipro to acquire IVIA Servicos de Informatica Ltda, a specialized IT Services provider in Brazil
15 July 2020

Wipro Limited signed an agreement to acquire Brazil based IVIA Serviços de Informática Ltda.

IVIA is headquartered in the Northeast of Brazil, with offices in Fortaleza-Ceará, Recife-Pernambuco and Natal-Rio Grande do Norte. Founded in 1996, IVIA provides IT solutions including system development, maintenance, consulting and project management services to clients in different sectors such as Financial Services, Transportation, Retail, Healthcare, Consumer Goods and Manufacturing in Brazil.

IVIA's local talent and long-standing relationships combined with Wipro's global expertise will help expand the geographical footprint in Brazil. The acquisition will also help Wipro set up delivery centres in the North East of Brazil leveraging IVIA's workforce.

Wipro has a significant presence in Latin America with offices across five countries in the region - Brazil, Mexico, Chile, Colombia and Costa Rica. In Brazil, Wipro has a vision to grow the operations by bringing the best of its global experience to the local market and becoming a partner of choice as an end-to-end IT services provider. This acquisition is another significant step towards Wipro's commitment to this region.

"We welcome employees of IVIA to the Wipro family. They bring with them unique strengths and experience that will be of immense benefit to Wipro. We continue to make strategic investments in this region and this acquisition will help Wipro address the needs of clients across multiple verticals. Wipro's digital capabilities combined with IVIA's strengths will maximize benefits for clients," said Mukund Seetharaman, Vice President and Head of LATAM, Wipro Limited.

Welcoming the acquisition, Alexandre Menezes, Founder and Chief Marketing Officer, IVIA Serviços de Informática Ltda said, "We are excited about what Wipro and IVIA can deliver jointly to clients, transform communities and leverage information technology to empower people. Wipro's fast-growing presence in the region, digital transformation capabilities, its global customer portfolio and delivery model will help our talent and customers immensely."

With continuous investment in quality and process, IVIA is one of the few Brazilian companies that has an ISO 9001, MPS.BR and CMMI rating, and has been elected, for the tenth consecutive year, as one of the best companies to work for in Brazil, according to the Great Place to Work ®.

The acquisition is subject to customary closing conditions and is likely to be completed in the quarter ending September 30.

Click here to return to Contents

Company News

Ansys Recognized as 2020 Bay Area Best Place to Work

13 July 2020

Ansys has been recognized as a winner of the 2020 Bay Area Best Places to Work for creating an exceptional employee workplace. The awards program was presented by the San Francisco Business Times and Silicon Valley Business Journal.

Award applicants were evaluated and ranked across five categories according to the number of Bay Area employees. The ranking found companies in the region whose employees rated them as the highest on

such values as collaboration, solid compensation, benefits offerings, management practices, other amenities and fun.

"Being honored as a Bay Area Best Place to Work is a testament to our team's increasingly diverse and inclusive culture, which incorporates valuable perspectives and backgrounds to solve complex challenges for our customers," said Julie Murphy, vice president, human resources, Ansys. "Our best and brightest innovators bring their whole selves to work, where each employee feels respected and all ideas are appreciated as we work together as ONE Ansys to capture market opportunities. We look forward to furthering our employees' development in the Bay Area and throughout our global offices."

Click here to return to Contents

Bentley Systems Announces Launch of The Cohesive Companies, Advancing Infrastructure Digital Twins

14 July 2020

Bentley Systems, Incorporated announced that its Acceleration Fund has launched The Cohesive Companies, a wholly owned subsidiary, anchored by the acquisition of Atlanta-based Cohesive Solutions. The new business venture will include the services team from Bentley's AssetWise business and the offerings of Bentley, Cohesive, and IBM's Maximo to support the digital transformation of infrastructure owner-operators. The Cohesive Companies will act as a digital integrator to help infrastructure asset owners upgrade their enterprise environments to leverage digital twins—digital representations and simulations of a physical asset, synchronizing digital context (current existing conditions), digital components (engineering content), and digital chronology (lifecycle change management). Infrastructure digital twins can empower asset operators with immersive visualization and analytics visibility to predict and optimize performance.

Cohesive Solutions is the largest North American reseller of IBM's Maximo enterprise asset management (EAM) software. With a successful track record of delivering integrated EAM solutions for owner-operators in utilities, energy, and facilities sectors, Cohesive Solutions' domain expertise and consulting capabilities can now be extended to advance EAM to infrastructure digital twins.

As digital integrators for infrastructure asset performance, The Cohesive Companies' unique charter is the convergence, through digital twin cloud services, of digital engineering models (ET), with IT and OT, for infrastructure and facilities assets. Asset performance digital twins can provide continuous operational insights, enhanced through machine learning, for reliability, efficiency, compliance, safety, resilience and decision support to adaptively sustain and advance fitness for purpose.

Noah Eckhouse, SVP Bentley Systems, and CEO, The Cohesive Companies, said, "Infrastructure asset owners know their success in going digital is based on both technology as well as experienced and dedicated resources for change management. I'm excited to fully meet the opportunity for asset performance digital twins with Bentley Acceleration Fund's substantial commitment to this digital integrator venture. Building on Cohesive Solutions' 25-year history while launching Cohesive Asset Performance with a large team of seasoned Bentley AssetWise consultants, The Cohesive Companies have hit the ground running, ready to drive change and deliver positive outcomes!"

George Lowry, President, Cohesive Solutions, said, "The Bentley Acceleration Fund's digital integrator initiative for advancing infrastructure—by combining world-class software with best practices consulting, in going digital for asset performance—completes the reach of our mission, from the start, at Cohesive Solutions. Our founders are delighted to now extend our scope, as a long-standing IBM Business Partner, to include advancing Maximo with Bentley's digital twin cloud services."

Pierre de Wet, GM and VP, Cohesive Asset Performance, said, "The formation of The Cohesive Companies, as digital integrators, created an opportunity to bring my global team of AssetWise services professionals into the mix, with a specific focus on asset information, performance, reliability, and analytics. I'm excited to join Noah and George to broaden our digital integrator capabilities and to offer a deeper range of services for AssetWise."

Terrence O'Hanlon, Founder and Chairman, Reliabilityweb.com and producer of MaximoWorld, said, "Cohesive Solutions builds upon a long history of success and expertise around IBM Maximo Enterprise Asset Management implementations, with a track record of improving asset performance. The combined solutions that will now be uniquely offered by The Cohesive Companies—adding AssetWise and digital twin cloud services to Maximo EAM expertise—hit it out of the park for owner-operators to realize critical organizational objectives!"

[⬆] *Click here to return to Contents*

Centric Software Expands Rapidly In South-East Asia

13 July 2020

Centric Software is experiencing strong growth in South-East Asia, bringing market-leading Product Lifecycle Management (PLM) solutions to brands, retailers and manufacturers in the region. Centric Software provides the most innovative enterprise solutions to fashion, retail, footwear, outdoor, luxury, consumer goods and home décor companies to achieve strategic and operational digital transformation goals.

PLM is a must-have backbone technology that handles product-related activities from concept to retail for brands, retailers, original design manufacturers (ODMs) and original equipment manufacturers (OEMs). Centric Software's PLM solutions are trusted by 370+ companies representing 1,300+ brands worldwide to support strategic digital transformation initiatives to collapse time to market, boost innovation, reduce costs and improve product margins.

Centric Software entered the APAC market in 2014 and the company quickly became the PLM market leader in the Greater China region. While the bulk of Centric's 70 APAC region customers are in China, Centric has recently made strides in South-East Asia with major apparel manufacturers such as Brandix, Hirdaramani and MAS Holdings in Sri Lanka and VT Garment in Thailand. In 2020, Centric opened offices in Vietnam and Bangladesh, adding to existing offices in Singapore, South Korea, China, Japan and Hong Kong.

"There is a lot of interest in Centric in the South-East Asia region, particularly from apparel manufacturers who know that a modern PLM solution is essential to remain competitive and collaborate with global customers," says Jason Lee Sales Director Asia Pacific at Centric Software. "Our easy-to-use, cloud-based PLM software, 3D sampling capabilities, 'single source of the truth' approach to product data, vendor collaboration portal and market-leading PLM mobile apps facilitate more agile and profitable operations with improved accuracy and reduced time to market."

"We're delighted to be experiencing strong growth in South-East Asia," says Chris Groves, President and CEO of Centric Software. "Our APAC team is working hard to understand the needs of this emerging PLM market, and we look forward to welcoming new partners in the region."

[⬆] *Click here to return to Contents*

DORIS Group, AVEVA and Schneider Electric Join Forces to Create Digital Twin Alliance

17 July 2020

DORIS Group, global Engineering and Project Management company in the energy industry, Schneider Electric, the leader in digital transformation of energy management and automation, and AVEVA a global leader in engineering and industrial software, have agreed to develop a strategic partnership to deliver Digital Twin technology for the upstream oil and gas markets. These new solutions will support the goals of oil & gas organizations to improve asset performance, increase sustainability and maximize return on capital on projects.

The three companies will combine offerings to bring engineering capabilities, an asset lifecycle software solution and digital specialization in order to create a fully formed digital twin to serve as a backbone for improving performance for the upstream sector. The new solution will:

Bring new assets on stream faster through the use of cloud-enabled software that improves collaboration and increases engineering efficiencies

Deliver enhanced safety leading to better business outcomes

Improve traceability through a single point of accountability

Enable remote operations and production assurance through a fully functional Living Digital Twin that mirrors all aspects of the operating asset

Partnering to Create a Unique New Offering that Addresses Customer Challenges

Oil & Gas owner operators have struggled to go digital due to the lack of a structured offering and orchestration as no single vendor currently delivers what is required to achieve this. Large amounts of data of various types, from different sources is another challenge they face, often leading to data inaccuracy and incompatibility, as well as difficulties in organizing that data and identifying trends.

Similarly, the oil & gas sector is under considerable pressure to quantify, track and reduce CO_2 emissions as well as reduce overall pollution – this can be even more difficult with limited monitoring, no established method and no data-driven decision making.

Together, DORIS, AVEVA and Schneider Electric will offer a structured digital and collaborative solution across the lifecycle of projects that will help oil & gas owner operators address many of these challenges.

Christophe Debouvry, CEO of DORIS Group, stated, "DORIS Group is excited to be strategically partnering with Schneider Electric and AVEVA in this unique venture which will allow us to accelerate the building out of our digital transformation strategy. Combining our complementary expertise will go a long way to providing a powerful enabler to offer our customers embarking on their digital transformational journeys with optimized solutions throughout their assets lifecycle."

Craig Hayman, CEO AVEVA, also commented, "Leaders driving the next wave of transformation are moving quickly and that's why this partnership with Schneider Electric and DORIS Group is so opportune. Our common aim is to support organizations on their digital journey especially in the current environment, helping them accelerate the use of digital technology, realize the value of a digital twin and also work towards a more sustainable future. It's never been easier to begin a digital transformation program, as access to cloud computing, great connectivity, a merged edge and enterprise combined with

analytics and machine learning, means that the ability to digitally drive productivity improvements into the industrial world is now unprecedented."

Christopher Dartnell, President Oil & Gas and Petrochemicals at Schneider Electric, commented, "This partnership is in line with Schneider Electric's objectives around Digitization and Energy Transition and we will bring our expertise in both energy and process efficiency to the industry. Our goal is to support customers looking to adopt a digital twin model, by offering our experience to facilitate the overall digital transformation for our clients enable them to improve lifecycle performance and safe operations while also making their operations more sustainable."

Click here to return to Contents

ESD Alliance Reports Electronic Design Automation Industry Revenue Growth for Q1 2020

13 July 2020

The Electronic System Design (ESD) Alliance Market Statistics Service (MSS) today announced that the Electronic Design Automation (EDA) industry revenue increased 3.5 percent in Q1 2020 to $2,698 million, compared to $2,606.4 million in Q1 2019. The four-quarter moving average, which compares the most recent four quarters to the prior four quarters, increased by 5.2 percent. ESD Alliance is a SEMI Technology Community.

"The EDA industry reported increased revenue in Q1 compared to Q1 2019, in part due to strong growth in the largest product category, Semiconductor Intellectual Property (SIP)," said Walden C. Rhines, CEO Emeritus of Mentor, a Siemens Business. "The Printed Circuit Board and Multi-Chip Module (PCB and MCM) category also reported double-digit gains in Q1. The four-quarter moving average continued to increase for the PCB and MCM, Computer Aided Engineering (CAE), IC Physical Design and Verification, and SIP categories, and in the Americas, EMEA, and Asia Pacific (APAC)."

The companies tracked in the MSS report employed 45,938 in Q1 2020, a 5.6 percent increase over the Q1 2019 headcount of 43,500 and up 1.1 percent compared to Q4 2019.

The quarterly MSS report containing detailed revenue information with category and geographic breakdowns is available to ESD Alliance members.

Revenue by Product Category

CAE generated revenue of $854.9 million in Q1 2020, a 1.7 percent increase compared to Q1 2019. The four-quarter CAE moving average increased 2.4 percent.

IC Physical Design and Verification revenue reached $507.9 million in Q1 2020, an 8.9 percent decrease compared to Q1 2019. The four-quarter moving average for the category increased 2.4 percent.

PCB and MCM revenue of $250.9 million for Q1 2020 represents an increase of 12 percent compared to Q1 2019. The four-quarter moving average for PCB and MCM increased 14.1 percent.

SIP revenue totaled $985.6 million in Q1 2020, a 12.5 percent increase compared to Q1 2019. The four-quarter SIP moving average increased 9.6 percent.

Services revenue totaled $98.7 million in Q1 2020, an 8.6 percent decrease compared to Q1 2019. The four-quarter Services moving average decreased 12.1 percent.

Revenue by Region

The Americas, the largest reporting region by revenue, purchased $1,118.1 million of EDA products and services in Q1 2020, a 0.5 percent increase compared to Q1 2019. The four-quarter moving average for

the Americas increased 0.5 percent.

Revenue in Europe, the Middle East, and Africa (EMEA) increased 13.4 percent, to $392.3 million, in Q1 2020 compared to Q1 2019. The EMEA four-quarter moving average increased 11.1 percent.

First-quarter 2020 revenue for Japan increased 9.8 percent to $268.6 million compared to Q1 2019. The four-quarter moving average for Japan decreased 3.9 percent.

APAC revenue increased to $918.9 million in Q1 2020, an increase of 1.8 percent compared to the first quarter of 2019. The four-quarter moving average increased 6.9 percent.

Click here to return to Contents

ESI Group Helps Managing the Risk of COVID- 19 Contamination in the Workplace

16 July 2020

ESI Group relies on its historical background in simulation and the talent of its engineers to help managing and preventing the risk of cross-contamination and the spread of infection in the offices in the current post-COVID-19 context.

ESI Group's experts, throughout the United States, Asia and Europe, have collaborated with various organizations, including the Pacific Northwest National Laboratory (PNNL), to investigate different scenarios to demonstrate the effect of occupant proximity, ventilation systems and contamination avoidance unique to each office and plant environment.

The customized simulations that were carried out provided answers to the following questions:

How can open spaces and offices be rearranged to be in line with the rules of social distancing?

How to adapt air-conditioning ventilation and fan speed to create air curtains and protect against aerosol penetration?

How does the opening and closing of doors affect ventilation and air movement?

Establish rules for travel and employees' gatherings based on fresh air circulation.

Locate, avoid and clean "dead spots" where aerosol particles could linger.

"The Coronavirus crisis, that we have all been experiencing for several months, is distressing a lot of habits and has resulted in new issues to be addressed by companies. Employee safety has always been key, but when the danger is invisible yet circulating in the air, the topic appears to be more complicated and crystallized. Just like other industrial and technological players, we seek to provide as many people as possible with solutions to help rebuild, secure and reassure. Simulation is an ideal tool that enables testing a very large range of scenarios without endangering anyone. Our expertise in material physics, Multiphysics and more precisely in fluid mechanics has allowed us to create realistic scenarios of droplet behavior in more or less enclosed and ventilated spaces. We are pleased to provide our input and to continue being faithful to our values: being as close as possible to our customers to help them achieve their goals, including the most challenging ones.", commented Anshul Gupta, COO at ESI India Business Operations on behalf of his team leading this project.

Click here to return to Contents

MathWorks partners with NVIDIA's Deep Learning Institute to offer new Deep Learning with MATLAB course

17 July 2020

MathWorks announced that a comprehensive "Deep Learning with MATLAB" course is now available, developed in collaboration with NVIDIA's Deep Learning Institute. The two-day course is being offered in both instructor-led online and self-paced on-demand formats throughout the rest of 2020. On completion, engineers, scientists, and researchers will be ready to apply GPU-accelerated deep learning techniques in MATLAB to common applications such as image classification, autonomous systems, voice recognition, and object detection. For dates and locations, visit the Deep Learning with MATLAB course schedule.

MathWorks provides a comprehensive platform for building AI-driven systems that is based on decades of supporting complex engineering projects. GPU Coder generates optimized CUDA code from MATLAB code for deep learning, embedded vision, and autonomous systems, which allows developers to build solutions that run efficiently on NVIDIA GPUs. In addition, a MATLAB container from NVIDIA GPU Cloud (NGC), a hub for GPU-optimized AI and HPC software, provides a complete deep learning workflow that uses NVIDIA GPUs to accelerate neural network training to scale up performance across nodes.

"The NVIDIA Deep Learning Institute plays a crucial role in developing hands-on training and showcasing how to use new techniques like deep learning to solve complex problems," said David Rich, director, MATLAB marketing, MathWorks. "This course offers a practical approach to deep learning that will help NVIDIA users to iterate quickly and converge on a solution that meets product and time-to-market requirements."

"There's been a surge of interest in the Deep Learning with MATLAB course using NVIDIA GPUs," said Will Ramey, senior director and global head of developer programs at NVIDIA. "Learning how to quickly and easily apply the power of NVIDIA GPUs to accelerate neural network training streamlines the process of application development and allows for more rapid deployment and faster time to market."

Click here to return to Contents

PTC Named Global Manufacturing Partner of the Year in the 2020 Microsoft Partner of the Year Awards

15 July 2020

PTC announced it has been named the Global Manufacturing Partner of the Year, for the second year in a row, in the Microsoft 2020 Partner of the Year Awards. Honored among a global field of top Microsoft partners, PTC has demonstrated excellence in innovation and implementation of customer solutions based on Microsoft technology.

"We are pleased to announce that PTC has been recognized by Microsoft as the Global Manufacturing Partner of the Year for the second consecutive year," said Jim Heppelmann, President and CEO, PTC. "Together, PTC and Microsoft have enabled digital transformation for some of the world's largest organizations. We look forward to continuing that success with the newly-launched turnkey cloud solution, Factory Insights as a Service, which is powered by technology from PTC, Rockwell Automation, and Microsoft. The solution breaks through traditional transformation approaches and can be scaled rapidly across the organization, enabling businesses to accelerate initial time to value."

The Microsoft Partner of the Year Awards recognize Microsoft partners that have developed and delivered exceptional Microsoft-based solutions during the past year. Awards were given in several categories, with honorees chosen from more than 3,300 nominees in more than 100 countries worldwide. PTC has been recognized for providing outstanding solutions and services in the

Manufacturing sector for:

Digital Manufacturing to help improve factory productivity, reduce operational costs, and drive revenue growth.

Service Optimization to empower service teams to increase efficiency, reduce field service costs, and grow service revenue.

Engineering Excellence to enable data driven decisions throughout the design and manufacturing process to implement changes faster, speed new product introductions, and reduce the time it takes to create new design variants with quality built into every product and process.

These solutions are enabled by PTC's industry leading technologies, including the ThingWorx® for Azure platform; the Windchill® for Azure platform; and Vuforia® Expert Capture™ and Vuforia Studio™ for Microsoft HoloLens 2.

"It is an honor to recognize the winners and finalists of the 2020 Microsoft Partner of the Year Awards," said Gavriella Schuster, Corporate Vice President, One Commercial Partner, Microsoft. "These partners go above and beyond, delivering timely solutions that solve the complex challenges that businesses around the world face – from communicating and collaborating virtually to helping customers realize their full potential with Azure cloud services, and beyond. I am proud to honor and congratulate each winner and finalist."

Click here to return to Contents

Second Investment in Factory_OS Fuels Innovation – Autodesk Blog

16 July 2020

I admire when companies seek to disrupt their industries from within, especially when their efforts reinforce that business can be a force for good. With its focus on prefabrication, Factory_OS is a modular construction start-up at the forefront of innovation and social good, which is why I'm thrilled to share Autodesk is building on its first investment in the company, and today announcing a second investment in Factory_OS.

Autodesk and Factory_OS have been working together for a few years to use technology to innovate and improve the overall outcomes of construction. Now with design & engineering under the same roof, Factory_OS will experience more effective collaboration and issue resolution. For example:

Digital technologies such as laser plotting improve efficiency and quality.

Automated cutting machines enable workers to be more productive.

A dedicated innovation space to experiment with different techniques and approaches; those that are successful will be implemented on the full manufacturing line.

Most importantly, Factory_OS is helping us improve our products to support these workflows for ALL customers, so the benefits will be spread throughout the industry and will advance prefabrication and digitization practices. This work also allows us to learn how to reskill workers as the industry continues to evolve through technological innovation and machining. Both companies share a common desire to help make housing more affordable and better for workers. For our part, this means supporting efforts to bring high quality, lower cost homes to market more quickly while enhancing workers' skillsets.

I had a chance to sit down with Rick Holliday, the co-founder and CEO of Factory_OS, to hear what he had to say about the investment and what it will enable Factory_OS to accomplish:

"The biggest impediment to wider adoption of industrialized construction has been the inability for the A&E process to marry the construction process. Working with Autodesk creates the opportunity for a huge breakthrough through better integration, as things can be done quicker, and with better employee training, from design through the manufacturing process. Together, we're cracking the code on modular housing, and this second investment will help us get there faster and more efficiently."

As an "essential business," Factory_OS develops best practices for prefabrication

Headquartered on Mare Island in Vallejo, California, Factory_OS is a proven resource for tackling the affordable housing crisis. Their model applies a manufacturing-influenced approach to homebuilding, creating a safer and more efficient construction process with less risk to people and projects. Learning from the manufacturing industry, production of housing on assembly lines lowers prices by an estimated 20 percent, building them 40 percent faster and with 70 percent less material waste. All told, this is the formula for families who need – and deserve – more affordable homes in an unforgivingly expensive real estate market.

Last Fall, Factory_OS assembled an affordable housing complex in West Oakland in just 10 days – a process that would have taken about a year to complete on-site using traditional design and construction methods. Additionally, supportive housing for formerly homeless people in San Francisco is being built at the factory right now. This marks the first time the city has used modular construction for this type of project, cutting millions from the project's cost and at least a year off the timeline. Factory_OS currently has 10 projects for formerly homeless people in its pipeline, including six for Los Angeles.

Click here to return to Contents

Siemens and SAP Join Forces to Accelerate Industrial Transformation

14 July 2020

Together, industry leaders Siemens and SAP will deliver integrated end-to-end software solutions across product lifecycle, supply chain and asset management.

Partnership leverages expertise and technology of both companies to provide a true digital thread that helps enterprises eliminate process and information siloes, drives digitalization and delivers a comprehensive solution for the 4th industrial revolution (Industry 4.0).

SAP will offer Siemens' Teamcenter software as the core foundation for product lifecycle collaboration and product data management. Siemens will offer SAP Intelligent Asset Management solutions and SAP Portfolio and Project Management applications to maximize business value for customers over the entire product and service lifecycle and enable new collaborative processes between manufacturers and operators.

Siemens and SAP SE announced a new partnership that will leverage their industry expertise and bring together their complementary software solutions for product lifecycle, supply chain and asset management so their customers can deliver new innovation and collaborative business models that will accelerate industry transformation globally.

Through this agreement, both SAP and Siemens will be able to complement and integrate their respective offerings in order to offer customers the first truly integrated and enhanced solutions for product lifecycle management (PLM), supply chain, service and asset management. This will enable customers to form a true digital thread integrating all virtual models and simulations of a product or asset with real-time business information, feedback and performance data over the entire lifecycle.

"Digital transformation will be critical for the manufacturing industries to increase productivity, flexibility and accelerate innovation, so companies must come together in new ways to enable the digital enterprise," said Klaus Helmrich, Member of the Managing Board of Siemens AG and CEO of Siemens Digital Industries. "This exciting collaboration between two industry leaders is about more than just interoperability and interfaces; it is about creating a truly integrated digital thread that unites product and asset lifecycle management with the business that enables customers to optimize production of products."

Silos between engineering and business have existed in enterprises for decades. This new partnership will help customers to break down these siloes so manufacturers, product design teams and service managers have the information needed to quickly create and manage customer-centric product and service offerings.

"As manufacturers design and deliver smarter products and assets, access to real-time business information across networks is critical to bring new and improved innovations to market faster," said Thomas Saueressig, member of the Executive Board of SAP SE and responsible for SAP Product Engineering. "Bringing together expertise from SAP and Siemens to offer Industry 4.0-enabled business processes allows enterprises to create a digital thread for the entire product and asset lifecycle. With this end-to-end solution, teams across the business network can efficiently work together to design and deliver innovative products productively, profitably and sustainably."

Going forward, both SAP and Siemens will be able to offer new solutions that combine their technologies in order to help companies shorten time to market by leveraging Industry 4.0-enabled data using intelligent assets and products. This will also give organizations the benefit of incorporating customer insights into product development through a comprehensive solution, from product design to service and asset management. As a first step in the partnership, SAP will offer Siemens' Teamcenter software as the core foundation for product lifecycle collaboration and data management and Siemens will offer SAP Intelligent Asset Management and SAP Portfolio and Project Management software to maximize the business value for manufacturers and operators across networks. Both companies will collaborate to develop applications from an end-to-end lifecycle perspective to help customers achieve a seamless digital thread that improves overall business performance.

"Combining Siemens' Teamcenter and SAP S/4HANA software provides companies an end-to-end process capability from product design to decommission," said Bob Parker, Senior VP of Industry Research at IDC. "The IT benefits of pre-integration of PLM, ERP, asset management and supply chain applications and the business benefits from having a more resilient response to changing market demand make this a compelling consideration for companies seeking a competitive advantage in the digital economy."

Click here to return to Contents

Since COVID-19 Pandemic, 30 Brands and Retailers Embrace Centric PLM to Drive Digital Transformation

16 July 2020

Since the COVID-19 outbreak, Centric Software®'s market-leading Product Lifecycle Management (PLM) solutions have been selected by 30 brands, retailers and manufacturers to boost efficiency, reduce costs and drive remote collaboration. Centric Software provides the most innovative enterprise solutions to fashion, retail, footwear, outdoor, luxury, consumer goods and home décor companies to achieve strategic and operational digital transformation goals.

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.

"Our customers realize that it is more important than ever to invest in digital solutions to streamline remote collaboration, cut costs and maximize efficiency," explains Fabrice Canonge, Executive Vice-President Global Sales & Marketing at Centric Software. "For some companies, remote working has exposed weaknesses and forced people to rethink how they work. Remote collaboration, and working in person, are both far more efficient with the right tools in place. Businesses are now prioritizing the projects that will deliver lasting benefits and improve their chances of survival."

"We recently launched new Quick Start Collaboration packages to enable companies to swiftly implement core PLM functions and transition to remote working. Centric has proven its ability to produce a concrete return on investment with the fastest time to value and lowest total cost of ownership, and the market is responding to that."

Many innovative companies agree. A handful are cited:

From France, apparel manufacturer for retailers like E.Leclerc, Carrefour and Galeries Lafayette, Gil Claude, CEO, Eric Ammar says, "Demanding consumers necessitate a faster product development and production process that includes traceability. Trends that were developing prior to the pandemic are now becoming a must have, not a nice to have. With Centric, we'll see significant operational improvements and be able to collaborate better with our factories and our clients."

From the US, apparel and footwear manufacturer Otabo, Chris Finlay, Chief Growth Officer explains, "Since our clients and supply chain are international, we've always been digital first and we've always focused on how to improve communication 24/7. PLM was an organizational need for us."

From China, home textile maker for companies like Nordstorm, Pottery Barn, John Lewis and more, Sunwin, Chairman, Wang Yaomin, says, "Companies with long-term strategic plans will not cease to move forward because of short-term difficulties. Competitiveness must come from the product itself, and Centric PLM can help us to strengthen the power of our products."

From Spain, fashion manufacturer T2T for brands like Zara, Mango, Desigual and others, CEO, Jordi Blasco explains, "Centric will support our fashion design team with a centralized, digital platform, enabling streamlined remote collaboration with our suppliers and relieving market disruptions like those brought on by the recent pandemic."

"We are proud to forge new partnerships amid global uncertainty," says Chris Groves, President and CEO of Centric Software. "As the world adjusts to a new reality, businesses are placing their trust in Centric PLM to make them more strategic, reactive and profitable."

Click here to return to Contents

Software AG And ifm group Partner To Deliver Cloud Connectivity For IOT Devices
17 July 2020

Software AG and the ifm group have announced a partnership that will focus on cloud-based visualization and analysis of sensor data from industrial systems and machinery.

The ifm edge portfolio consists of hardware as well as software sensor data that will offer connectivity to the Cumulocity IoT Cloud for basically any machine, system or device. The solution will also prepare data for further use. As part of the collaboration, both partners will also supply joint customers with direct plug-and-play solution packages including cloud-based services (SaaS) for the Internet of Things.

Software AG CTO, Bernd Gross, commented, "One of digitalization's core promises is to enrich machines, plants and things with data and digital services to increase their efficiency and cost-effectiveness and help us glean data for new business models. The tight interplay of sensors, interfaces and the Cumulocity IoT Cloud will enable us to integrate previously isolated OT systems with the analytic capabilities of cutting-edge IT in the cloud. This will facilitate automation at all manufacturing companies and, in turn, boost effectiveness across entire plants.

IoT Connector and Gateway by ifm

In combination with Cumulocity IoT, ifm's edge product portfolio is a closed-loop, end-to-end system which enables cloud connectivity for any number of machines and systems. It is, by the same token, open on both ends, meaning that the use of other cloud solutions and additional connectors and gateways is possible. With this package, companies will gain complete freedom in their choice of solutions. For a list of all Software AG hardware partners and providers of embedded systems for IoT devices, please refer to Software AG's Device Partner Portal.

Nadine Rahman, CEO of ifm solutions GmbH, the group's digitalization division, remarked, "When it comes to digitalization projects in the industrial context, the three core focal points are always extending operational life, maximizing convenience, and increasing efficiency. To address these topics, one of ifm's guiding principles for digitalization activities is simplification. Time and time again, the market (and various studies) has shown us that a key reason for the failure of the proliferation of digitalization is the overly complex approach of projects. With our digital projects, we want to focus on delivering solutions for our customers' highly specific issues in the industrial value creation process with respect to production and mobile machinery. So, the software is a means to an end but also part of the solution."

Access to the "Internet of Everything" with Cumulocity IoT

Cumulocity IoT is Software AG's cloud offering and enables data processing, storage and analytics, as well as visualization of results. Cumulocity IoT's functionality is easy to modify with publicly documented APIs, an open UI framework and open-source components. Cumulocity IoT can be deployed via more than 170 global data centers in the public cloud or on-premise and in multi-layer hybrid models.

Thanks to Cumulocity IoT and its easy-to-link gateways and connectors, IoT scenarios of all levels of complexity are becoming a reality for companies of all sizes in all sectors. With Cumulocity IoT, specialized coding or programming skills are taking a backseat and are only necessary in individual or exceptional cases. IoT devices can be connected to the Cumulocity Cloud with the simple click of a mouse, which paves the way to data from the "Internet of Everything" for use in analytics applications and dashboards. It is now possible to connect more than 150 devices using certified hardware kits and software libraries.

Click here to return to Contents

Tech Soft 3D and Proplanner Work Together to Solve Decades-Old Data Management Challenge for Manufacturing Customers

17 July 2020

Tech Soft 3D announces that HOOPS Platform is being used to integrate 3D models into Proplanner's Assembly Planner product to complete the triangle of data relationships that are critical to get right for complex engineering workflows.

"Linking the process model to the 3D model was the goal," said David Sly, president of Proplanner. "We get a 3D model from one source, we get an eBOM from another source, which is the basis of our mBOM and we generate a BOP routing which consumes parts from that mBOM while visually manipulating the 3D model. Those three elements of the triangle (mBOM, BOP routing, and 3D model) have to relate – and getting them to relate is really, really difficult when all three may be authored concurrently and independently for many variants, which is why most attempts in the past haven't been successful."

Proplanner is the leader in PLM-MDM (Manufacturing Data Management for the Product Lifecycle) solutions. Manufacturers around the world in the automotive, recreational vehicle, aerospace, agriculture and construction, military, white goods, highway vehicles, electrical equipment, medical device, and academic industries rely on Proplanner solutions.

Proplanner's Assembly Planner product is designed for companies producing complex assemblies that are often highly configured into customer orders. Assembly Planner encompasses a robust database where users can author and manage their manufacturing bill of materials (mBOM) and Bill of Process (BOP) routings in a collaborative secure location. Using that data, Assembly Planner helps customers perform time studies, balance their assembly lines, auto-generate work instructions, manage their internal logistics information, and more.

Access to Critical Data, Combined with Powerful Visualization

Proplanner found an ideal solution to its challenges by partnering with Tech Soft 3D and taking advantage of several of its software development kits, including HOOPS Exchange, HOOPS Visualize, and HOOPS Communicator.

HOOPS Exchange is the fastest and most accurate CAD data translation toolkit, delivering access to over 30 CAD file formats through a single interface. On the visualization front, HOOPS Visualize is the gold standard graphics engine for developing high performance applications, and HOOPS Communicator is the simple, powerful toolkit for advanced 3D web visualization.

HOOPS Exchange converts the source CAD file into PRC or HSF format, and it extracts detailed metadata. That creates a very easy workflow for bringing in CAD. As a result, customers don't need a complex integration with the PDM or PLM systems in order to bring in their CAD models and get started on process planning. For the visualization component, Proplanner used HOOPS Visualize for the Windows version of their product. HOOPS Communicator is used for the web version of the product – the HSF streaming format provides a fast, lightweight way of viewing models.

"3D is critical," said Sly. "3D is what allows us to visually validate the process and generate shop floor instructions, but the knowledge that HOOPS Exchange is helping us extract from the CAD model is just as crucial. It helps us map the 3D model to the process, to convert the engineering change orders (ECOs) and engineering bill of materials (eBOMs) into manufacturing bill of materials (mBOMs), and associated process routings.

"Some customers have tried to get this information to match up for decades and failed," said Sly. "The problem was that there was no way to easily reconcile the variances between a CAD model that might

have thousands of parts with the other documents and data sources. Thanks to Tech Soft 3D, we're at a point technologically now where customers can extract the data from many different CAD formats, and reconcile it against eBOMs and mBOMs and other data sources. The underlying technology from Tech Soft 3D is enabling all this information to finally come together."

Working with Tech Soft 3D, Proplanner has finally figured this problem out and is actually delivering on this vision, and this capability, that customers have seen in PowerPoint presentations and sales pitches from other vendors for 20 years, but never have been able to put into production for complex highly configured products. Now they can.

Click here to return to Contents

Xometry Launches 2D Technical Drawing Marketplace

17 July 2020

Xometry has unveiled its 2D Technical Drawing Marketplace, an innovative platform to expand access to prospective job orders for 3,000+ American machine shops.

The 2D Technical Drawing Marketplace offers engineers and designers the ability to get quotes from Xometry's network of highly-qualified U.S. shops -- including ISO 9001:2015 and AS9100D-certified and ITAR registered facilities -- for projects which lack 3D files. Xometry will guarantee the quality of the work.

"COVID-19 has disrupted international supply chains, and our domestic machine shops are feeling pressure as well," said Randy Altschuler, CEO and Co-founder of Xometry. "Giving our Partner Network -- top-rate American shops who are largely working in 2D already -- access to 2D file quotes from our strong customer base is a win-win. Manufacturers get access to new project opportunities, and US-based customers have an easy path to reshore work and restore their supply chain."

A Xometry survey found 53% of mechanical engineers worked with parts that lacked 3D CAD files, representing a potential $37 billion market. Specifically these files are often used for legacy parts and in sectors where Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues are common, such as aerospace and defense.

"Xometry is driven by the success of its Partner Network," said Jenn Ryan, Senior Vice President, Xometry Partner Network. "We recognize this is an uncertain time for American small businesses and we want our Partners to know we are working hard to bring them new customers and new jobs. We're expecting a heavy volume of new RFQs to come now that we service 2D technical drawings."

Click here to return to Contents

Events

Accenture and Microsoft Provide Digital Platform to Support Milan Digital Fashion Week

15 July 2020

Accenture and Microsoft have teamed to develop and deliver a digital platform to support Camera Nazionale Della Moda Italiana's (CNMI) first-ever Milan Digital Fashion Week, which goes live today. The platform will digitize key moments of Milan Fashion Week, helping to sustain the sales campaign ecosystem, and maintain core industry relationships in an effort to address the challenges presented by the current market environment.

Fashion brands, emerging designers and industry professionals can use the digital hub to interact with buyers, media, influencers and consumers from anywhere in the world through an engaging, multi-channel experience that includes chats, videoconferences, bots, holograms and completely virtual spaces.

Accenture Interactive designed and developed the digital experience and the Accenture Microsoft Business Group built and implemented the innovative technology platform. Microsoft deployed its cloud and artificial intelligence solutions and expertise, envisaging and supporting the development of the digital hub.

"For the first time in its history, CNMI is experimenting with a highly innovative formula through a live digital platform to tell the story of Italian fashion. We are very happy with our collaboration with two large companies such as Accenture and Microsoft for the creation of this innovative digital platform," said Carlo Capasa, Chairman of CNMI. "Today we are presenting a revolutionary project that will open Milan Fashion Week up to a broader audience of non-professionals: a demographic composed of younger generations that consume fashion via images and to whom CNMI has assumed the role as Fashion Translator with the aim of conveying the creativity and culture that emanates from the Italian fashion world."

The platform is organized in three layers: 1) a fashion content hub for live streaming of fashion shows, virtual catwalks and other industry-related events and roundtables; 2) a virtual showroom system, showcasing digital catalogues and ambience virtualization, as well as providing dedicated support to manage ordering processes; 3) and finally, a data-driven insights platform, accessible to professionals, to obtain business insights from people's interaction with brands, events and content.

"Bringing together Accenture talent and drawing on our technology and industry experience, as well as our close relationship with Microsoft, the digital platform is an innovative way to help CNMI address today's unique circumstances," said Alessandro Zanotti, managing director, Accenture Interactive. "This platform enables fashion industry stakeholders – from brands and buyers to trendsetters – to come together to experience the magic of Milan Fashion Week in a new, digital way."

The hub integrates solutions for the complete management of the customer journey, using the Microsoft Teams collaboration and communication platform and Dynamics 365 Customer Relationship Management features, including the possibility for brands to develop customized apps and virtual agents through Microsoft Power Platform.

The solution was delivered in collaboration with Avanade and relies on Accenture and Microsoft's rich partner ecosystem. Customer-centric digital experience platform provider Episerver, a leader in the Gartner Magic Quadrant for Digital Experience Platforms, was chosen for its ability to manage both content and commerce.

Luba Manolova, director, Business Group Lead Microsoft 365 & CyberSecurity Microsoft Italia, said, "Now more than ever, it is essential to look at new technologies as an opportunity to drive positive change. The fashion world represents one of the country's flagships and by making available our cloud platforms, digital expertise and ecosystem of Partners/ISVs we mean to support this strategic industry in

its recovery. Thanks to platforms like Microsoft Teams that help us to communicate and collaborate in a secure and compliant way, enhanced by cloud technologies and AI, we can design innovative digital experiences that will establish long-term benefits for the fashion industry, and help to guide us to develop new sustainable business models that will boost Made-in-Italy brands economic and social power. We are delighted to have the opportunity to lead innovation and support CNMI in its evolution journey together with Accenture, digitally empowering not only well-known fashion brands, but also emerging designers and professionals involved in such a strategic event as Milan Fashion Week, contributing to the growth and the digital transformation of the Italian fashion industry."

The platform integrates with solutions already in use by Italian fashion companies and is intended to evolve to meet emerging needs of the sector by providing new functionalities. In the long term, the entire value chain will benefit by being able to build and expand the project, digitizing increasingly sophisticated activities such as the design and selection of materials. This can help reduce the environmental impact of operations and make processes more efficient, ensuring healthier and more sustainable rhythms to the seasonal cycles of fashion.

Click here to return to Contents

The 57th Design Automation Conference Virtual Experience

14 July 2020

When the Design Automation Conference opens July 20, it will be the first ever virtual event experience for the 57-year-old conference. Attendees will embark on a two week-long virtual journey on Monday, July 20th starting at 9:00 A.M. PDT with Zhuo Li, the 57th DAC General Chair, who will open the 2020 conference. He'll be immediately followed by Dr. H.S. Philip Wong, Chief Scientist, Taiwan Semiconductor Manufacturing Company (TSMC) Ltd., who will deliver the Monday morning keynote.

The event will expand over five days July 20 – 24. All DAC sessions are scheduled for Pacific Daylight Time. Once the session day and time has occurred, the session will be available for on demand access any day and time zone until August 1, 2020

More than 60 companies will be exhibiting at virtual DAC 2020, including long-time participants such as Cadence Design Systems, Mentor, a Siemens Business and Synopsys. All exhibitors will be showcasing their latest technology advances for the electronic design industry through videos and live Zoom sessions. The live chat and face-to-face interactive exhibit meetings will be held Monday – Wednesday, July 20 – 22 from 10:30 A.M. - 1:30 P.M. PDT. Attendees may visit exhibitor virtual booths throughout the duration of the event and request private meetings or information.

Rob van Blommestein, DAC Exhibits Chair and Head of Marketing at OneSpin, said this year's DAC program is robust and offers virtually all the technical topics that the live conference would offer, such as AI/machine learning, autonomous systems, and security. Accompanying the more than 60 virtual exhibits is the return of the Design-on-Cloud theater on Monday and the addition of the RISC-V Theater on Tuesday.

"We are excited to bring the entire DAC community together virtually. No other event offers designers, researchers and decision-makers the opportunity to interact with each other while seeing and learning first-hand the latest innovations, tools and best practices. Although this year will be different, we have worked hard to keep the true essence of DAC intact even virtually, with live panels and tutorials along with afternoon networking and social hours for interacting with other attendees. We will make 2020 DAC, which is the first virtual DAC, a memorable event for the entire community," Li said.

Virtual SEMICON WEST 2020 To Highlight Opportunities For Stronger Preparedness For Global Challenges

13 July 2020

Better readiness for future global disruptions through technology innovation will come into sharp focus at the Virtual SEMICON West 2020, July 20-23, as more than 150 semiconductor industry visionaries and government leaders gather for keynotes, fireside chats and executive panels on opportunities for improving responses to worldwide challenges. Registration for the conference is open.

Former U.S. Vice President Al Gore, Applied Materials CEO Gary Dickerson and legendary IBM executive John Kelly III will kick off the conference by highlighting the vital importance of AI in a sustainable future.

SEMICON West 2020 speakers will also include:

> Bill Davidow, high-tech industry executive, venture investor and author, will speak about The Autonomous Revolution: Reclaiming the Lives We've Sold to Machines.

> Gayle Jennings O'Bryne, The WOCstar Fund (Women of Color) co-founder and general partner, and Bob Pearson, chairman of The Next Practices Group and author, will examine How Technology, Innovation and Smart Investing is a Pathway Forward in Times of Racial and Economic Injustice.

> Ivy Ross, Google hardware vice president of design, and Dr. Josh Makower, NEA Healthcare general partner and lead for its Medtech/Healthtech practice, will discuss Where the Inspiration for Google's Hardware Design Comes From.

> Abby Snay, deputy secretary for the future of work, California Labor and Workforce Development Agency, and Dave Toole, CEO, The Gig Economy Group, will discuss How Tech Talent Will Manage the New Norm.

> Gary Bolles, chair for The Future of Work, Singularity University, will lead a panel that lays out disruptive global workplace changes in The Great Work Reset.

SEMICON West 2020 Virtual SMART Pavilions

Smart Manufacturing Pavilion – Featuring livestreamed and on-demand talks with ON Semiconductor, GLOBALFOUNDRIES, Lam Research, Applied Materials and other industry leaders, presentations will focus in on integrating cognitive learning technologies into microelectronics manufacturing. Attendees will be able to explore the latest technologies, talk with speakers and network with peers and customers at the pavilion's networking lounge.

Smart Mobility Pavilion – Leading all new application spaces for chip growth, the transportation and mobility markets promise to drive growth in segments such as flexible hybrid electronics (FHE) and MEMS and sensors. The pavilion will showcase robotaxis from Pony.ai and AutoX, and their unique Al technology and hardware/software integrated stack for Level 4 autonomous driving.

Smart MedTech Pavilion – COVID-19 has put a spotlight on the value of enhanced remote connected healthcare applications. Presentations will address how MEMS and sensors are the technology of choice for integration in medical wearables and point-of-care instruments, with forecast growth of 9.2 percent year-over-year over the next five years.

Smart Workforce Pavilion – Sustaining the microelectronics industry's pace of innovation and growth through workforce development programs has become a top priority for many companies. Targeting job seekers, the pavilion will highlight entry-level opportunities, job searching during uncertain times, and why microelectronics is a smart career choice.

Click here to return to Contents

Financial News

ADDNODE Interim Report 1 January - 30 June 2020

17 July 2020

SECOND QUARTER SUMMARY, APRIL-JUNE 2020

· Net sales decreased with 2 per cent to SEK 846 m (864), of which -13 per cent was organic.
· EBITA decreased to SEK 56 m (74), for an EBITA margin of 6.6 per cent (8.6). EBITA was charged with restructuring costs of SEK 20 m (-). EBITA adjusted for restructuring costs was SEK 76 m (74), for an adjusted EBITA margin of 9.0 per cent (8.6).
· Operating profit decreased to SEK 24 m (46), for an operating margin of 2.8 per cent (5.3).
· Profit after tax decreased to SEK 14 m (33).
· Earnings per share decreased to SEK 0.42 (0.99).
· Cash flow from operating activities increased to SEK 188 m (-20).
· Kristina Willgård elected as a new board member at the Annual General Meeting on 7 May 2020.
· Acquisition of Excitech completed in June 2020.

Click here to return to Contents

Hexagon Publishes its Preliminary Results for the Second Quarter 2020

14 July 2020

Due to higher earnings than market expectations for the second quarter of 2020, Hexagon is today publishing its preliminary results. Adjusted operating profit (EBIT1) for the second quarter 2020 amounted to 226 MEUR (239) corresponding to an EBIT1 margin of 25.3 per cent (24.5). Net sales amounted to 897 MEUR (976) and organic sales declined by -10 per cent compared to the same period last year. Regarding the reporting segments within Hexagon, Industrial Enterprise Solutions recorded -10 per cent organic growth and Geospatial Enterprise Solutions recorded -9 per cent organic growth. Continued growth in software and services combined with a recovery in China and temporary short-term cost saving measures contributed to the resilience of the earnings development despite the disruptions caused by the COVID-19 pandemic.

As previously communicated, Hexagon is implementing long-term cost saving actions and has taken a one-off charge of -135 MEUR in the second quarter which is expected to result in annualised cost savings of approximately 125-150 MEUR by the end of 2020. The implementation of these long-term measures is expected to offset any reversal of the short-term saving effects seen during the second quarter.

All figures presented in this press release are preliminary. Hexagon will not make any further comments until the report for the second quarter of 2020 has been published on 24 July 2020, at around 8:00 CET. Hexagon will host a webcast and conference call the same day at 10:00 CET.

Click here to return to Contents

Infosys Results for the First Quarter ended June 30, 2020

16 July 2020

India's second-largest information technology company Infosys has reported a 11.4% rise in year-on-year profit for the April-June quarter amid the disruption caused by the Covid-19 pandemic. The Bangalore-based company has recorded a consolidated profit of 42.33 billion rupees (US$563 million), as against 37.98 billion rupees in the year-ago quarter. However, sequentially it has fallen 1.45%.

Its revenue for the quarter under review stood at 236.65 billion rupees ($3.14 billion), up 8.5% from last year. It was mainly driven by digital revenues, which stood at $1.3 billion and contributed 44.5% to total revenue in this quarter. The company also signed deals worth $1.74 billion during the quarter.

Infosys CEO Salil Parekh said, "Our Q1 results, especially growth, are a clear testimony to the relevance of our service offerings and deep understanding of clients' business priorities, which is resonating with them in these times. It also demonstrates the remarkable dedication of our employees and leadership during this period." He said the company's confidence and visibility for the rest of the year is improving "driven by our Q1 performance and large deal wins."

Chief Financial Officer Nilanjan Roy said, "Operating margin expanded to 22.7% driven by preemptive deployment of our strategic cost levers along with the tactical opportunities triggered by the Covid situation. Collections were robust and capex was focused, which led to a 50% year on year increase in free cash flows. Our liquid and debt free balance sheet is a huge source of strength in these times." The company said its voluntary attrition for IT services declined to 11.7% from 20.2% in the previous quarter.

Click here to return to Contents

WIPRO Results for the Quarter ended June 30, 2020

14 July 2020

Wipro Limited announced financial results under International Financial Reporting Standards (IFRS) for the quarter ended June 30, 2020.

Highlights of the Results for the Quarter ended June 30, 2020:

Gross Revenue was ₹149.1 billion ($2.0 billion), an increase of 1.3% YoY

IT Services Segment Revenue was at $1,921.6 million, a decrease of 5.7% YoY

Non-GAAP2 constant currency IT Services Segment Revenue decreased by 4.4% YoY

IT Services Operating Margin3 for the quarter was at 19.0%, an expansion of 0.6%YoY

Net Income for the quarter was ₹23.9 billion ($316.5 million), an increase of 0.1% YoY

Earnings Per Share for the quarter was at ₹4.20 ($0.06), an increase of 5.7% YoY

Operating Cash Flows was at ₹41.8 billion ($553.6 million), which is 174.9% of Net Income Performance for the quarter ended June 30, 2020

Thierry Delaporte, CEO and Managing Director said, "I am deeply honored to lead Wipro, an extraordinary company and an exemplary corporate citizen with a deep technology heritage built on a strong foundation of values. I have great respect for the work done by the Azim Premji Foundation, its 67% economic ownership of Wipro adds greater meaning to what we do. Profitable growth will be the most important priority on my agenda. I am confident that we will be able to deliver longterm, sustainable growth in the interest of all our stakeholders."

Jatin Dalal, Chief Financial Officer said, "We expanded the margins during the quarter, despite lower revenues, on the back of solid execution of several operational improvements and rupee depreciation. We also continued to sustain robust cash generation with Operating Cash Flows at 174.9% of Net income."

Click here to return to Contents

Implementation Investments

Agility Logistics Brings More Efficiency and Sustainability to Processes and Customer Service with OpenText Content Services

15 July 2020

OpenText™ announced Agility Logistics, one of the world's largest integrated logistics providers, has deployed OpenText™ Content Services to streamline global operations, including freight and shipping via land, air and sea for more than 60,000 customers in 100 countries.

Agility Logistics works with companies to move, manage and distribute the goods that underpin global commerce. Every shipment produces a physical paper trail of documents – such as airway bills, invoices and bills of lading – which previously took days to reach their destination for cargo processing. To secure end-to-end information resiliency and efficiency, the company implemented OpenText Information Management technologies to provide an integrated, centralized repository for capturing, sharing and managing documents.

"Visibility into supply has been critical to helping us navigate the disruption brought by the Covid-19 pandemic. We have made investments in our technology that have helped us manage," said Deepak Sharma, Global IT Director for Business Solutions and Support at Agility Logistics. "OpenText has helped us optimize customer service by providing a single access point for customers to view their documents, track shipping and receive invoices. Instead of having to call our customer service department to request the documents they need, customers can now instantly access critical information, saving them time and allowing us to focus on getting goods to market."

After a lengthy evaluation process, Agility chose OpenText™ Content Services solutions, including:

OpenText™ Intelligent Capture to automatically scan and transform documents into PDFs while metadata is captured to enable easy search and retrieval

OpenText™ Documentum as a content management platform to tightly integrate with the company's core logistics system and financial applications, ensuring reports and key financial data are automatically stored in an electronic format

OpenText™ Documentum xCP to build modern user interfaces tailored to customers' needs across verticals

OpenText™ InfoArchive to ensure data and content retention complies with industry requirements

"Digital transformation is not just injecting technology into the well-established shipping industry, it is about changing the entire way of doing business," said Muhi Majzoub, Chief Product Officer, OpenText. "As a major global operation, Agility Logistics needed an enterprise-wide system flexible enough to meet the unique requirements of its operating regions. Leveraging innovative offerings from OpenText, Agility has increased customer satisfaction and cost savings while expediting processing and payments. Now, more than ever, we depend on companies like Agility to efficiently and safely move, manage and distribute time-sensitive goods across the world."

Agility will also leverage OpenText technologies to improve the environmental sustainability of their operations. "When an organization can track goods from origin to destination, and anything in between, they can optimize shipping to reduce carbon emissions," said Sharma. "Our global strategy is to be consistently efficient and sustainable in our operations, and OpenText is helping us accomplish this."

Click here to return to Contents

BAE Systems Installs Fourth Stratasys F900 3D Printer to Support Factory of the Future Initiative
15 July 2020

British defense, security, and aerospace giant BAE Systems (LON: BA) has added a fourth Stratasys F900 3D Printer to its manufacturing site in Samlesbury, UK, in a continued effort to reduce costs and improve production agility.

Along with its existing F900 line-up, the latest installation will run around the clock as an integral part of BAE's transformative "Factory of the Future" initiative, a cutting-edge facility in Lancashire which brings together the latest advances in technology and manufacturing to work seamlessly with human operators in a first-of-its-kind, fully connected way. Today, Stratasys industrial-grade FDM additive manufacturing is used across aircraft ground equipment operations for a wide range of applications spanning space models and design verification prototypes, manufacturing tools such as jigs and fixtures, and final end-use parts.

Optimizing aircraft production with additive manufacturing

According to BAE Systems, use of additive manufacturing across these applications is making production more flexible, faster and helping to reduce costs. Indeed, when using its F900 3D Printers to manufacture production tools, the company says that it is witnessing 'significant cost and lead time reductions' against those of traditional manufacturing methods.

"Our Factory of the Future program is all about driving the future of fighter aircraft production with disruptive technologies and we're working closely with our suppliers and wider industry to meet the challenges the UK Government has set out to us. Stratasys FDM additive manufacturing plays an important role in this initiative, as it helps us meet our overall company objectives to reduce costs and time-to-market," says Greg Flanagan, Additive Manufacturing Operations Lead, BAE Systems Air.

BAE Systems' latest F900 installation will not only increase 3D printing capacity, but also help exploit new 3D printing materials for tooling applications. This includes carbon-fiber-filled FDM Nylon 12CF material, which is used to create robust yet lightweight repair and development tools for the production line.

According to Flanagan, FDM-based 3D printing technology in particular offers an opportunity to decrease the up-front cost of tooling for new products. This is especially so with items such as drill tools, repair tools and other development tools that are often needed in small numbers.

"This technology allows us to innovate many of our traditional manufacturing processes," he says. "We can rapidly 3D print one-off parts for new products, replace tools more easily and cost-effectively, and maintain production operations when hardware is delayed. If supply chains become disrupted, having this production power in-house also enables us to be more agile as a business and continue to best serve the needs of our customers."

BAE Systems also has found great success in identifying traditionally manufactured applications that can be enhanced, or in some cases replaced, with high-performance 3D printing materials. This includes utilizing durable ABS and ASA materials for a range of aircraft ground equipment, such as cockpit floor covers for the Typhoon fighter aircraft. "With our F900, the thermoplastic covers can be made much faster than traditionally manufactured versions and are a lot lighter and easier to move for the ground crew, so it improves efficiencies within the maintenance, repair and overhaul process. An added bonus is that they can be printed in red – the color of all 'remove before flight' components," he adds.

The latest F900 was purchased from Stratasys' local partner Laser Lines, through whom BAE Systems has been a Stratasys customer since 2006.

Yann Rageul, Director Manufacturing Solutions EMEA at Stratasys, said, "BAE System's Factory of the Future program is a prime example of innovative companies seeking to exploit the latest advanced manufacturing technologies and processes to enhance traditional production as we know it. We continue to collaborate closely with the team at BAE to explore new solutions that further expand the application use of additive manufacturing within production – which will help to address and solve the company's current and future manufacturing challenges."

🔼*Click here to return to Contents*

ESPRIT and Quick Drive Racing: Meeting the Need for Speed

13 July 2020

Quick Drive, LLC is a Colorado-based manufacturer of a proprietary line of high-performance drivetrain components for auto racing. Their parts are designed, engineered, prototyped, and manufactured in-house. That's no small feat for a company that serves customers all over the globe. "We have clients on every continent with a racetrack, from the US to South Africa and beyond," says Brock Graves, Quick Drive's owner/operator.

Brock and his team get it done using milling, turning, and mill-turn processes on a number of machines; On the Quick Drive shop floor, you'll encounter both a Haas VF-2SS and a VF-4 vertical machining center, a Haas UMC-750 5-axis machining center, a Haas ST-20Y live tool lathe, a Takisawa EX-100 lathe, and a Mazak INTEGREX 200sy.

Originally, Quick Drive relied on a third-party company to produce their programming. But working with an outside agency began to present challenges as the company grew and their production increased. "As we started to ramp up our development, prototyping and constant part changes posed a big issue with quick turnaround times. In 2017, we made the decision to bring programming in-house," says Brock. But shifting to internal programming meant choosing a CAM software to keep up with their shop's brisk pace.

"After shopping many of the CAM options available, we decided to go with ESPRIT," Brock says.

What was the deciding factor? "ESPRIT could offer us proven post processors generated by their team of experts to work directly with our specific machines. And the simulation capabilities were like nothing else existing in the industry," Brock says.

The sheer breadth of components manufactured by Quick Drive is one element of their success. "We build drive units, torque converters, and specialty pneumatic products for drag racing, monster trucks, tractor pullers, drag boats, land speed vehicles, and various high-end custom vehicles," says Brock. "Our drive unit is composed of more than 20 individual components. The most complex part is a full-billet aluminum case that starts life as a 113-pound cube. It gets machined down to around 11 pounds over the course of about 27 hours of 5-axis machine time. Our converters are made from 6061 aluminum and use a combination of ProfitMilling, trochoidal channel roughing, and the 5-axis impeller strategy to complete," Brock says.

Other complex parts include converter impellers and converter stators, both of which are 5-axis parts. The converter pieces require uniquely shaped tools and advanced machining methods to complete.

The team at Quick Drive kicked off their ESPRIT license with their 5-axis Haas UMC. For Brock's team, ESPRIT's extensive, custom support helped to offset the challenges of learning a new software—and that support continued as their business grew. "As we added new machines, ESPRIT upgraded our software to cover the complex parts we needed to produce on new equipment we brought in. Post processing support, the digital machine package, and assistance was there again to help us through the growth curve very quickly," says Brock.

"We like knowing that the posts are created by ESPRIT for ESPRIT," says Brock. "We don't have to work with a third party to have the posts created or modified for our equipment."

ESPRIT significantly eased Quick Drive's transition to in-house programming. "For the most part, the software has been almost plug-and-play for us. When we do encounter a unique situation, ESPRIT has been able to generate a solution for us in less than 24 hours," says Brock.

Once the Quick Drive team got over the hump of training on ESPRIT, they began to chip away at reprogramming existing parts in their library. The improvement was astonishing. "We recently revisited a part that took 27 minutes to produce. Using the ProfitMilling feature in ESPRIT, we were able to produce the part in 15 minutes. Conservatively, we've also extended our tool life between 30 and 40%. Needless to say, we'll be reprogramming most, if not all, of our parts in the new software," Brock says.

In manufacturing, "time is money" is more than a catchy phrase. Brock is optimistic that ESPRIT will help their team keep up with the constantly evolving demands and innovations of the racing industry. "Our customers are continuously striving to break speed records, week in and week out. We don't have the option of saying something we developed works well, job complete," says Brock. Instead, Quick Drive's product development and improvement efforts are never-ending—the goalposts are constantly in motion. "We spend more time developing our product offering than we do building it. With partners like ESPRIT, we can get things done faster, more efficiently, and more accurately on the first try." With reduced manufacturing times, the Quick Drive team has more time to develop, plan, and stay a few steps ahead of the competition.

"The racing industry is gaining market share around the world, and the technology in these vehicles is improving exponentially. We see an incredible growth potential in this industry, and we're grateful to have the tools and resources to keep up with it," says Brock.

Click here to return to Contents

Former Finland Prime Minister Chooses SURFCAM

16 July 2020

For many years, even when he was Prime Minister of Finland, Juha Sipilä has relaxed through designing and milling a variety of items. Now he has taken his hobby to a higher level, with a new 4-axis CNC machine tool, and SURFCAM CAD/CAM software, from Hexagon's global portfolio.

He machines aluminium, brass. plastic and wood, and was looking to upgrade his Roland milling machine and CNC router, along with the software to drive them.

Before entering politics, he was an industrialist, owning a number of manufacturing companies, which gave him his first taste of machining. And he quickly realised that physically making things with his hands helped him to relax and solve abstract business issues. So he turned to also making things at home, as a hobby.

Vesa Sirén, from SURFCAM's distributor in Finland, Rensi Finland Oy, provided him with his first CNC machine for the garage at his home in Kempele, North Finland, in 2005. Now he is expanding his hobby of designing and manufacturing lifestyle products, that machine is being replaced with a larger 1.5m x 300 mm rotary table 4-axis simultaneous machine. He's also having a new 4-axis router at his second home, in Southern Finland, and has invested in the powerful and fast SURFCAM CAD/CAM system from Hexagon's production software portfolio.

Juha Sipilä was elected to the Finnish Parliament in 2011, becoming Chairman of the Centre Party the following year, and Prime Minister in 2015 – a post he held until 2019. During his time in politics he found that his manual hobby also helped him solve political issues as well; and he made a number of items which he gave as gifts to German Chancellor Angela Merkel, French President Emmanuel Macron, and the Swedish and Estonian Prime Ministers.

SURFCAM is now an integral part of his production processes, using the SURFCAM Designer direct modelling system for design, and the CAM module for machining.

The software played an essential role in helping him show neighbours his idea for railings along a pier. While the Finnish Parliament sits, he lives at Sipoo, near Helsinki, in one of 20 houses that share a common pier for their boats. He says it was extremely simple to draw up his suggested design for the railings.

SURFCAM has revolutionised how he uses both CAD and CAM. Typically now, he creates a 3D model in SURFCAM Designer and exports it into SURFCAM Traditional for producing fast, accurate toolpaths. He is particularly impressed with its game-changing Waveform Roughing strategy for milling aluminium and brass. "My CNC machine tool has a spindle speed of 24,000 rpms, so Waveform means I can have light cutting with fast feed rates."

Vesa Sirén says: "Mr Sipilä had been looking for a more flexible design and CAM system, so SURFCAM Traditional was ideal for him. And he knew from experience that we, as Finland's distributor, have provided SURFAM to more than 1,000 companies and can give full service, knowledge, support and training."

He has already undergone initial training on SURFAM Designer and basic 2- and 3-axis machining, and will complete training on 4- and 5-axis toolpaths later in the year.

As Prime Minister he was not able to pursue his love of producing lifestyle products as much as he would have liked, but now his duties as an MP mean he has more time…and with his new machine tools and software, he is looking forward to creating many more.

Vesa Sirén continues: "SURFAM Designer gives him the flexibility to quickly and easily modify and

edit his designs; and SURFCAM's 5-axis module offers true simultaneous 4- and 5-axis machining with full tool motion visualisation and verification. Precise control is achieved over every aspect of multi-axis machining, ensuring safe tool motion for even the most challenging applications. The 4- and 5-axis system provides support for all standard tools with collision checking, gouge avoidance, and toolpath containment. This is perfect to give him the freedom to fully express himself in wood on his new 2.5m x 1.3m 4-axis machine."

In the past Juha Sipilä has produced a variety of high end lifestyle items, including gavels, and engraved pieces for a meeting of his political party, along with sturdy aluminium parts for a wood gas powered car.

Vesa Sirén concludes: "The need for 100 per cent accuracy is relative, depending on what he's making. A number of Mr Sipilä's items are metal assemblies, so it's vital that the components fit together perfectly. He knows that with SURFCAM, each component coming off the CNC machine will be right first time, every time. His products will be even more beautiful now.

⬆️*Click here to return to Contents*

Halliburton Forms Strategic Agreement with Microsoft and Accenture to Advance Digital Capabilities

17 July 2020

Halliburton, Microsoft Corp. and Accenture announced they have entered into a five-year strategic agreement to advance Halliburton's digital capabilities in Microsoft Azure.

Under the agreement, Halliburton will complete its move to cloud-based digital platforms and strengthen its customer offerings by:

Enhancing real-time platforms for expanded remote operations,

Improving analytics capability with the Halliburton Data Lake utilizing machine learning and artificial intelligence, and

Accelerating the deployment of new technology and applications, including SOC2 compliance for Halliburton's overall system reliability and security.

"The strategic agreement with Microsoft and Accenture is an important step in our adoption of new technology and applications to enhance our digital capabilities, drive additional business agility and reduce capital expenditures," said Jeff Miller, Halliburton chairman, president & CEO. "We are excited about the benefits our customers and employees will realize through this agreement, and the opportunity to further leverage our open architecture approach to software delivery."

"Moving to the cloud allows companies to create market-shaping customer offerings and drive tangible business outcomes," said Judson Althoff, executive vice president, Microsoft's Worldwide Commercial Business. "Through this alliance with Halliburton and Accenture, we will apply the power of the cloud to unlock digital capabilities that deliver benefits for Halliburton and its customers."

The agreement also enables the migration of all Halliburton physical data centers to Azure, which delivers enterprise-grade cloud services at global scale and offers sustainability benefits. Accenture will work closely with Microsoft, in conjunction with their Avanade joint venture, to help transition Halliburton's digital capabilities and business-critical applications to Azure. Accenture will leverage its

comprehensive cloud migration framework, which brings industrialized capabilities together with exclusive tools, methods, and automation to accelerate Halliburton's data center migration and provide for additional transformation opportunities.

"Building a digital core and scaling it quickly across a business is only possible with a strong foundation in the cloud," said Julie Sweet, chief executive officer, Accenture. "Halliburton recognizes that this essential foundation will provide the innovation, efficiency and talent advantages to do things differently and fast. We are proud to be part of driving this transformational change, which builds on our long history of working with Halliburton and Microsoft."

Click here to return to Contents

Longratex Renews Partnership with Gerber to Enable Dual Workflows - Customization and Mass Production

13 July 2020

For 32 years, apparel manufacturer, Longratex, has relied on Gerber Technology's innovative solutions for their baby and children's brand, Patachou, and women's brand, Sophia Kah. With Gerber's unique end-to-end solution, Longratex is able to manufacture over 2,000 pieces daily and also meet the challenge of customization. By leveraging Gerber Technology's innovations, which include 2D/3D CAD solution, AccuMark®, sophisticated cut planning solution, AccuPlan™, and nesting solution, AccuNest™, as well as the Gerber Paragon® and automated spreading, Longratex has the agility and flexibility necessary to adapt to the world around them and meet every challenge they encounter, whether it's customized, short run or mass production. Since using Gerber's robust suite of software solutions, Longratex has been able to increase productivity by 50%, improve fabric economy by 3-5%, and boost efficiency by about 50%.

COVID-19 has acted as an accelerator for eCommerce and customization, forcing manufacturers to completely re-evaluate their supply chain. By leveraging digital technologies, Longratex implemented a flexible and agile workflow, beginning with online ordering, that allowed customization, shortened production cycles and accelerated time to market. With Gerber's solutions, Longratex effectively meets the need for on-demand products while still being able to mass produce when necessary.

"Today, digitalizing the supply chain is the only viable option for manufacturers to efficiently produce on-demand garments," said Theo Ostendorf, Vice President & General Manager of Europe, Middle East and Africa of Gerber Technology. "Our end-to-end solution empowers both on-demand and mass production, allowing companies of all sizes to conquer any challenge they may face."

Founded in 1988, Longratex has the broad manufacturing know-how to successfully provide over 600 retail stores in Portugal and the UK with products of the highest quality at an affordable price while also managing their own children's wear and women's wear brands. The manufacturer credits much of its success to their skilled workforce and Gerber's advanced innovative solutions.

"The full integration of our Gerber cutting room with the AccuMark Platform was essential when we decided to launch our own brands seven years ago," said Paulo Campos, General Manager of Longratex. "We were adding more and more small series, and even customized elements, to the fundament of mass production. We needed an integrated solution to increase productivity and responsiveness."

"Gerber has responded fully to our needs of training, assistance, and innovation, which encourages continuity in the business relationship," said Campos. "Through the new solutions presented to the market challenges, Gerber has given us reason to believe that it remains the right technology partner to

support us in this new digital era."

🔼 *Click here to return to Contents*

Sersa Gleisbau gets projects on track faster with CONTACT Software

15 July 2020

The leading Swiss railway engineering company Sersa Maschineller Gleisbau AG replaces the previous PDM system with CIM Database as part of its digitization strategy. With the new PLM platform, Sersa ensures consistent processes along all engineering disciplines and thus reduces the effort and costs in developing its specialized machinery.
With ever higher line utilisation and the shift from road to rail, the challenges facing the construction and maintenance of the rail network are also increasing. Safety and comfort require maximum precision with regard to gauge accuracy, position, inclination and superelevation of the track geometry. To ensure this, innovative technologies, modern measuring methods and high-performance machines are used.

Sersa Group AG (Switzerland), Sersa Technik AG, Sersa Maschineller Gleisbau AG and Rhomberg Bahntechnik, with 14 locations in Switzerland and around 1000 employees, are among the technology leaders in the construction and maintenance of railway infrastructure - from light railways to mountain railways and high-speed networks.

Previously, the engineers and teams from the mechanical, electronic and electrical departments used an in-house developed data management system. The lack of a multi-CAD-capable company-wide database and limited support for documentation, traceability and process reliability led to a high workload - at the expense of productivity.

Sersa was therefore looking for an innovative solution to digitally map product and process knowledge company-wide, to automate processes and to make the entire product development future-proof. The company evaluated several systems and decided to use CIM Database PLM, the leading technology of digital lifecycle management solutions from CONTACT Software. Especially the possibility to provide all development departments with M- and E-CAD-data on one platform according to the principle Single Source of Truth and thus to shorten development times convinced Sersa.

Direct comparison of bills of material (BOM) from development, production and maintenance, digital workflow and process control as well as reliable and fast change and release procedures reduce the error rate and improve cooperation. "CIM Database ensures a continuous flow of data from development to production and right into our maintenance," underlines Vincent Kuring, Head of Projects Technology Department at Sersa. "This enables us to reduce search times and make the know-how of our experts in all departments available in a very targeted manner. This increases the overall quality".

Another reason for choosing CIM Database PLM was the software architecture. Thanks to the open and modular low-code platform CONTACT Elements behind CIM Database, Sersa will be able to adapt existing applications to new requirements faster and more cost-effectively in the future and use new modules of CONTACT Elements flexibly as required.

"The Workspace Manager as an optimal tool in the design phase as well as the overall high flexibility due to the modular structure convinced us. With CIM Database, we are well positioned for digital transformation in design and development to meet the high demands of our customers in the future," says Kuring.

🔼 *Click here to return to Contents*

Product News

Altair Releases New Version of Altair Knowledge Studio

16 July 2020

Altair has released a new version of Altair Knowledge Studio that brings even greater speed, flexibility, and transparency to data modeling and predictive analytics.

"As a powerful solution that can be used by data scientists and business analysts alike, Knowledge Studio continues to lead the data science and machine learning market," said Sam Mahalingam, Altair chief technology officer. "Without requiring a single line of code, Knowledge Studio visualizes data fast, and quickly generates explainable results."

Accessible to a wide audience of business analysts and data scientists working in areas including fraud prevention, collections optimization, marketing, sales, CRM analytics, product design, and engineering, Knowledge Studio now employs automated machine learning (AutoML) to optimize the modeling process, while offering users unparalleled insight and understanding of how results are achieved.

Optimizing the entire workflow in minutes
Knowledge Studio has earned a best-in-class reputation for advanced functionality, a highly configurable approach to settings, and ease of operation. Available via Altair's flexible, units-based licensing model, the new version streamlines the entire workflow. At the outset, data is improved automatically by replacing missing values and dealing with outliers. AutoML then builds and compares many different models to identify the best available option. Compared to manual approaches, results are optimized in minutes rather than hours. Greater transparency gives citizen data scientists the opportunity and freedom to learn quickly. Improved control enables data scientists to modify models and fine tune performance.

Lifting the lid on machine learning-powered data modeling
Unlike competitive products, Knowledge Studio does not adopt a 'black box' approach that shuts out users. Fully committed to the principles of responsible and explainable artificial intelligence (AI), Knowledge Studio instead lifts the lid on the inner workings of models developed. Although models are developed automatically, explainable AI gives users the confidence that regardless of the model type, the process can be easily understood, interpreted and evaluated.

Other features new to Knowledge Studio include:
• Automated Python code generation that supports all predictive modeling – deployment-ready models can be created fast without requiring any coding skill.
• Direct data export to Altair Monarch, Altair's industry-leading data preparation tool.
• Support for R code 4.0 and higher.

Click here to return to Contents

Ansys 2020 R2 Accelerates Innovation for Engineering Teams

15 July 2020

The newly launched Ansys 2020 R2 brings enhanced solving and collaboration capabilities, key for enabling globally distributed teams to further organization-wide innovation. Ansys' newly updated advanced digital engineering tools help engineering teams develop new products, sustain business continuity, improve productivity and win the race to market.

Engineering teams are facing the daunting challenge of solving complex designs and meeting demanding product development schedules while working remotely. Ansys' next-generation engineering simulation software, high-performance computing (HPC) resources and platform solutions has helped power team-wide global collaboration and information sharing. Ansys 2020 R2 significantly upgrades these tools, providing highly advanced solutions which reduce costs and speed production.

"Simulations that were taking us over a week to run are now being completed in less than two days," said Benjamin Steinhaus, Engineering Director, Coca-Cola Freestyle, The Coca-Cola Company. "Overnight simulations are now being done in an hour. By using the Ansys® Cloud™ system that was provided to us, our team has actually increased productivity during COVID."

Ansys 2020 R2 helps engineering teams accelerate innovation in any environment and create cutting-edge designs by harnessing new workflows and dynamic capabilities across Ansys' flagship suites. Updates in Ansys Cloud offerings, such as virtual desktop infrastructure support, unite Ansys' flagship simulation solutions with highly scalable compute power delivered by cloud-based HPC. Platform solutions enhanced with powerful workflows deliver a streamlined user experience with enhanced functionality for data and configuration management, dependencies visualization and decision support, as well as user-friendly workflows for process integration and design optimization and materials management. Ansys' digital twin solutions enable remote monitoring of assets and are a critical component for predictive maintenance.

Collectively, these resources will help engineers generate larger, more complex designs easier and faster than ever, increase productivity, spur development of high-quality products and expedite time to market.

Ansys EMA3D cable helps simulation electromagnetic interference and electromagnetic compatibility on cable harnesses

Although the world has slowed with COVID-19, the most innovative and cutting-edge companies within the automotive industry are continuing their autonomous vehicle (AV) developments as planned. Ansys 2020 R2 drives AV development and validation with new technologies ranging from advanced LiDAR models to a new sky model for enhanced daylight simulation that extends camera hardware-in-the-loop use cases to daytime. It also provides a complete New Car Assessment Program (NCAP) scenario kit for AV function development, enabling rapid simulation of standard NCAP testing scenarios, potentially reducing the cost of physical testing by 50% as advanced driver assistance systems increase in vehicles.

"Ansys' optical and simulation solutions empower Weldex Corporation to render our engineering innovations into visual material," said William Jung, CEO, Weldex Corporation. "We are able to import optical simulation results of headlamps from Ansys® SPEOS™ to Ansys® VRXPERIENCE™ Headlamp and use scenarios created in Ansys® VRXPERIENCE Driving Simulator powered by SCANeR™ to create movies of driving vehicles equipped with our products' virtual prototypes. We use the results to facilitate post-processing and data visualization for lamp certification, replacing costly and difficult night tests. These tools also give us a real competitive advantage to demonstrate our high-quality, durable automotive illumination solutions to our customers through lifelike and reliable pictures and videos."

Additionally, Ansys 2020 R2 improves deployment, scalability and performance of AI-based perception software testing through multi-GPU parallelization, making it easy to systematically identify hazards

and comply with new safety standards like Safety of the Intended Functionality (SOTIF).

"NXP is in process of deploying Ansys® medini analyze internally as the recommended tool to perform quantitative safety analyses. Several valuable tool improvements have been identified and implemented over the last years of collaboration, for example, related to distinction between transient and permanent faults and import and allocation of design data," said Dr. Rolf Schlagenhaft, senior automotive functional safety professional and assessor, NXP Semiconductors Germany GmbH. "The number of NXP projects which use medini are increasing. The collaboration between NXP and medini continues with a focus on easy configurability of generic safety analyses to specific customer use cases by field application engineers."

In support of automotive electrification, a new thermal and vibrational analysis coupled with Ansys' industry-leading electromagnetic field simulation software helps predict reliability and noise, vibration and harshness. Additionally, modeling thermal behavior of batteries during all stages of the design cycle is now easier than ever by using a streamlined workflow and new capabilities that simulate the important effects of capacity fade and cell life.

Supporting 5G, Ansys 2020 R2 advances phased array antenna analysis to enable engineers to simulate larger, more complex designs with scalable leveraging of HPC. Additionally, engineers may leverage significant advances for integrated circuit (IC), package and board workflows, enabling electronics reliability and electrothermal modeling. Lastly, on-chip device modeling combined with 3D electromagnetic simulation software provides gold standard verification for sensitive ICs.

"Across every industry, COVID-19 has forced engineering teams to work differently and find new ways to innovate. Simulation unlocks the potential of these distributed teams, enabling them to achieve more with less while quickly responding to the changing demands of their customers," said Shane Emswiler, senior vice president, Ansys. "Ansys 2020 R2 provides the building blocks that help companies accelerate innovation and expedite the development of high-quality products for customers around the world."

Click here to return to Contents

Ansys Discovery Greatly Improves Product Design Processes

16 July 2020

Ansys is helping engineering teams deliver significant gains in productivity, spur innovation and speed time to market with Ansys® Discovery™. Significantly expanding on the breakthrough advancements delivered by Ansys® Discovery Live™, this next generation application delivers a comprehensive solution that combines interactive real-time simulation, high-fidelity Ansys solver technology and direct modeling in a single tool — powering cross-team collaboration to cost-effectively develop high-quality products.

"Discovery equips our team with a much better understanding of the physics behind our products very early in the design process, enabling them to meet customer requirements more precisely, avoid overengineering and eliminate uncertainties," said Stefan Macho, head of R&D Simulation, HAWE Hydraulik. "This has resulted in improved product performance, increased design efficiency and shortened product development cycles."

Discovery is the first simulation tool to combine instant physics simulation, accurate high-fidelity simulation and interactive geometry modeling into a single very easy-to-use interface. Conducting real-time, rapid iterative design explorations, more engineers can now explore larger design spaces and quickly answer critical design questions earlier in the product design process.

"Discovery has made a profound impact on how we engineer new products," said Mauricio Toro, CEO, TECHFIT Digital Surgery. "By shifting to the left — adopting simulation during the concept and design phases —our team understands the impact of design decisions early, prior to selecting a potentially suboptimal or ultimately more expensive solution."

Driving widespread adoption of simulation, Ansys Discovery offers an intuitive user experience built for the design engineer, delivers industry-leading fidelity in the analysis stage with embedded Ansys flagship solvers and provides tremendous speed to support design engineering workflows. Teams will be able to innovate more designs in less time, provide rapid design exploration and deliver detailed insight into product performance.

"Discovery delivers a next-generation user experience, enables a very quick and intuitive learning curve for every engineer, and represents as big a step forward in 3D design as the initial release of Ansys® Discovery™ Live. Coupled with our unique real-time simulation technology and gold standard solvers, it has never before been so easy to interactively explore a large design space and perform refinement with peak accuracy," said Mark Hindsbo, general manager, design business unit, Ansys. "This enables engineers to bring simulation upfront in the ideation and design phase of product development, uncovering risks early before the costs to correct them become high or difficult to change."

Click here to return to Contents

C3D Labs Brings Advanced Surfacing to C3D Toolkit 2020

17 July 2020

C3D Labs is pleased to announce the release of C3D Toolkit 2020, a major update to its software development kit (SDK) used by developers of engineering software. The emphasis in this release is on advanced surface modeling, along with significant enhancements to all five modules in the toolkit:

Geometry kernel -- C3D Modeler

Constraint manager -- C3D Solver

Polygonal mesh to B-rep converter -- C3D B-Shaper

Visualization engine -- C3D Vision

Data exchange -- C3D Converter

The five modules are closely integrated with one other, and so together represent the most complete, all-in-one solution on the market today in building desktop, mobile, and cloud-based applications for 3D modeling.

After assessing the needs and requirements of software in many different industries, C3D Labs enhanced C3D Toolkit 2020 with powerful capabilities for developing innovative software products in the fields of building information modeling (BIM), virtual reality (VR), 3D scanning, and digital manufacturing -- as well as for classic CAD, CAM, and CAE systems.

The 2020 release features new and improved tools for 3D surface and solid modeling, 3D sheet metal design, direct 2D editing, 3D visualization, and interoperability.

New and Improved Functions in Surface Modeling

When preparing the 2020 release of C3D Modeler geometric kernel, C3D Labs focused on complex surface modeling. This is considered the high-end of CAD functionality and paves the way for solving design tasks in the aerospace and shipbuilding industries. And so we added to the new version the following functions important in surface modeling.

New: Smooth Curve Construction. "Smooth" means that changes in curvature are smooth. Smooth curves can be built either on vertices or on tangents of reference polylines. Smooth curves are edited with a geometric determinant, which contains information about derivatives at individual points on the curve. You can achieve the desired curve shapes by changing the geometric determinant.

New: Conic Section Surface Construction. Conic section surfaces are obtained by moving a flat generatrix along a spine curve. As it moves, the generatrix changes its shape according to control functions. A conic section surface can be made to join two specified surfaces smoothly. The function allows you to build surfaces with five types of sections: conic section curves, sections in the form of NURBS, sections in the form of arbitrary splines, circular sections, and ruled sections.

New: Managing Offset Curve and Surface Distances. The distance of offset curves can now differ at either ends of the curves, and can change based on linear or cubic functions of the curves' parameters, or remain constant (as in previous releases).

Improved: Simultaneous Extension of Multiple Boundary Faces. The boundary face extension function is improved to process multiple faces simultaneously.

New: Merge Multiple Faces. You can now replace two smoothly joining faces of a body with a single face.

Improved: Construction of Surfaces from Curve Meshes. When constructing a surface from curve mesh, multi-segment contours are available to define a network of curves. This extends the ability of building on this surface. Internal parameterization has been improved for the surfaces, making it possible to improve the smoothness of the junction between the cells of the surface in some cases.

Improved: Swept Shell Operations. The new release adds the ability to explicitly control the movement of generation elements according to the normal of the surface on which the guide curve lie, if it is determined that such a surface can be used as a guide curve. This option generates different shapes of the sweep body. In addition, it is now possible to set simple convex bodies as the generatrix, and not just curves or faces, as in earlier releases. This allows ever more complex bodies to be created without additional construction.

Improved: Lofted Surface Domes. Sectional (or lofted) surfaces gain a feature for controlling the shape of surfaces when end sections are set as points. We called this option "the dome." By setting the vector

and coefficient, you can control the shape of the surface when approaching the point section.

Improved Functions in Solid Modeling

Improved: Expandable Surface Shell Cutting. When cutting solids with a surface, you can now control the extensions of the following surface groups: flat surfaces, rotation surfaces, and extrusion surfaces.

Other improvements. The median shell function has been improved to allow you to set a range of thicknesses, instead of working with a single value. Disconnected faces now extend towards one another until they intersect. Fillet processing is improved.

New Functions in Sheet Metal

C3D Modeler brings sheet metal modeling functions that are unique for geometric kernels.

New: Arbitrary Body Stamping. A new method in stamping sheet metal is to use arbitrary bodies, just like performing it physically with dies and punches. The thickness of the stamped section can be different from that of the sheet.

Coming soon: Flanges Along Curved Edges. Flanges can be added to single curved edge or even to a chain of several tangent edges. Curved edges flange can, of course, be flattened and bent again with the unfold and fold tools.

Improved Functions in Mesh to B-rep Conversion

First released in 2019, C3D B-Shaper kept the spotlight throughout the year. This new module transforms heavy polygonal meshes into optimal B-rep solids for editing and visualization in 3D software. Our B-Shaper is useful in the areas of reverse engineering, BIM, VR, and topology optimization. Over the last year, we kept testing its algorithms with thousands of incoming models to improve on the high-quality of conversion results.

Improved. In B-Shaper 2020, we simplified the mode of B-rep construction. If surface-surface intersections fail, then boundary edges are constructed, which is acceptable for visualizations.

New Function in Direct 2D Editing

New: Dynamic Transformations. In previous releases, C3D Solver's cursor dragging allowed you to move geometric objects. In C3D Solver 2020, we extended dragging to transformations, such as translation (moving), rotation, and scaling, and implemented dragging best practices. For instance, before a transformation is attempted, Solver finds and fixes the largest number of geometric objects possible. It works for both a single transformation and for serial transformations (animation mode) in the same way and with the same efficiency.

Improved Functions in Interoperability

Improved: JT Support. The JT format is the most modern one on the market and so it is greatly valued by developers of 3D engineering applications. C3D Converter 2020 now reads the attributes of parts from JT by accessing the metadata of the file, and then transferring the model's integral properties (volume, surface area, density, mass) to STEP and JT formats.

Improved: Mesh Translation. In C3D and JT, meshes are arranged differently from each other, and so C3D Converter in earlier releases quickly wrote only those meshes that lacked topology. After a deep rewrite of the mesh transformation algorithm, the 2020 release quickly exports meshes with topology to JT.

Improved: PMI Handling. C3D Converter 2020 now reads embedded fonts in JT to correctly display full PMI (product manufacturing information). As the C3D format itself does not support fonts, transferring PMI data through the C3D format is performed by marking PMI geometric objects with special attributes and then providing the ability to substitute fonts for the STEP format. This capability will be enhanced in future releases.

New and Improved Functions in 3D Visualization

C3D Vision is aimed at the precise visualization of geometric construction and high performance when working with big models, and so it has been developed especially for use in 3D engineering applications.

New: Interactive Tools. The 2020 release introduces a new group of interactive tools called "manipulators." The basic manipulator is the SceneWidget, which is used as part of the object editing processes.

Among the other manipulators we developed, there are these:

Hot-point widget with specific representations and behaviors

Move manipulators that move along a specified axis

Rotation manipulators that rotate about axes

Improved: Tool Selection. The tool for selecting geometric objects with a frame (window) is improved by letting users select either unifying or cutting frames, and their combinations – set by specifying the frame from left to right or from right to left.

Improved: Zooming. A new zooming feature available in C3D Vision is zooming by a frame.

Availability and Pricing

The 2020 edition of C3D Toolkit is available now.

The entire toolkit, as well as individual components, is available for testing in your programming environment at no charge. For details, see https://c3dlabs.com/en/evaluation/

Click here to return to Contents

CGTech releases Vericut version 9.1

14 July 2020

CGTech has released the latest Vericut software, Version 9.1. Vericut CNC machine simulation, verification, and optimization software simulates all types of CNC machining, additive, and hybrid manufacturing processes. The software operates independently but can also be integrated with leading CAM systems.

Vericut 9.1 raises the bar for CNC simulation once again with several new cutting-edge features that increase efficiency and empower users to do more in less time. New visibility options, plus enhancements to toolpath optimization, additive manufacturing (AM), tooling & multi-tool stations, measuring & inspection/reporting are just a few of the noteworthy features in this latest release. Hundreds of customer-driven improvements and software requests were also incorporated in this latest version.

Enhanced visibility

New visibility features have been added to the Project Tree and Vericut's right-click convenience menus for components and models, enabling users to toggle between visible and invisible states, or to enable/disable 3-D objects for the simulation. New features have also been added to Auto-Diff giving users a higher degree of control over component visibility, such as when fixture models should appear.

X-caliper Annotated Images

Setup Plan has been renamed to Annotated Images. Vericut Inspection is also now included with Annotated Images. Both Setup Plan and Inspection functionality are greatly enhanced with dimensions, notes, and tolerances for checking parts at various stages of machining. Easily create professional looking and informative setup plans and inspection images stored with view layouts - ready to print as "shop aid" documents, or to appear in Vericut's comprehensive reports.

Shanks in cutting tool assemblies

Defining shanks as separate objects from the holder and cutter enables programmers to see where these non-cutting portions of the cutter are relative to the stock workpiece, and allows more discrete control over near miss and collision detection properties and tolerances. Tool holder models can also be used as "Shanks".

Streamlined optimization with AI

The Optimize Control window has been streamlined to fit in a single window with no tabs. Relevant features become active in subsections depending on which Mode is selected. A new Force "Learn" Mode is available, providing artificial intelligence (AI) for optimization. In Learn mode, Vericut learns from simulating cutting, then automatically configures and optimizes tools for increased cutting efficiency and reduced machining times.

Force charts

New "Save All As" Optimization Settings option added to the right mouse menu when clicking on a Force Chart. New ability to 'Learn From Results' enables optimization settings for a tool or all tools that were analyzed.

Additive manufacturing

Vericut 9.1 has a new "Additive" Default Machining Type. This enables Vericut to predict system resources that will be needed to additively build the as-designed part, including a starting stock build plate or model. Vericut can build multiple parts created by a "nested" build NC program, enabling additively built parts to be independently relocated or assembled for finish machining, or exported. This feature is especially helpful for big area additive manufacturing (BAAM) and large scale additive

manufacturing (LSAM) parts.

DXF import

The DXF import feature has been enhanced with several new features. The DXF reader can now read the layers within a DXF file and automatically detect CUT/NOCUT layers. Additional layers can be checked on to use as additional components.

Click here to return to Contents

Esprit announces extended support for Mazak Smooth Ai CNC360 2020 R1 Now Available

17 July 2020

DP Technology, parent company of Esprit CAM, announces the Esprit digital twin may now be used within the Mazak Smooth Ai CNC.

Further establishing itself as a leader in artificial intelligence for the manufacturing industry, Esprit by DP Technology announced extended support for Mazak Smooth Ai CNC. Esprit produces machine-optimised, edit-free G-code programs, program optimisation, and machine simulation for Mazak's entire line of machine tools. The extended support offered by Esprit for Mazak's new Smooth Ai CNCs includes the ability to utilise the Esprit digital twin inside the CNC. This new capability is the result of years of collaborative partnership between DP Technology and Mazak Japan and an exciting example of what's on the horizon for the industry at large.

With this extended support, the Esprit project data is synchronised with the Mazak Smooth Ai CNC. The synchronised project data includes the part and stock models, workholding, tooling, work offsets, tool offsets, and G-code program. With the synchronization between Esprit CAM and Mazak Smooth Ai, users can now preview the entire machining process virtually on the CNC, using the Esprit digital twin, before executing the program on the CNC machine. As a result, manual data input is eliminated, and the machine operator is offered greater assurance of the machining process. This results in shorter setup and prove-out times, and higher quality first-article run-offs.

Click here to return to Contents

Kawasaki Robotics Bases 3D Simulation Platform On CENIT Fastsuite

16 July 2020

On September 1, robot maker Kawasaki Robotics (Neuss) will launch K-Virtual: A new, innovative platform for efficient plant engineering, robot simulation and offline programming. In developing the intuitive 3D simulation solution, Kawasaki relied on collaboration with CENIT and its FASTSUITE Edition 2 technology.

The 3D simulation platform K-Virtual is the latest output of the long-standing partnership between Kawasaki Robotics and CENIT. Industry robots by Kawasaki are deployed in complex manufacturing processes. To ensure maximum robot performance, the company uses the simulation-based technology of CENIT FASTSUITE Edition 2 to plan its automation solutions and manufacturing processes. The Neuss-based robot maker values the FASTSUITE software for its precise mapping and simulation of real-world production systems and plant facilities as well as its logical behavior and control features for manufacturing cells.

CENIT and Kawasaki Robotics plan to leverage the strategic development collaboration to offer client businesses maximum performance of Kawasaki robots within the respective automation solution – from initial installation to reprogramming and plant re-engineering.

Kurt Bengel, CEO of CENIT AG, says: "As a proven technology partner in the field of agile manufacturing technology and simulation solutions, we are proud to contribute to the success of Kawasaki Robotics and its customers." He adds: "With the sustained expansion of our strategic partnerships and continued development of our software expertise, we are consistently implementing the enterprise targets defined in our CENIT 2025 strategy."

Carsten Stumpf, Vice President Kawasaki Robotics Germany, says: "The performance of K-Virtual as an agile simulation platform is based on the proven FASTSUITE technology. We are certain that this lets us offer our clients an ideal tool for future-proof planning of their automation processes. In this context, we are pleased that CENIT will continue to work closely with Kawasaki Robotics as our software partner."

Click here to return to Contents

OMRON provides 3D engineering data in CADENAS solutions for OEM and industrial customers

17 July 2020

OMRON Electronics GmbH now offers its 3D engineering data as a digital product catalog for OEM and industrial customers in cooperation with CADENAS. 3D CAD models of sensors, relays, measuring and inspection devices, industrial robots, controls and panel components are available free of charge in the Strategic Parts Management PARTsolutions as well as at https://omron.partcommunity.com in over 150 common CAD formats.

While globalization and digital production are advancing, digital product catalogs, such as those from OMRON, support industrial companies such as WITTENSTEIN, SMS group and Procter & Gamble in manufacturing and maintenance of machines and systems. Engineers and designers require a variety of digital product data of purchased parts from a wide range of component manufacturers to plan and design their machines and systems.

Quick and easy search for purchased parts

Numerous leading industrial companies worldwide already use CADENAS Strategic Parts Management PARTsolutions to manage their own and purchased parts. As of now, OMRON purchased parts are also available within the software solution. Using numerous intelligent search methods, engineers can find OMRON's 3D CAD engineering data quickly and easily, thereby increasing the reuse of the components. Thanks to PARTsolutions, the comprehensive product data from OMRON can be easily integrated into PLM systems such as Teamcenter, PRO.FILE or SAP PLM. There is no need to create the data manually and projects are significantly accelerated.

Faster and cost-effective product design thanks to metadata

The 3D engineering data provided in the digital product catalog are verified by OMRON and meet the highest quality standards. This reduces the time-consuming and costly reconstruction by engineers to a minimum. In addition, the components also contain numerous important metadata, such as customs tariff numbers or end-of-life information. The latter ensures that discontinued OMRON components are not used in new design projects and that information about subsequent components is always available. This data is of great importance for industrial companies because it saves a lot of time and money when designing and maintaining machines and systems.

Components from digital product catalogs preferred at industrial companies

With the digital product catalog and the metadata of its components, OMRON offers a comprehensive service and fulfills the special requirements of OEM- and industrial customers worldwide, that prefer to

use components from manufacturers whose engineering data are quickly and easily accessible. Manufacturers of technical components that want to integrate their products directly into their customers' planning and development processes can now seamlessly provide their product data, thanks to the digital product catalog from CADENAS. This ensures that components can automatically flow into PARTsolutions and thus into the constructions of the respective customers.

For more information on digital product catalogs, go to:
www.cadenas.de/en/products/ecatalogsolutions/electronic-cad-catalog/motivation

About "innovative-Automation"

As a leader in industrial automation, OMRON has extensive lines of control components and equipment, ranging from vision sensors and other input devices to various controllers and output devices such as servomotors, as well as a range of safety devices and industrial robots. By combining these devices via software, OMRON has developed a variety of unique and highly effective automation solutions for manufacturers worldwide. Based on its reservoir of advanced technologies and comprehensive range of devices, OMRON set forth a strategic concept called "innovative-Automation!" consisting of three innovations or "i's": "integrated" (control evolution), "intelligent" (development of intelligence by ICT), and "interactive" (new harmonization between people and machines). OMRON is now committed to bringing innovation to manufacturing sites by materializing this concept.

Click here to return to Contents

Siemens announces Solid Edge 2021

14 July 2020

Siemens Digital Industries Software announces the 2021 version of Solid Edge® software, which includes design capability enhancements such as new subdivision modeling and improved reverse engineering performance with new deviation analysis. A new artificial intelligence-powered adaptive user interface to predict next steps, and a seamless integration with 3dfind.it, an intelligent 3D model search engine powered by CADENAS, can be used to save valuable time in the upfront design phase.

"Solid Edge 2021 is, in my opinion, the best Solid Edge release in years! There are a lot of things that will make the design process easier for our engineers," said Ricardo Espinosa, R&D Engineering Manager, Kimball. "Subdivision modeling is very powerful. Having the ability to easily incorporate organic shapes into our product designs within the Solid Edge environment is a big deal for us. Having the process contained in one software solution without the need for importing, exporting and translating data is very important."

Enhancements have been made across the Solid Edge portfolio. These include:

Fast, accurate 2D layout of industrial control panels with new cabinet panel design capabilities.

An optimized integration between flow and structural simulation.

A new searchable postprocessor database and improved roughing and adaptive milling capabilities accelerate Numerical Control programming.

Enhanced cloud-based collaboration options with the introduction of Teamcenter® Share, which can be used with Solid Edge to synchronize desktop files to secure cloud storage.

⬆️*Click here to return to Contents*

Tecplot 360 2020 R1 Now Available

17 July 2020

Tecplot, Inc. has announced the general availability of Tecplot 360 2020 Release 1.

"This release represents the most significant change to our graphical user interface (GUI) architecture in six years. The addition of native support for high-resolution monitors gives Mac users, and those with retina displays and 4k monitors a whole new meaning to visualizing their results," says Product Manager Scott Fowler.

Tecplot 360 2020 R1 natively supports high-resolution monitors. The software has been updated to the Qt 5 GUI (graphical user interface) toolkit, which has support for retina displays and 4K monitors. Mac users will be especially happy about this!

Linux users exporting images in batch mode can take advantage of hardware-accelerated graphics, yielding faster image export. A 4.6x speedup was seen in hardware-rendering tests. Rendering speed when using software-rendering saw a 2.3x speedup due to a newer version of the Mesa software rendering library.

Understanding surface flow is now much easier. Tecplot 360 2020 R1 will auto-detect a no-slip surface (a surface with zero velocities). And it will query the neighboring volume data for velocities before drawing the surface restricted streamtraces.

Vectors can be distributed evenly, making the flow easier to understand. This is especially helpful when grids are adaptive or irregular. Instead of displaying a vector at each node (too dense) or skipping nodes (still too dense in some areas and too sparse in others), vectors can have an even distribution which makes the flow much easier to see and understand.

⬆️*Click here to return to Contents*

ZW3D 2021 Beta is Now Available for You to Try

17 July 2020

ZWSOFT unveiled ZW3D 2021 Beta for testing. The new version brings extended functions for CAD design and CAM programming as well as better user experience, helping you tackle more complex tasks.

Friendlier Interaction

In ZW3D 2021, user experience has been further improved with some small yet considerate new functions. For example, Command Search helps you quickly search commands by keywords, which is useful for unfamiliar functions. And for repetitive work, Script Record can help by recording the commands as a script, which can be set as a map key to quickly conduct the operation by one click next time. Moreover, the Cartesian Coordinate System is now fully supported, including 2D/3D Datum Axis, Datum Plane, and Datum CSYS, helping with sketch design, modeling, PMI dimensions and assembly constraint setting.

Extended CAD Capabilities

Except for friendlier user experience, CAD functions have been extended for higher-quality design. For sketch design, new functions like Offset Constraint to add constraints to offset entities,

Equal Curvature Constraint to realize smoother curves and surfaces, Cosmetic Sketch to provide references for modeling process, etc., are ready for you.

As for modeling, G2 Blend is supported to get filets and blend faces of higher precision, especially benefiting streamlined design. The new Cross Trim function can trim multiple surfaces and sew them at a time.

Assembly has also been remarkably improved with new functions like Include Unplaced Component to insert virtual components in the assembly tree and the 3D BOM, Clearance Check to detect the minimum distance between components, and Batch Attribute Edit to apply attributes to multiple objects simultaneously.

Optimized CAM Programming

Enhancements in CAM module are also worth expecting. For instance, more types of cutting tools are supported in turning, including the pentagon, hexagon and octagon ones. What's more, Full Machine Simulation has been upgraded with Machine Builder, CNC Controller, Machine Register, new measuring tools, etc. It helps you simulate the actual machining process more easily and accurately. Besides, the CAM operation list now can be exported to Excel, where you can also show or hide a specific coordinate. Finally, Arc Fitting is supported in 2X Milling, 5X Milling, and Surface Engraving to help generate higher-quality toolpaths.

To summarize, ZW3D 2021 brings a lot of new functions and optimizations for better user experience and stronger CAD/CAM capabilities. Now the beta package with a 30-day free trial is available. Welcome to try and share your comments with us in the ZW3D user group. Your voices are valuable to help us deliver a better ZW3D.

Click here to return to Contents