

PLM Weekly Summary

Editor: CIMdata News Team

14 August 2020

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CIMdata News

Collaborative Manufacturing: Critical for Success in Today's Complex Heavy Equipment Industry – A CIMdata Commentary

13 August 2020

Key takeaways:

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Increasingly, heavy equipment manufacturers must produce custom configurations, often in small quantities, while simultaneously managing increasing product complexity.

Effective collaboration between product engineering, manufacturing planning, production, and service operations, leveraging closed-loop manufacturing, is required to compete and win in today's complex heavy equipment industry.

A comprehensive collaborative manufacturing environment is essential to analyze the impact of a product mix on production, allowing companies to optimize overall throughput.

Xcelerator from Siemens Digital Industries Software is a comprehensive, integrated suite of software, services and an application development platform designed to help customers define, sell, produce, and service today's complex products more efficiently.

Introduction

Heavy equipment manufacturers today are being challenged by their customers, the competition, and government regulators, to develop smarter, more eco-friendly equipment in an increasingly difficult economic climate. Key factors driving these challenges include tougher emissions standards, higher performance requirements, ever-increasing safety standards, electrification, and the application of new technologies such as augmented reality and artificial intelligence. Additionally, companies realize the safest place for their operators is outside the mine or construction site, so remote teleoperation and autonomy are often sold as a safety asset.¹

As a result, heavy equipment is getting smarter. Much of today's equipment is software- and electronics-driven, can connect with other machines and systems, and is able to operate autonomously. Manufacturers have a fundamental requirement to manage the rapidly increasing complexity of hardware, software, and electronics integration within heavy equipment to drive product development, product performance, and differentiation. To do this, competitors in the heavy equipment industry must create collaborative manufacturing environments that enable them to:

Ensure compliance, based on more stringent requirements around quality, noise, and emissions.

Find ways to more quickly introduce new, complex products with multiple attachments and sensors.

Deliver expected manufacturing efficiencies despite the need to continuously improve and innovate.

Achieve the expected quality no matter where or at what volume their products are produced.

Two key challenges that heavy equipment makers face in today's environment are: 1) increasing product development complexity and variation, and 2) globalized production—being able to simultaneously produce multiple product variations at different production plants around the world. Further, customer demands for "personalized" products increase product and process complexity of both development and production as well as long-term service. The resulting requirement to support the definition and

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¹ Research for this paper was partially supported by Siemens Digital Industries Software

management of a massive number of configuration alternatives drives the need for improved collaboration between product engineering, manufacturing engineering, production, and service management. Companies therefore need integrated information flows and processes that are highly flexible and can adapt to product and market changes. Implementing integrated Manufacturing Enterprise Innovation Platforms² to address these issues can help achieve faster ramp-up to production and reduced time to market, while improving response to changes in global and local customer demand.

CIMdata believes that companies that address these issues will position themselves to more quickly deliver the complex Configure-To-Order (CTO) products heavy equipment customers are demanding and will be better able to make more efficient use of their distributed manufacturing facilities and service resources. This translates into winning market share from competitive offerings and increased customer loyalty.

Efficiently Producing Complex Products

To efficiently realize global design and production, manufacturing enterprises must design, manufacture, and service multiple configurations and variants of a product family in a cost-effective manner. This means:

Improved collaboration in planning and scheduling that starts earlier during product engineering instead of later when the design is released and transferred to manufacturing.

Better leverage and re-use of corporate IP, expertise, and lessons learned as well as stricter compliance with company standards and applicable regulations.

Enabling this is closed-loop manufacturing (CLM) to manage changes between engineering and manufacturing (and service) and incorporate feedback from the shop floor. Built on seamless integration between PLM, ERP, and MES, CLM enables synchronization and optimization along the entire value chain. It supports direct cross-domain feedback loops from downstream to upstream activities and vice versa, enabling processes such as change management and issue and defect tracking.

To achieve individual plant production goals, companies must distribute operations to specific workstations, perform line balancing, and assess machine utilization in real-time. Historically, this has been done using highly manual methods; however, visual process planning and line balancing software tools are now available to help planners more easily identify and resolve shop floor issues.

Leading manufacturers integrate planning and simulation tools for up-front validation of manufacturing processes to develop right-first-time manufacturing plans, reducing the risk of errors in manufacturing and improving quality.

Companies also require collaborative manufacturing capabilities so that they can analyze the impact of product mix on production to optimize overall production throughput. Such analysis identifies and reduces non-value-added work and optimizes material flow and logistics. Manufacturers can also better

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² https://www.cimdata.com/en/news/item/13796-cimdata-publishes-an-enterprise-innovation-platform-for-manufacturers

plan to optimize equipment usage and more easily evaluate alternatives to determine, early on, how optimized throughput can be realized under typical mixed-model production scenarios.

To work more efficiently and be more competitive, heavy equipment manufacturers require configured, intuitive, and up-to-date information available on the shop floor via online electronic work instructions. These work instructions contain assembly sequences, visual data, and animations that can be automatically retrieved for any given production order based on a plant-specific process definition. Having direct access from the production work context, with information about assembly station layouts, parts, and tools to be used, helps production personnel report non-conformance issues on the shop floor—another example of effective CLM.

Siemens Digital Industries Software's Strategy for Collaborative Manufacturing

Siemens Digital Industries Software (Siemens) has recognized the industry's need for a collaborative manufacturing approach to help their customers manage the increasing product and process complexity, as discussed above. Siemens has taken a holistic solution approach to address how product engineering and manufacturing must collaborate to manage highly configured products produced globally. Fundamental to their strategy is that companies need to be better able to deal not only with product complexity (CTO with increasing variations) but also manufacturing environment complexity (global sourcing and production with different processes at each plant) and the ability to deliver service both onsite and remotely.

Figure 1 illustrates a comprehensive digital twin as a key element in closed loop collaborative manufacturing.

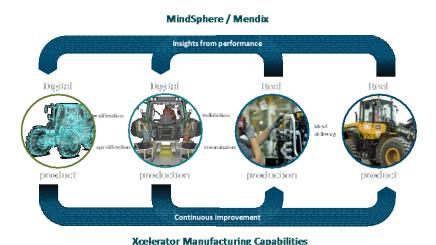


Figure 1—Siemens' Xcelerator Portfolio Supports a Comprehensive Digital Twin for Manufacturing

(Courtesy of Siemens Digital Industries Software)

Siemens' Xcelerator portfolio is a comprehensive, integrated suite of software, services, and an application development platform providing the foundation for collaborative manufacturing. Xcelerator³ helps businesses leverage complexity as a competitive advantage and transform themselves into digital enterprises faster. Characteristics of this portfolio particularly pertinent to the manufacturing of CTO products are:

Comprehensive digital twin comprising a digital fabric of information from product design, manufacturing, and in-field utilization data, enabling cross-domain engineering, virtual validation, and continuous product and process improvement through a closed-loop feedback system.

Personalized, adaptable solutions created from Xcelerator adapted to each heavy equipment maker's digital roadmap and uniqueness.

Open, modern, ecosystem that heavy equipment makers can adapt as technologies and their business strategies evolve.

Figure 2 shows what is needed to bridge the gap between design and execution.

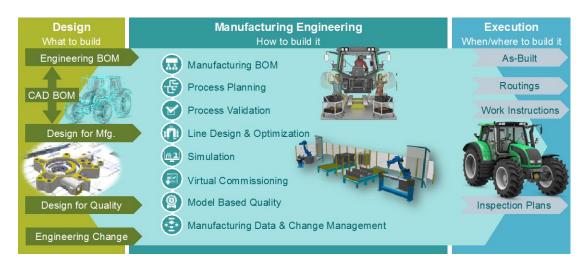


Figure 2—Siemens Solutions Help Heavy Equipment Manufacturers Enable the Digital Thread (Courtesy of Siemens Digital Industries Software)

To enable efficient collaborative manufacturing that closes the digital gap from product design to production execution and makes digitalization a reality in the heavy equipment industry, Xcelerator includes the following key capabilities:

Product Configuration provides the ability to configure a Manufacturing Bill of Materials (MBOM) into a specific customer order in a CTO business.

Manufacturing Planning for the design and implementation of the Manufacturing Bill of Process (BOP).

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³ https://sw.siemens.com/portfolio

Design & Validation that enable virtual validation of product assembly and related process plans to eliminate potential shop floor issues.

Production Support tools for optimal workplace layout development and electronic work instruction creation and automated delivery.

Optimization & Execution integration with manufacturing execution systems enabling creation of a comprehensive digital twin used to continuously optimize production.

Data & Change Management to handle the large amounts of data and changes that occur throughout the product, production, and service lifecycles.

In addition, using IIoT platforms like MindSphere, production machines and systems can provide direct, immediate feedback from the shop floor to engineering and process planning users and systems.

Summary

Heavy equipment manufacturers are confronted with increasing complexity—both in product variations and global production operations. They need effective collaborative manufacturing capabilities that integrate their product development, production, and services processes and environments. Siemens is addressing this need with its Xcelerator portfolio. Its capabilities are designed to enable heavy equipment manufacturing enterprises to efficiently manage highly complex, CTO product variations, enabling them to plan, produce, and service products as required to meet global, local, and specific customer requirements.

Siemens' Xcelerator portfolio helps companies enable closed-loop manufacturing environments that more quickly and efficiently manage change between product engineering and manufacturing so that product and production changes are kept in sync, and issues are identified and resolved earlier in the lifecycle when costs and risks are lower.

CIMdata believes that Siemens' approach and solutions for collaborative manufacturing provide a very effective platform that can help heavy equipment manufacturers build better, more effective, and more profitable businesses; improve their overall product engineering-to-production efficiency; and improve their market competitiveness. Manufacturing enterprises facing today's complexity challenges should include Siemens in their evaluation of solutions for collaborative, closed-loop manufacturing.

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Acquisitions

Accenture Acquires Organize Cloud Labs, Latin America's First ServiceNow Elite Partner Company 10 August 2020

Accenture has acquired Organize Cloud Labs, a Brazil-based company operating as ServiceNow's first Elite partner in Latin America. The acquisition strengthens Accenture's already vast information technology (IT) capabilities and deep industry experience in cloud strategy, migration, implementation

and management.

The acquisition will help large enterprises access more local expertise to innovate and transform existing processes and infrastructure, and be better equipped to respond to end-user needs as part of their digital transformation. Organize Cloud Labs holds one of the highest number of certifications in the ServiceNow platform in the region and joins Accenture's global ServiceNow practice.

"The combination of Accenture's global ServiceNow experience and the local skills acquired through Organize Cloud Labs will strengthen our ability to help local clients ensure business resilience," said Paulo Ossamu, who leads Accenture Technology in Latin America. "The acquisition will enhance our position as a leader in ServiceNow capabilities steeped in strategy, business and industry knowledge and, most importantly, strong cloud talent."

The ServiceNow platform helps organizations manage digital workflows to drive business growth and resilience with dynamic and simplified processes — enabling them to accelerate their digital transformations and enhance their employees' and customers' experience with IT-related tasks across all areas of the company.

With the acquisition, Accenture expands its regional portfolio of user experience consultancy services and ServiceNow solutions and services, including proof of concept, design and implementation, and assistance planning — providing a complete and personalized service offering.

The acquisition will also enable Accenture to expand its training and customized workshops for local clients to increase their knowledge and use of the ServiceNow platform.

"It has been an incredible and satisfying journey to help improve the lives of so many people," said Leandro Torres, founder of Organize Cloud Labs, who will lead Accenture Technology's ServiceNow practice in Latin America. "We're proud that our team has grown and expanded our knowledge of the ServiceNow platform in the Brazilian market, helping companies of all segments and sizes increase their competitiveness and delight their customers and employees. Now, as part of Accenture, we're excited to bring more opportunities to our people and enhanced capabilities to our clients."

Founded in 2014, Organize Cloud Labs has worked on more than 50 projects implemented with a customer satisfaction rating of 9.6 out of 10, according to ServiceNow's rating system.

"Beyond operating as implementation partners, Accenture also uses ServiceNow as its primary platform for enabling cross enterprise functions, such as human resources and IT services, for its 513,000 employees worldwide," said Kátia Ortiz, CEO of ServiceNow in Brazil. "Together, we can capture the learnings of Accenture's own transformation for our mutual clients in Brazil and Latin America."

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Company News

AVEVA Technology helps to Preserve the TS Queen Mary

10 August 2020

AVEVA has donated over £100,000 (GBP) worth of 3D visualization shipbuilding software to support the restoration of the TS Queen Mary, an iconic steamship built in 1933 to serve Glasgow and the West of Scotland. AVEVA will supply its purpose-built solution for shipbuilding that offers integrated 1D, 2D and 3D engineering and design tools pro bono to support the Friends of TS Queen Mary and naval architects Brookes Bell restore the vessel.

The transformation of the TS Queen Mary follows a historic life in service, during which she regularly transported more than 13,000 passengers a week throughout World War II and maintained vital transport services on the River Clyde. The last vessel of her kind in the world listed in the Core 40 fleet of the UK's National Historic Ship Register, as a ship of national pre-eminence.

HRH Princess Anne, the Princess Royal, is royal Patron of the ship. It transported King George VI, Queen Elizabeth the Queen Mother, and young Princesses Elizabeth and Margaret as well as Mrs. Eleanor Roosevelt during World War II. The ship is being restored as a heritage destination in Glasgow and will be open to members of the public in 2022.

Advanced Shipbuilding Software - Ideal for Complex Briefs and Accurate 3D Modelling Friends of TS Queen Mary and Brookes Bell chose AVEVA's shipbuilding solution to capture the complex shapes of the ship's design so that they can begin the restoration process. The software used previously was not parametric, meaning it required a great deal of manual input, increasing the risk of potential inaccuracies in models and drawings, resulting in more design iterations. The introduction of AVEVA's advanced shipbuilding software will enable the original vessel structure to be 3D-modelled accurately and in detail, seamlessly linking the model to construction and production drawings, so that shipyard production information for replacement parts can be efficiently produced.

AVEVA provides world-leading marine software solutions for the design, production and modification of large and complex projects in the offshore and shipbuilding industries. Offering the full-lifecycle solution from engineering and design, through resource management to smart production into asset performance management and monitoring and control, AVEVA's shipbuilding technology is the most complete in the market and can integrate the complete shipbuilding process. Once the design phase is completed, AVEVA will use TS Queen Mary's data – in partnership with the Friends organization – for internal training and future product testing to support the development of vessels for decades to come.

AVEVA is Committed to Sustaining Iconic Treasures

Craig Hayman, CEO of AVEVA, said: "AVEVA is incredibly proud to be supporting the Friends of TS Queen Mary with the restoration this historic vessel. The Queen Mary is a shining example of the UK's history of innovation and design and this restoration and preservation opportunity taking advantage our state-of-the-art software is an accolade that we are proud to earn. This project will not only enable us to learn more about this historic ship and its famous predecessors but will also provide great insight and know-how for the future development and restoration of similar vessels."

Andy McGibbon, Senior Naval Architect, Brookes Bell, said: "This is a very exciting project, and with AVEVA's Shipbuilding & Marine Lifecycle Solutions, we're able to completely transform the design and restoration process – driving huge improvements in design efficiency, quality, and ensuring that the design is fault free and the vessel is sympathetically restored for the benefit of future generations."

Iain Sim, Chairman of Friends of TS Queen Mary, said: "Having a fully functional 3D model is a key part of our conservation plan for TS Queen Mary. With AVEVA's support, we can improve the accuracy and efficiency of the detailed design and steel renewal phases. The commitment to TS Queen Mary from the British marine sector is overwhelming; we are truly grateful to the whole AVEVA team."

The TS Queen Mary has been described as "The last survivor of her class anywhere in the world" - a shining example of the iconic Clyde steamer class of ships. Now being preserved as a museum ship, TS Queen Mary was powered by three direct drive steam turbines, and carried 2,086 passengers, making her the largest excursion turbine on the River.

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Bentley Offers Free Crowd Simulation Software

11 August 2020

Bentley Systems is making LEGION Simulator, its crowd simulation application, and OpenBuildings Station Designer, available at no monthly cost until September 30. In a world that is trying to reopen while still in the throes of a pandemic, Bentley is hoping that at least buildings, subways and airports will be safer for the availability of its software.

Usable for hospital shift changes, office workers in high rises massing at or in elevators, and riot control, crowd simulation seems to address both of the big crises facing the nation, COVID-19 and the Black Lives Matter (BLM) protests. However, coupling LEGION with OpenBuildings Station Designer shows Bentley's focus on people movement in subways and train stations, where rush hours will reemerge as shelter-in-place orders are lifted and as people, masked or otherwise, will invariably end up closer to each other than they should be.

Planners use video to observe massing during rush hours and have, no doubt, learned about crowd behavior during normal conditions. However, planning for physical distancing rules that may have added extra gates, widened some passages while closing others, created new one-way lanes, etc., will boggle the mind and test the imagination. Should that be insufficient to plan for reopening, we have crowd simulation software like LEGION.

With people movement simulation, a building manager, hospital director, or transit official can see the effect that signage, increasing crowds and distancing will have. Will more turnstiles at exits be the answer? Or sending fewer trains to the station? Will staggering shifts, and by how much, cause the least crowded elevators?

LEGION Simulator lists its abilities to model and analyze social distancing plans, egress/ingress and evacuation plans.

"We are going through extraordinary times and change will be a constant reality in the months and years ahead," said Ken Adamson, vice president of Design Integration for Bentley. "OpenBuildings Station Designer and LEGION Simulator enable planners, architects, engineers and operators to apply digital twin approaches to solve today's design and operation challenges more quickly, efficiently and safely across

rail and metro stations, airports, and other public buildings and amenities."

A New Ball Game

Modeling people movement is literally a whole new ball game. The crowds at sporting events are planned for. AECOM, one of the biggest builders of sports stadiums, maintains a team of experts dedicated to pedestrian modeling. When Bentley acquired UK-based LEGION in 2018, AECOM was there to support it.

"The urban space team of AECOM, based in the UK, has been using LEGION software for various crowd modeling projects for more than 10 years, said Samya Ghosh, then regional director (EMEA) for transportation projects in Europe, Middle East India, and Africa for AECOM. "The crowd modeling is primarily undertaken to provide an evidence base for wider evaluation of existing and proposed rail infrastructure, public realm, sports venue and major event planning, and design or refurbishment of large institutions."

Modeling People—It's Complicated

If you considered FEA or CFD the height of sophistication, welcome to much greater heights. Both finite element analysis (FEA) and computational fluid dynamics (CFD) model systems with a continuum, rather than discrete, behavior. Particles, like grains of sand or cars on the highway, can seem erratic by comparison. Systems can have combination, particles in a fluid, like blood cells (particles) in plasma (fluid) in your veins or logs in a river.

If that's not complicated enough, let's make the particles behave like people. Now, everything changes. We are dealing with particles that react to stimuli, like signs, and follow those ahead of them in normal times and panic and stampede over them in the worst of times. They are prone to patterned social and cultural behavior, with social distancing (it varies with culture) even before COVID-19. That's a lot to put into software and it's hard to imagine that it would fit in any one platform. The product page of LEGION does claim that it will "mimic all aspects of an individual's movement including personal preferences, surrounding awareness, spatial restrictions, and perception"

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Cambashi Releases 2020 Update of CAE Market Observatory

11 August 2020

Cambashi, together with partner intrinSIM announced its latest COVID adjusted CAE / Simulation market data & forecast. The Market for CAE / Simulation software will reach \$6.1bn in 2020. The 2020 update of its CAE Market Observatory shows that the CAE market has been growing in double-digit figures and will continue on that path - except for 2020.

These growth rates illustrate that this is just the beginning of the Simulation Revolution, which will continue to grow as more and more organizations realize that Engineering Simulation is a Key Driver to the Business Drivers that enable increased competitiveness. While 2020 will present lower growth rates, and Cambashi expects negative growth from the automotive industry, growth overall is still expected to be positive. Going forward, the trends that were driving the adoption of

simulation have not gone away because of COVID-19. The need to develop new, greener versions of any kind of product will accelerate, especially in industries generating vapor trails. And COVID-19 is also opening up new opportunities, especially around modeling air flow, people movement, and space organization in any facilities where people spend significant amounts of time in close proximity to each other. The need to provide a safe working environment to get industries back to some form of normal situation could also result in new linkages between CAE and BIM vendors and CAE and IIoT/Connected Application technology providers.

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Centric Software Launches Market-Leading Digital Transformation Solutions in Russia 10 August 2020

Centric Software is bringing its best-in-class Product Lifecycle Management (PLM) solutions to brands, retailers and manufacturers in Russia, recently signing partnerships with four customers 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.

Centric PLM provides an actionable, single source of the truth for product-related data enabling fast go to market and efficient product management. Considered a necessary foundation technology for brands, retailers and manufacturers, Centric PLM enables streamlined digital collaboration across internal and external teams in order to drive product innovation, speed time to market and optimize costs. Centric Software's PLM solutions have been developed hand-in-hand with 370+ companies representing 1,350+ brands worldwide, combining Silicon Valley expertise with industry best practices.

"Fashion and retail companies in Russia realize that digital transformation is imperative, especially in the wake of the massive disruption all markets are facing," explains Konstantin Galkin, Sales Director in Russian Federation at Centric Software. "Companies have suddenly transitioned to remote collaboration and are facing considerable uncertainty. They are looking for ways to optimize efficiency and productivity in order to cope with pressure on product margins and operating capital. Having the right technology in place to support these changes will determine whether businesses survive."

Centric Software has signed partnerships with four customers in Russia since entering the region towards the end of 2019. Leading fast fashion company LIMÉ, casual wear brand Finn Flare, young fashion brand 12Storeez and the leader of Russian and European labor protection market, developer, producer and supplier of workwear, safety footwear, individual PPE and other accompanying goods, Vostok-Service have selected Centric PLM to support strategic digital transformation goals such as creating a foundation for growth, reducing time to market while maintaining high quality standards, and facilitating seamless team collaboration with industry best practices and the newest technologies.

"Now, more than ever, better pre-season planning is crucial," Galkin continues. "Real-time online collaboration with suppliers enables businesses to be more agile and adapt rapidly to unpredictable circumstances. Companies need a big-picture view when building collections and the ability to accurately run virtual 'what-if' scenarios before committing capital and resources to development and production. Centric Software PLM enables the achievement of these goals and gives companies a firm

foundation to react to market shifts. Our customer-partners in Russia see Centric PLM as a critical tool for future-proofing their businesses," he adds.

We're delighted that so quickly after arriving to serve the Russian market, four innovative companies in Russia have selected Centric Software as a trusted partner," says Chris Groves, President and CEO of Centric Software. "Centric PLM has a crucial part to play in building a strong digital foundation for Russian companies now and in the future, and we look forward to forging new relationships in Russia."

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ModuleWorks Donates Computers for Learning

14 August 2020

The Aachen based CAD/CAM software company, ModuleWorks, has donated PCs and notebooks to the Volkshochschule (VHS) Aachen. The donation enables young adults at the college to continue their education during the corona crisis.

Thanks to modern technology, many young people have been able to continue learning from home even though educational institutes have been forced to close. But not everyone has the money to afford their own computer, especially people who live with social and financial difficulties. Without a computer, it is impossible to keep up with online learning and many people are in danger of falling behind due to lack of resources. This is why Marcel Phillip, the Lord Mayor of Aachen, appealed to local companies to donate computers to VHS Aachen. ModuleWorks responded with 7 ready-to-use desktop computers and notebooks.

VHS Aachen gives young people the invaluable chance to retake their school exams and get the important qualifications that are vital for finding employment or a place of further education. The donated computers are a big step towards giving everyone an equal opportunity to push ahead with their learning.

"These are very challenging times for everyone in the education system and we are very pleased to support this initiative and help people gain access to the resources they need", says Lothar Glasmacher, Head of Additive & Process Technologies at ModuleWorks.

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Nemetschek - The Power of Paradigm Shifts

12 August 2020

Any innovation in today's world requires an industry that is stuck in an old paradigm for too long and the development of a core technology challenging that paradigm. The Nemetschek Group believes that it is about time for a paradigm shift in the construction industry.

The construction industry is the largest industry in the world. Yet it has been practically stagnant with one percent productivity growth annually over the past two decades. But aren't we in the age of digital transformation? An age where anything seems possible and other industries such as transportation, manufacturing, or even agriculture multiply their productivity? Why has this not been reflected in the construction industry as well?

Processes need to be challenged occasionally. That's when old paradigms are thrown overboard to fundamentally change an approach. iPhone, SpaceX reusable rockets, or something as revolutionary as international money transfers without actually sending any money across the borders are just some examples. So, what is it in the construction industry that needs challenging?

We are seeing impressive, creative signature buildings rise across the globe. But we are also seeing most of these being finished later than planned, with costs exploding. "Buildings are becoming more and more complex, involving many professions. Currently, massive time on a construction project is spent on the coordination between architects, structural and MEP engineers, energy experts, and others," says Viktor Várkonyi, Chief Division Officer of the Planning & Design Division and member of the Executive Board of the Nemetschek Group. "An architect wasting 30 percent of her time is too much. It is clearly time to challenge the industry and call for a paradigm shift."

Looking at the development that has taken place over the past 30 years, the direction becomes clear. In the late 90s, the industry collaborated by sharing and exchanging files. Then the professions started to collaborate on the same file or data set by reserving and exchanging individual elements or sets of elements. And today, design professionals are still working in silos, in a data-protective way, rather than agile in cross-disciplinary teams.

"The industry needs to move to an integrated design approach. This is not about losing one's data sovereignty, it is about forming teams to improve workflows and outcomes," Viktor Várkonyi explains. "All disciplines can work with their preferred solution and on their own tasks and parameters, but in a centralized model."

This disruptive approach will significantly change the way the different design professions work together. Today, about five percent of architects and structural engineers already work in an integrated design manner. They are the role models for what is required to make the construction industry accelerate - finally.

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SAP - Customer Success in Digital Transformation Does Not Have to Be One Giant Leap

12 August 2020

An SAP customer in the telecommunications industry said, "We are now embracing new technology and driving efficiencies through digitalization, advanced analytics, and artificial intelligence (AI) as we are evolving into a more innovative and agile organization."

This statement clearly highlights the importance of technology as an enabler for the digital transformation of companies. But helping customers succeed always starts with the customer, not technology.

In times of COVID-19, businesses and entire industries are more disrupted than ever as they try to adjust to the new normal, making digital transformation an even greater opportunity to innovate and find new ways to effectively and efficiently work with customers.

IDC forecasts that companies will invest US\$2.3 trillion in digital transformation efforts by 2023. The question is how to become an intelligent enterprise that embraces agility, fosters nimble ways of working, and maximizes the value of digital technologies to help organizations evolve even stronger from these unprecedented times.

Embracing a Mindset Shift

The answer lies in a mindset shift around business outcomes rather than rapid adoption for the sake of innovation.

A McKinsey Global Survey evidences this idea and suggests that the only way to transform is through ruthless focus on a clear set of objectives: "With successful digital transformations, [...] organizations keep efforts focused on a few digital themes — that is, the high-level objectives for the

transformation, such as driving innovation, improving productivity, or reshaping an end-to-end customer journey — that are tied to business outcomes, rather than pursuing many different agendas."

Companies must realize that technology alone doesn't spur a successful transformation; it's the calculated and guided implementation of technologies that help move a business toward specific outcomes, objectives, and customer experiences.

Adaire Fox-Martin, member of the Executive Board of SAP SE, Customer Success, suggests that companies should realize that the customer is focused solely on outcomes, and businesses should do the same when pursuing a new mindset during digital transformation.

"Customers do not come to SAP to buy technology. They come to buy outcomes and value," she says. "The whole premise of Customer First is about keeping our promise to deliver valuable business outcomes to customers."

This mindset shift can be seen within SAP as we undergo a transformation resulting in a Customer Success board area that has a resolute focus on the success of both customers and SAP employees. The team maintains an unwavering commitment to providing extraordinary experiences while recognizing the unique business demands of each customer.

Choosing the Right Partner to Drive Business Outcomes

Organizations are looking for partners to lead, advise, and shape this journey together with them and ultimately drive their business outcomes. "SAP plays a pivotal role in enabling us to achieve our transformation goals by providing the core platform and its maintenance and service support as an enabler for that," highlights an SAP customer in Australia.

Partnership, direction, and knowledge are also important for customer Poongsan Corporation, an international copper manufacturer based in South Korea: "With expert support, Poongsan built a detailed, step-by-step road map to optimize and accelerate its migration to an intelligent ERP. Now, everyone – from our planners and operators to our developers and IT architects – is prepared to execute toward our digital journey."

Customer First and the resulting engagement create an environment where customer outcomes become the overarching focus. Being able to bring tangible direction and action driven by the customers' data and insights places any organization in a strong position to move its digital transformation forward.

Identify Opportunities to Innovate, Improve, and Maximize Value

By working with companies that can inform innovation and business process improvements, such as SAP, priorities can be set on relentlessly driving business outcomes. The SAP Innovation and Optimization Pathfinder service for SAP ERP provides an interactive, simple-to-consume report with all of the personalized opportunities to optimize business and IT processes. This way, stakeholders are on the same page and have a calculated plan to tackle transformation head on.

Using services from SAP Enterprise Support and the pathfinder report, paper pulp maker CENIBRA in Brazil wanted to accelerate its digital transformation with a next-generation business suite: "Using SAP Enterprise Support, we are preparing the ground for a successful migration to SAP S/4HANA. And we now better understand the wide-ranging benefits our new digital core will bring to the business."

BYTON, another SAP customer, builds fully connected electric cars from the ground up. Its goal is to bring a new level of intelligence to the smart car by marrying automotive engineering with digital innovation to create a next-generation driver experience. With a focus on innovation and speed, its digital transformation needed a capable partner: With deployment guidance and follow-up support, BYTON reduced the IT costs of its digital transformation by at least 10 percent.

These customer examples show that transformation requires a mindset shift, ruthless focus, and the right partner with experience and capabilities – and does not have to start with massive shifts in focus. And sometimes a starting point can be found closer to home. SAP delivers an opportunity to easily obtain insights about innovation, business process, and IT potential. From this, priorities can be set and focused on to drive business outcomes. The insight is delivered by SAP Innovation and Optimization Pathfinder for SAP ERP and SAP S/4HANA, a simple-to-consume, interactive next-generation report free of charge for every SAP maintenance customer. It addresses different stakeholders in the organization to get everyone on the same page — an important starting point for every transformation.

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SEMI Partners with Global Partners to offer Apprenticeship Program

12 August 2020

SEMI, the industry association serving the global electronics design and manufacturing supply chain, today launched a new collaborative apprenticeship program to make it easier for companies to offer training and for more workers to pursue careers in electronics. The competency-based SEMI Industry Approved Apprenticeship Program (IAAP) is designed to identify skills gaps and deliver targeted training that efficiently meets industry employers' hiring needs.

SEMI developed the IAAP in partnership with GLOBALFOUNDRIES® (GF®), the largest pure-play semiconductor foundry in the U.S. and the world's leading specialty foundry. Designed to be scaled to meet industry demand for technicians, the program leverages SEMI's Unified Competency Model (UCM), which was formed with industry input as a new skills standard and is endorsed by the U.S. Department of Labor Employment and Training Administration (USDOL-ETA). The UCM is posted on DOL-ETA's Competency Model Clearinghouse.

"GLOBALFOUNDRIES has long been committed to building educational partnerships that benefit both our employees and the region, particularly in developing a highly skilled workforce to ensure our industry and the U.S. remains at the forefront of innovation for years to come," said Ron Sampson, senior vice president and general manager of U.S. Fab Operations at GF. "Through SEMI's new Industry Approved Apprenticeship Program, we look forward to helping our employees advance their careers, while playing an important role in workforce training and boosting the semiconductor manufacturing talent pool."

"The IAAP is designed to help the microelectronics industry and advanced manufacturers overcome the talent shortage by enabling companies to fill skills gaps more effectively and at lower cost," said Mike Russo, vice president of Industry Advancement and Government Programs at SEMI. "SEMI will continue to work to ensure the IAAP lays a path for employers to pursue government-registered apprenticeship programs and qualify for reimbursement of related training expenses."

Hudson Valley Community College (HVCC) will offer the apprenticeship program courses, the first certified under the SEMI Certs program, online. The course curriculum is aligned with UCM to ensure course curriculum supports the development of skills required by the electronics industry.

"We are excited to be a partner in this pilot program that is expected to graduate approximately 50 apprentices by the end of this year and more than 100 apprentices by the end of 2021," said Roger Ramsammy, president of Hudson Valley Community College. "Hudson Valley's participation in the SEMI Certs program has ensured our courses are aligned with industry requirements and that participants receive college credits to help them pursue related degrees and support career laddering. In addition, we hope the program will ultimately be a New York State Registered Apprenticeship Program,

providing access to tuition reimbursement for Required Technical Training."

Along with GLOBALFOUNDRIES and HVCC, SEMI partnered with SUNY Polytechnic Institute, the Manufacturing Association of Central New York (MACNY) and the Center for Economic Growth (CEG), a nonprofit economic and business development organization that serves as the primary point of contact for businesses interested in growing in or moving to New York's eight-county capital region, to develop the apprenticeship program.

The apprentice program marks a milestone in the evolution of SEMI WorksTM, the first U.S. electronics workforce development program developed under a partnership with the National Science Foundation Advanced Technological Education (NSF-ATE) Program, the USDOL-ETA and academic partner SUNY Polytechnic Institute in New York.

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Financial News

Aspen Technology Announces Financial Results for the Fourth Quarter and Fiscal 2020

13 August 2020

Aspen Technology, Inc. announced financial results for its fourth quarter of fiscal year 2020 ended June 30, 2020.

"AspenTech delivered solid fourth quarter results that exceeded expectations in the midst of unprecedented economic conditions," said Antonio Pietri, President and Chief Executive Officer of Aspen Technology. "Customers in our core markets continued to make significant investments in AspenTech products despite the challenges facing their own businesses. Companies in the process and other capital intensive industries increasingly recognize that investing in digitalization initiatives is essential to long-term financial and operational success and we believe we are well-positioned to benefit from this trend."

Pietri continued, "We are furthering our commitment to our customers through today's announcement of the new AIoT Hub and our investment in the next generation of hybrid modeling software capabilities, planned for release in the coming months. We intend to introduce contextual artificial intelligence into our core products to enable better informed and more accurate decisions to improve the operating performance of assets. We are confident that these innovations will further extend the value AspenTech delivers for its customers."

Fourth Quarter and Fiscal Year 2020 Recent Business Highlights

Annual spend, which the company defines as the annualized value of all term license and maintenance contracts at the end of the quarter, was approximately \$593 million at the end of the fourth quarter of fiscal 2020, which increased 9.6% compared to the fourth quarter of fiscal 2019 and 3.1% sequentially.

AspenTech repurchased approximately 1.3 million shares of its common stock for \$150 million in fiscal year 2020.

Summary of Fourth Quarter Fiscal Year 2020 Financial Results

AspenTech's total revenue of \$199.3 million included:

License revenue, which represents the portion of a term license agreement allocated to the initial license,

was \$147.2 million in the fourth quarter of fiscal 2020, compared to \$148.5 million in the fourth quarter of fiscal 2019.

Maintenance revenue, which represents the portion of the term license agreement related to on-going support and the right to future product enhancements, was \$45.7 million in the fourth quarter of fiscal 2020, compared to \$39.5 million in the fourth quarter of fiscal 2019.

Services and other revenue was \$6.4 million in the fourth quarter of fiscal 2020, compared to \$7.8 million in the fourth quarter of fiscal 2019.

For the quarter ended June 30, 2020, AspenTech reported income from operations of \$113.7 million, compared to income from operations of \$111.2 million for the quarter ended June 30, 2019.

Net income was \$97.6 million for the quarter ended June 30, 2020, leading to net income per share of \$1.43, compared to net income per share of \$1.49 in the same period last fiscal year.

Non-GAAP income from operations, was \$122.9 million for the fourth quarter of fiscal 2020, compared to non-GAAP income from operations of \$119.9 million in the same period last fiscal year. Non-GAAP net income was \$104.9 million, or \$1.54 per share, for the fourth quarter of fiscal 2020, compared to non-GAAP net income of \$110.7 million, or \$1.59 per share, in the same period last fiscal year. These non-GAAP results add back the impact of stock-based compensation expense, amortization of intangibles and acquisition-related fees. A reconciliation of GAAP to non-GAAP results is presented in the financial tables included in this press release.

AspenTech had cash and cash equivalents of \$287.8 million and total borrowings, net of debt issuance costs, of \$427.5 million at June 30, 2020.

During the fourth quarter, the company generated \$99.7 million in cash flow from operations and \$99.5 million in free cash flow. Free cash flow is calculated as net cash provided by operating activities adjusted for the net impact of:

purchases of property, equipment and leasehold improvements; payments for capitalized computer software development costs, and other nonrecurring items, such as acquisition-related payments.

Summary of Fiscal Year 2020 Financial Results

AspenTech's total revenue of \$590.2 million decreased 1.0% from \$598.3 million for fiscal year 2019.

License revenue, was \$377.2 million, a decrease from \$404.1 million for fiscal year 2019.

Maintenance revenue, was \$179.8 million, an increase from \$165.4 million for fiscal year 2019.

Services and other revenue was \$33.2 million, an increase from \$28.8 million for fiscal year 2019.

For the fiscal year ended June 30, 2020, AspenTech reported income from operations of \$248.8 million, compared to income from operations of \$282.8 million for fiscal year 2019.

Net income was \$225.7 million for the fiscal year ended June 30, 2020, leading to net income per share of \$3.28, compared to net income per share of \$3.71 for fiscal year 2019.

Non-GAAP income from operations was \$287.0 million for fiscal year 2020, compared to non-GAAP income from operations of \$316.3 million for fiscal year 2019. Non-GAAP net income was \$255.9 million, or \$3.72 per share, for fiscal year 2020, compared to non-GAAP net income of \$289.2 million, or \$4.09 per share, for fiscal year 2019.

For the fiscal year ended June 30, 2020, the company generated \$243.3 million in cash flow from operations and \$243.1 million in free cash flow.

Business Outlook

Based on information as of today, August 12, 2020, Aspen Technology is issuing the following guidance for fiscal year 2021:

Annual spend growth of 6-9% year-over-year

Free cash flow of \$260 to \$270 million

Total bookings of \$770 to \$850 million

Total revenue of \$704 to \$754 million

GAAP total expense of \$372 to \$377 million

Non-GAAP total expense of \$330 to \$335 million

GAAP operating income of \$332 to \$377 million

Non-GAAP operating income of \$374 to \$420 million

GAAP net income of \$290 to \$327 million

Non-GAAP net income of \$324 to \$360 million

GAAP net income per share of \$4.29 to \$4.83

Non-GAAP net income per share of \$4.78 to \$5.32

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Campfire Interactive Secures Investment Round

15 June 2020

Campfire Interactive, Inc. (Campfire) is pleased to announce the closing of an equity capital round led by Cincinnati-based RKCA. Campfire also named growth company veteran Dan Meyer to the newly created position of Chief Operating Officer. Meyer brings over twenty years of software executive experience, most of which involved products sold to the automotive industry. The new investment and addition to the executive team enables Campfire to expand resources and activities in product development, customer success, sales, and marketing in pursuit of the company's growth plan.

Campfire's strong track record of customer satisfaction and proven, scalable product, which delivers high ROI to customers, enabled the company to attract capital from RKCA. The company has operated profitably for many years with no outside capital beyond seed investment raised at its founding. Commented Brent Rippe, Managing Partner of RKCA, "We were introduced to Campfire exactly a year ago and were immediately impressed with the quality of the team and software. We observed the company make tremendous progress adding premium brand customers and thousands of new users over the past year for over 50% growth and are thrilled to be selected as the partner to help fund further momentum. We really wanted to invest in the team to allow the company to continue to meet customer expectations and realize market demands."

Campfire co-founders Pradeep Seneviratne and Sarvajit "Sarge" Sinha retain ownership of the company and will continue to serve in their roles as the senior leadership team with the addition of Meyer. "The movement away from Microsoft Excel-based business planning and forecasting is accelerating; Campfire has a huge customer pipeline. This investment round is essential to act on the enormous opportunity for Campfire software while maintaining the high level of attention and support our customers have come to expect. We plan on doubling the size of our team in the next twelve months." said Pradeep Seneviratne, Campfire President and CEO. He continued, "I have known Dan for a long

time, and he brings significant experience leading teams and scaling businesses in high growth technology-based companies serving the manufacturing sector. He assisted Campfire in selecting RKCA and raising growth capital. Now we welcome him to our team at a time when sales, marketing and business partnership activities take such importance."

"Campfire is so well positioned for market leadership. The product has repeatedly proven to deliver in excess of 80x payback in terms of annual profit improvement and cost savings. We compete and win against the largest enterprise software and business cloud solution providers. I'm excited to work with Pradeep and the Campfire team to expand the company and promote brand awareness so we can capitalize on this strong position," added Meyer.

Customers depend on Campfire for three of the most important business processes in a company – profitability forecasting, quote life cycle management and project portfolio management. Well over 10,000 users manage over \$150 billion in forecasts, quotes and costing in Campfire. Stoneridge, Inc., a leading designer and manufacturer of highly engineered electrical and electronic vehicle systems for the automotive, commercial vehicle and off-highway markets, has recently adopted Campfire. "Campfire has become the standard for product profitability management within the automotive supply chain," said Jon DeGaynor, President and CEO of Stoneridge, Inc. "We understand the value of data and precise information, and leveraging the Campfire solution will support our continued transformation of the company and help drive financial performance." Tom Beach, Executive Director, Business Planning, of Stoneridge, Inc., added, "Having implemented and leveraged Campfire at other companies, I have firsthand experience with the functionality of Campfire and the team's knowledge of the automotive business. At Stoneridge, we look forward to benefitting from the power of Campfire's digital financial backbone."

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Implementation Investments

Automotive Supplier Batz Group Shifts to Platform Strategy with Dassault Systemes

14 August 2020

Dassault Systèmes announced that Batz Group, a products and services supplier for the automotive sector, has deployed the 3DEXPERIENCE platform. Spain-based Batz Group has been a Dassault Systèmes customer for many years, and decided to migrate all applications to the platform to improve its business processes and become more competitive in the global market.

As the transportation and mobility industry shifts to new technologies and increases vehicle complexity, suppliers like Batz Group must find ways to strengthen their capabilities and resources in order to quickly provide major worldwide original equipment manufacturers with the high-quality die and systems that reflect this evolution. Batz Group will use the "Bid to Win" industry solution experience based on the 3DEXPERIENCE platform to increase its agility and process control, improve the quality and safety of its automotive tooling and control systems, and reduce its time to market.

Batz Group can integrate project management on one digital platform, removing the barriers that divide stakeholders in different departments and enabling them to work more quickly and efficiently. Teams can securely collaborate in real time throughout the product lifecycle, and access and share up-to-date information on development changes, product data, and requirements management with their customers and suppliers involved in a project.

"The supplier business is becoming more competitive, so we decided to integrate document management, CAD management, materials lists and project management into Dassault Systèmes' 3DEXPERIENCE platform," said Jose Angel Fernandez Gutiérrez, CAD/CAM & PLM Manager, Batz Group. "We've experienced significant improvements since implementing it: more orders, fast access to project data, reduced production times and less risk of lower product quality or increased production costs. Our products get to market faster."

"Automotive industry suppliers are working in an era of unprecedented opportunities to thrive, yet growing global competition and constantly changing customer needs can lead to lost business if unprepared," said Laurence Montanari, Vice President, Transportation & Mobility Industry, Dassault Systèmes. "The 3DEXPERIENCE platform enables suppliers like Batz Group to overcome industry challenges and transform market opportunities into marketplace advantages."

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Cotton Heritage Teams Up With Tukatech for Digital Design

14 August 2020

Tukatech announced that the premium-blanks company Cotton Heritage, headquartered in Commerce, Calif., was working with the 3D visualizer. Nikhil Sachdeva, Cotton Heritage's marketing manager, said that the 3D visualizer has served as a way for his customers to demonstrate how their graphics and designs look on a Cotton Heritage blank. "This was made for the customers in mind," Sachdeva said. "It enables them to sell to their customers."

Cotton Heritage uploaded templates to the 3D visualizer for several of its best-selling blanks, such as the MC1082, a short-sleeve crew-neck T-shirt, and the LC 1026, a boyfriend T-shirt. Cotton Heritage's clients can then use the visualizer's tools to make a model of how their designs would look on a Cotton Heritage blank, Sachdeva said.

"It gives a total 3D view of the garment and shows what it will look like," he said. "You can see where the curves are on the garment. It's a more powerful tool than just using flats."

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Dancing Leopard selects Coats Digital VisionPLM to support rapid growth

14 August 2020

Fast-growing womenswear brand, Dancing Leopard, looks to the future with Coats Digital's Product Lifecycle Management solution, VisionPLM, to optimise, accelerate and connect their collection management, product development, and sourcing processes, increasing visibility, coordination and control.

Created in 2009, Dancing Leopard is a womenswear brand inspired heavily by its Indian and Balearic heritage. Through their garments, that uniquely combine vibrant prints with flowing fabrics, and their engaging digital presence, Dancing Leopard aim to inspire and empower women to be confident.

The garments are produced in a small factory in Delhi of which both companies share a long term relationship, while importantly, ensuring fair-trade standards are met.

SUPPORTING GROWTH

The team at Dancing Leopard recognised that they had outgrown their largely manual systems and processes which had successfully got them to this point, but were becoming increasingly time

consuming and unable to provide the level of visibility, coordination and control necessary for their rapidly growing business. To help provide firm foundations for continued growth in the key areas of product development and sourcing, the team at Dancing Leopard searched for a PLM partner that could provide the essential combination of PLM functionality and industry best practice expertise.

Jade Hildreth, Founder and Director at Dancing Leopard Clothing said,

The journey we've been on to get the brand to where it is today has been amazing, but to support accelerated growth and to respond to the challenges of the industry, we needed to invest in a PLM solution. One particular objective is to improve the efficiency of the team, and replacing numerous and time-consuming spreadsheets with best practice digitized processes. This will reduce firefighting and instead allow time to focus on customer centric products, prints and fabrics, and key initiatives that will make a significant difference to the brand and the environment. In addition to this, process improvements, seeing 'one version of the truth' and closer supply chain management, mean that we will be able to plan and manage far more effectively. This will reduce the pressure on our supply chain partners and ensure that products meet delivery windows, and reach our customers far faster.

VisionPLM is a fashion specific web-based solution which is tailored to suit the evolving needs of all businesses sizes, and is available on a Software as a Subscription (SaaS) basis, removing the need for additional IT hardware, infrastructure and expertise and allowing the solution to be scaled.

Dancing Leopard's VisionPLM solution will include modules covering key business processes from initial design of products and prints; through development, sampling and costing to material and vendor sourcing and management; and end to end critical path management.

Elliot Hurst, Business Development Executive at Coats Digital, said,

"It's great to be working with Dancing Leopard, who are such an inspiring brand and have exciting plans for the future! Through several discussions we were quickly able to develop a strong understanding of their key business requirements, and it became quickly apparent that VisionPLM is a solution ideally suited to the immediate and future needs of their business. We look forward to working with the Dancing Leopard team on their digital transformation journey; and are confident that the unique 'functional footprint' of VisionPLM, from design inception to delivery, coupled with our wealth of industry experience will ensure a successful project."

Jade Hildreth, Founder and Director at Dancing Leopard Clothing, said,

"Before VisionPLM, aligning material availability to production was a real challenge, which meant that we would be more reactive than proactive. With VisionPLM, we have visibility of material stocks, designs and orders in a single solution, enabling us to quickly react to new trends and prints off catwalk and inspiration trips, and accelerate these through the product development cycle into production. Moreover, material requirement planning modules ensure that we are purchasing the right amounts of fabrics, benefiting from reduced purchasing costs, while integrated critical path management tools enable us to seamlessly coordinate this whole process".

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Nissan Moves to Oracle Cloud Infrastructure for High-Performance Computing

11 August 2020

Oracle announced that Nissan Motor Co., Ltd is migrating its on-premises, high-performance computing (HPC) workloads to Oracle Cloud Infrastructure. Nissan relies on a digital product design process to

make quick and critical design decisions to improve the fuel efficiency, reliability and safety of its cars. By moving its performance and latency sensitive-engineering simulation workloads to Oracle Cloud, Nissan will be able to speed the design and testing of new cars.

Specifically, Nissan uses software-based Computational Fluid Dynamics (CFD) and structural simulation techniques to design and test cars for external aerodynamics and structural failures. Oracle Cloud Infrastructure's compute, networking, and storage services optimized for HPC applications will allow Nissan to benefit from the industry's first and only bare-metal HPC solution with RDMA networking as it innovates cars. Nissan anticipates higher performance and lowers costs with the ability to easily run their engineering simulation workloads in the cloud.

"Nissan is a leader in adopting cloud-based high performance computing for large scale workloads such as safety and CFD simulations," said Bing Xu, General Manager, Engineering Systems Department, Nissan Motor Co, Ltd. "We selected Oracle Cloud Infrastructure's HPC solutions to meet the challenges of increased simulation demand under constant cost savings pressure. I believe Oracle will bring significant ROI to Nissan."

Running large CFD and structural simulations requires tremendous amounts of compute power. Nissan has adopted a cloud-first strategy for its HPC platform to ensure its engineers always have the compute capacity needed to run their complex simulations. While the HPC market has been traditionally underserved by public cloud providers, Oracle Cloud Infrastructure delivers an industry-first Intel Xeon based bare-metal compute infrastructure with RDMA cluster networking, offering latencies of under two microseconds and 100 Gbps bandwidth, enabling large scale HPC migrations to the cloud.

Nissan is one of the first automotive OEMs to leverage GPU technology in Oracle Cloud Infrastructure for structural simulation and remote visualization. By using Oracle's bare-metal GPU-accelerated hardware, Nissan reduces the cost and overhead of large data transfer, while ensuring that all the data generated by simulation jobs can easily be viewed in 3D OpenGL format in the cloud.

In addition to HPC workloads, Oracle Cloud Infrastructure supports a mature and diverse ISV application ecosystem across different domains such as CFD and structural simulation. This helps deliver a price/performance ratio that is more compelling than running on-premises or compared to other public cloud providers. Oracle's unique cloud HPC solutions enable customers to run performance intensive HPC jobs on demand instead of having to buy fixed, on-premises capacity. With Oracle Cloud Infrastructure, Nissan can launch tens of thousands of cores and GPU-based high-end visualization servers with tremendous flexibility, enabling them to dynamically change compute and remote 3D visualization based on the needs of its engineers.

"Oracle is excited to work alongside Nissan to change digital product design and development, and help them build the next generation of award-winning vehicles," said Clay Magouyrk, executive vice president, Oracle Cloud Infrastructure. "Our mission has always been to build the best cloud infrastructure for enterprises, including computationally intensive and extremely latency sensitive workloads that organizations like Nissan need to build the next generation of vehicles."

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Sopheon to Help Mondelez International Transform Global Enterprise Innovation Management 12 August 2020

Sopheon is partnering with global snacking leader Mondelēz International, Inc. (NASDAQ: MDLZ) to transform its innovation and commercialization processes and portfolios. Sopheon will collaborate with Mondelēz in an accelerated deployment program that will enable Mondelēz to go live with Sopheon's

SaaS-based Accolade® platform and replace two global legacy systems before the end of the year.

According to Andre Dias Alves da Silva, Director Innovation I2M/IIM at Mondelēz, "Even in a time of unprecedented global disruption, Mondelēz continues to focus on its long-term strategy to accelerate consumer-centric growth. This means we need a global innovation platform to drive portfolio transparency, speed commercialization, and accelerate our response to changing market conditions, as well as a trusted partner who truly understands CPG. We have selected Sopheon as that partner and look forward to collaborating with them to deploy Accolade and address these needs in a very short timeline."

The initial phases of deployment will automate critical aspects of Mondelēz's portfolio management, Stage-Gate® governance, and resource planning processes. These initial capabilities will provide 100 percent global visibility to all new product initiatives in the portfolio, making it easier to focus limited resources on the highest-value products. They will also reduce the amount of time required by initiative leaders and cross-functional teams for successful commercialization and lay a foundation for future phases of deployment that focus on project execution.

Sopheon CEO, Andy Michuda, added: "Sopheon is delighted to partner with Mondelēz, and to extend our market leadership in the CPG industry. For nearly 20 years, Sopheon has been the go-to company for enterprise innovation management in CPG, due to our deep domain expertise, best practices, and depth of configurability of our software that is required by large, global consumer firms. We look forward to great success and partnership with Mondelēz, and to helping them achieve their organic growth goals for many years to come.

Accolade is Sopheon's award-winning innovation management software that connects people, systems and information across departments and functions. This cross-functional collaboration and synchronization results in trusted, timely data for faster, better, and more dynamic decision making for the world's largest and most complex enterprises. Accolade has proven its value to thousands of global users by reducing costs, increasing portfolio value, reducing time-to-market, and boosting initiative and product success.

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Swedish Defence Materiel Administration using Eurostep for implementation of PLCS standard 13 August 2020

Eurostep, the leader in secure PLM collaboration and controlled data sharing, has been selected by FMV to implement the Swedish Defence PLCS DEXs into the business of FMV. Eurostep will also represent FMV in various standardization forums related to the maintenance and development of the standard.

The extensive contract, that commenced in June 2020, is part of FMV's ambition to streamline its handling of product related information with the goal to reduce costs, reduce lead times, and increase quality.

Acquiring, operating, and maintaining a vast portfolio of complex weapon systems in an extended enterprise requires digitalization and dedicated solutions. It also requires controlled data sharing amongst the stakeholders involved; system suppliers, operators, and maintenance organizations/contractors. PLCS (ISO 10303 AP239) and PLCS based working methods make it possible to exchange product data in a common, open, neutral, and standardized way enabling an unbroken flow, a digital thread, of information from a product lifecycle perspective, thereby eliminating friction and cost in collaboration both internally and externally.

FMV is the main provider of materiel and services to the Swedish Armed Forces. FMV has for many years promoted the development and application of standards based collaboration. FMV is in good company with many other defence authorities in Europe and globally where the issues of collaboration are high up on their agenda as they need to improve their operations and cut cost.

Eurostep is proud to be selected for this important assignment, even more so as it addresses such an important issue not only to FMV but also for industry as a whole, says Håkan Kårdén, VP Marketing, Eurostep Group.

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Product News

Altair PBS Professional Offers Up to Tenfold Faster Performance

11 August 2020

Altair announced a major update to Altair® PBS Professional®, the market-leading HPC workload manager.

New features within the PBS Professional base scheduler enable customers to increase throughput as much as tenfold, manage costs and resources more accurately, and easily access efficient scaling through cloud bursting.

"For our users, the latest version of PBS Professional represents a significant increase in functionality and value. It will provide customers with the flexibility, scalability, and efficiency they need to flourish in a uniquely dynamic operating environment," said Sam Mahalingam, chief technology officer at Altair. "The addition of a hierarchical structure makes PBS Professional a truly full-spectrum proposition – accommodating workloads ranging from multi-core, long-running HPC jobs to high-throughput workloads that could potentially involve tens of millions of high-frequency jobs in a single day."

With the latest iteration of PBS Professional, users benefit from:

- Massively high throughput scheduling, with the flexibility to accommodate more diverse and dynamic workloads via hierarchical scheduling. PBS Professional now embraces both high-performance and high-throughput computing workloads. Users can employ a "personal" scheduler to queue their own jobs sequentially, all within the same overall scheduler.
- The ability to simulate workloads to find the most productive approach to scaling HPC resources.
- Allocation management to control and optimize budgets across multiple sites, departments, and HPC clusters by scheduling resources to match an organization's unique profile of costs and resources.
- Cloud bursting via a graphical user interface (GUI) that requires no specialist expertise, with the freedom to leverage on-demand resources from both public and private clouds.

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Aspen Technology Announces New AloT Hub to Unlock Value of Data from Across the Digital Enterprise

13 August 2020

Aspen Technology, Inc. announced a new AIoT Hub, a result of the integration of its recent investments in Industry 4.0 capabilities. The new AIoT Hub enables seamless and flexible data mobility and integration across the enterprise from sensors to the edge and cloud and accelerates the delivery of visualization and insights for capital-intensive industries. This AIoT Hub is also the cloud-ready environment for AspenTech's next-generation Industrial AI products and solutions.

The new hub addresses the rapid convergence of IT and OT that customers are experiencing, significantly reducing the risks and time to market for introducing AI to complex operations. Unlike generic AI platforms, which require a massive data integration effort and an army of data scientists to implement, this new approach can seamlessly integrate industrial data sources and deliver actionable insights faster than ever before with ready-to-use and built-for-industry applications. It is also extensible, enabling customers and partners to create their own custom applications.

The AspenTech AIoT Hub consists of several well established and innovative technologies. At its core is Aspen InfoPlus.21 (IP.21) the information management system for real-time industrial processes, which collects large volumes of process data for reporting and analysis. It also integrates technologies from several acquisitions in recent years, including the cloud native connectivity from RtTech Software, the cloud capabilities and ability to assemble and deploy AI-driven IoT applications from Mnubo, and the enterprise insights and visualization features from Sabisu.

"Market volatility means that capital intensive industries have to be more agile than ever before to survive and thrive in every cycle," said Antonio Pietri, President and CEO of Aspen Technology. "Access to analytics and insights is a critical need when making business decisions, yet efforts to mine pools of data across the enterprise are often stalled by the challenges of data collection and integration, with promised business insights and agility never materializing. This new hub enables us to accelerate the delivery of the promised insights and agility, built on proven technology and expertise."

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FASTSUITE Edition 2 For Robot-Supported Surface Processes

13 August 2020

CENIT extends the technology portfolio covered by FASTSUITE Edition 2 with new functionalities that now also include the surface-based applications for painting, spraying and coating.

Surface-based applications are among the most demanding tasks in automotive and aerospace production. They serve a variety of processes, starting with body protection and surface preparation to the creation of the final appearance, which ultimately has a strong influence on the perception of the products. The technology must thus meet the highest standards of quality and efficiency.

The use of robots for spraying applications has already proven itself in practice. One of the main advantages is their ability to follow complex three-dimensional paths. Manual processes cannot guarantee this with the same precision and iteration.

Thanks to new surface-based functionalities, FASTSUITE Edition 2 enables manufacturers to create, simulate and analyze spray applications and refine spray patterns, surface coverage, spray cone expansion and application speeds. All this is done regardless of the robot brand or model - and before the real robot system even exists.

Versatile visualization tools such as surface coating time color mapping and spray cone display, which are integrated in FASTSUITE Edition 2, allow visualization of spray coverage during the offline programming and optimization phase.

Powerful simulation

With FASTSUITE Edition 2, manufacturers can overcome the limitations of online programming by using the CAD files of the part to achieve accurate path planning on complex 3D surfaces. Process simulation enables the optimization of robot trajectories to dose the correct amount of sprayed material and achieve uniform deposition along the surface, ensuring coverage and eliminating waste.

Simulation plays a key role during the whole project implementation process. Powerful simulation tools are therefore an integral part of FASTSUITE Edition 2, allowing cell layouts and tooling designs to be validated for accessibility during the design phase, and cycle (time) estimates to be generated even for complex multi-robot cells. The use of special tools to analyze the overall process result helps to avoid programming errors and to validate programs before they are downloaded to a real cell. The simulation results of the created painting and surface treatment programs can be exported in 3D PDF format for fast and effective communication.

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Newest Version of CETOL 6 σ 10.4 Tolerance Analysis Software Released

12 August 2020

Sigmetrix announced their latest version of CETOL 6σ tolerance analysis software, version 10.4, is now available for immediate download.

Tolerance analysis benefits businesses in many ways. It helps improve profitability by balancing quality with manufacturing cost. Companies can also realize faster time to market by reducing the need for additional design and prototype cycles. Finally, it allows companies to gain confidence in their product and process decisions before making costly investments.

"The cost of achieving a quality product grows exponentially as it moves from design to manufacturing and finally to customers hands," stated Sigmetrix President, James Stoddard. "CETOL 6σ gives engineers the tools to identify and resolve issues earlier in the process, helping to maximize the profitability of products for a company."

CETOL 6σ enables product development teams to easily and fully understand the often-complex impact of dimensional and assembly variation on their designs. This knowledge enables them to make adjustments before problems appear in manufacturing or, even worse, in their customers' hands. Users of all expertise levels will appreciate the multiple levels of assistance available within the software.

CETOL 65 10.4 encompasses several enhancements including:

Unilateral measurement requirements – When defining measurement requirements, you may specify just an upper or lower limit

Improved report processing – Report templates now include options for specifying how the report is post processed and opened in the target application for report layout

New command-line execution options for Creo allow for automation of starting a new CETOL analysis or working with data saved from a previous one

Improved selection process – When adding a joint or a measurement, after selecting the first feature, that part is either hidden or changed to transparent so that the second selection is easier

Better precision control – When entering a tolerance value, the precision automatically increases as you enter more digits, but the precision can only be decreased by specific user action

Data management improvements for renamed assemblies – When the model data is stored in the top-

level assembly and the CAD assembly has been renamed, CETOL makes it easier for the user to understand that saved data exists and map it to the newly named assembly

Revised severities – The severities of some advisor messages have been adjusted to improve consistency between types of messages

Naming improvements in the Analyzer – The Analyzer now includes the CAD name for assemblies, parts, and linked annotations in the appropriate columns

Sigmetrix provides a complete portfolio helping customers design and produce better products through mechanical variation management. In addition to CETOL 6σ , Sigmetrix offers an array of software and training solutions including:

EZtol, a 1D analysis tool designed to make it easier to create, manage and report upon multiple 1D tolerance analyses in an assembly

GD&T Advisor, an interactive tool that provides expert guidance on the correct application of GD&T withing the PTC Creo environment

Training on a variety of topics including GD&T, tolerance analysis, dimensional management, and MBD / MBE

Consulting and implementation services team with years of experience in tolerance analysis and GD&T definition offers a variety of consulting services to augment your team, speed your project along and run analyses for your assemblies

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Simcenter FLOEFD 2020.2: What's New?

14 August 2020

The latest release of CAD-embedded SimcenterTM FLOEFDTM 2020.2 is here! Simcenter FLOEFD is a CAD-embedded computational fluid dynamics (CFD) solution. Due to its unique technology, it can reduce the overall simulation time by up to 75%. This new release provides a range of new features and enhancements including free surface simulations for rotating geometry, and export of thermal and pressure loads for Solid Edge Simulation. Let's take a look at the list of new functionalities available in the latest release:

Free Surface with Rotation

With the new free surface (Volume of Fluids – VOF) extension you can now consider rotating geometry and free surface. This capability lets you model partially submerged pumps that work with a liquid and air mixture of fluids or simulate the liquid surface in a mixing tank that has a mixing propeller in it – inside your CAD software.

Simcenter FLOEFD for Solid Edge to Solid Edge Simulation Interface

Export Simcenter FLOEFD results for temperature and pressure loads for use in structural simulations of Solid Edge Simulation. With the "Export Results to Simulation" command, the relevant surfaces can be exported into Solid Edge Simulation. Depending on the structural simulation type, choose if thermal and/or pressure loads should be imported and select the corresponding Simcenter FLOEFD result file (*.fld file) in Solid Edge Simulation (starting with Solid Edge 2021).

This functionality helps Solid Edge users leverage pressure and temperature loads from Simcenter FLOEFD in their structural simulations for more accurate results.

SmartPCB Material Selection

The SmartPCB model has been further improved. Now you can select custom materials for the conductor and dielectric materials. Previously only copper and FR4 were applied but nowadays a wider range of materials can be used including ceramics and aluminum.

The SmartPCB model can now allow for initial temperature definition in the SmartPCB menu. It also enables thermal conduction out of the previously insulated PCB thin side walls. This allows for a broader application of the SmartPCB and higher accuracy.

Save Changes in Simcenter FLOEFD EDA Bridge

Save any settings from Simcenter FLOEFD EDA Bridge for the PCB that you plan to import into Simcenter FLOEFD and continue from where you left off or re-use it at a later stage. This functionality makes it easier to return to the import settings or repeat PCB imports with the applied changes to the PCB design (size or component positioning). These changes are saved in the *.edabridge file.

BCI-ROM Export as FMU

Export Functional Mock-up Unit (FMU) models with the help of the recently introduced Boundary Condition Independent Reduced Order Model (BCI-ROM). Use FMU models in Simcenter Amesim, Simcenter Flomaster, Simcenter STAR-CCM+ as well as Simcenter FLOEFD and other FMU supporting 1D and 3D CFD tools. This gives a wider application of BCI-ROMs besides the previously supported MATLAB® and GNU Octave and allows for 1D and 3D tools to import and use BCI-ROM models in co-simulations.

BCI-ROM Console Solver

Solve BCI-ROM models without the need for any other tools such as MATLAB® or GNU Octave. However, this functionality will not provide the complexity and connectivity to other parts of a larger system simulation setup which can be done in those tools. The solver can be started with the Simcenter FLOEFD executable routine (Results_Exporter.exe). More information can be found in the Simcenter FLOEFD Online Help.

Thermal Netlist VHDL Export

Export Thermal Netlist models to Very High Speed Integrated Circuit Hardware Description Language (VHSIC-HDL, in short VHDL) format which can be read by Mentor's Xpedition-AMS, System Vision Cloud and other VHDL supporting tools. This makes the Thermal Netlist more versatile and usable by other tools as well, besides Spice simulators.

CATIA-to-NX CAD-Model & Simcenter FLOEFD Project Converter

Convert complete CATIA V5 models with Simcenter FLOEFD projects into Siemens NX models with Simcenter FLOEFD projects with this functionality. The data converted includes CAD model as well as the Simcenter FLOEFD project definition and maintains all geometry references. This feature saves project set-up time and assists organizations who need to transition from CATIA V5 to Siemens NX. A batch conversion of files is also possible. Please look for detailed information in the Simcenter FLOEFD Online Help.

Import Solid Edge Materials

Simcenter FLOEFD imports materials defined on the components of an assembly in Solid Edge for simulation in Simcenter FLOEFD projects. This makes the setup of simulation projects more efficient and avoids repeating steps or even manual material creation.

Dynamic Probe in Simcenter FLOEFD Viewer

The Simcenter FLOEFD Viewer now shows probes created originally in Simcenter FLOEFD. This

enables you to point out specific points and their exact value in the plots rather than trying to read it off the color bar.

Simcenter FLOEFD EDA Bridge File Storage for Simcenter FLOEFD for CATIA

Often component names such as IC1 will cause CATIA to complain about existing files when importing multiple PCBs. As such, Simcenter FLOEFD for CATIA will create a separate folder for imported EDA files through Simcenter FLOEFD EDA Bridge. This enables in large assemblies the import of multiple PCBs without errors related to existing files with the same name.

Calculating Min, Average and Max Values with Equation Goals

The new functions in equation goals allow you to define Minimum, Average and Maximum from the set of Goals or parameters. Regular expressions are supported to handle a huge number of parameters. For example, the expression Max({VG BatteryName .*}) will give you the maximum from all goals starting with "VG BatteryName". This makes the evaluation of many similar goals for their highest, average or lowest value very efficient.

Goal Plot until the Loaded Physical Time Moment

Instead of to the end of physical time, this functionality now creates a goal plot only up to the time moment that is loaded.

Display Maximum Goal Value from Transient Calculation including Time Moment

The goal table now lists the maximum goal value of a transient simulation with its corresponding time information. This function enables you to easily evaluate both the value and the exact time when the maximum value of a goal occurred.

Point Goals can be set in the Center of a Component

This new option enables you to define a point goal at the center of a component by selecting the component from the model tree. For example, now you can find out the temperature at the core of a component easily. In addition, you can disable the interpolation so that the point goal shows the value of the mesh cell. This feature is especially important for BCI-ROM models where only point goals can be used and results are typically of interest at the core of the component.

Feature Goal is available before Creating the Feature

Use feature goals in the dependency definitions of the boundary condition itself, before the boundary condition is defined. Previously such feature goals were created only after boundary condition creation. Therefore they could not be used during creation. This new functionality makes the definition of a boundary condition with dependency more efficient.

Point Parameter Coordinates Through Import from CSV or Text-Files

Define point parameters with exact coordinates for their location. When defining a larger number of such point parameters, it can be quite time-consuming to manually enter all the coordinates. Now this process can be automated by importing the coordinates from a CSV or Text file. Thereby, speeding up the process, especially for a large cloud of point coordinates.

Create Heat Sources separately for each selected Component/Surface

You can now create heat sources in the same manner as goals for individual surfaces or components when making multiple selections. This makes applying the same heat source to multiple surfaces/components, as individual boundary conditions, much easier and faster.

New 'mil' Unit

A new length unit has been added – "mil" is one thousandth (1/1000) of an Inch.

Electrical Resistance: Total Value

In addition to material thickness and selection of predefined resistances from the Engineering Database, you can now set a value of total electrical resistance. This makes it easier to perform design explorations varying the value in the Parametric Study.

Flux Plot Energy Balance for the Whole Task

You can now group all displayed nodes by their types. When displaying the graph for all components and then grouping all, it will give you an overall energy balance. In addition, radiation is split into Directional, Thermal and Solar radiation amounts. This makes the evaluation of large assemblies easier and provides a more detailed as well as overall view on the results.

New CAD System Support

Solid Edge 2021 is now supported.

The Simcenter FLOEFD Standalone version is using now an updated CAD kernel.

If you have missed the news on version 2020.1, you can find more here.

For additional information on the latest release of Simcenter FLOEFD CFD simulation software, please go to the Support Center site or read the release highlights in the installation package.

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Synopsys Introduces Integrated Electric Vehicle Virtual Prototyping Solution

13 August 2020

Synopsys, Inc. announced the industry's most comprehensive virtual prototyping solution for the development of electric vehicle (EV) electronics hardware and software. The integrated solution leverages Synopsys' best-in-class virtual prototyping technologies, including VirtualizerTM, Silver, TestWeaver® and SaberRD, enhanced for the specific needs of electric vehicle system development. From power electronics through software development and test, the multi-discipline integrated solution enables earlier and more productive development, and rapid scaling of test activities by removing the dependency on a physical hardware set up.

According to Bloomberg New Energy Finance, the global electric car market will reach 60 million electric vehicles by 2040. As competition increases, efficiency defined by the traveling range at a given speed and watt-hours consumption is a key success metric. Automotive companies are focusing on electronics hardware and software to enable a more intelligent solution using fewer electromechanical parts to improve efficiency. In this race, developers are faced with hardware design, software development and system testing challenges, such as early design space exploration, electrical component selection, expensive prototypes, model availability, complex software development and integration, functional safety testing and large-scale high bandwidth secure multi-protocol verification.

"Electronics plays a significant role in improving the efficiency of electric vehicle systems," said Burkhard Huhnke, Chief Technology Officer at Fisker Inc. "Reducing development cost and time, and increasing time-to-market requires deploying new development tools. Virtual prototyping tools allow for earlier, more productive and broadly scalable development. Synopsys' integrated virtual prototyping solution for electric vehicle development is a great step forward, enabling multi-discipline development and collaboration."

Synopsys' integrated multi-discipline solution based on industry-proven virtual prototyping technologies have been enhanced to support the specific needs of EV design including:

- EV model libraries for power electronic, microcontrollers and AUTOSAR components
- Multi-level fast simulation from abstract to high fidelity for detailed analysis
- Debug, analysis and test functionality to support functional safety, HW/SW debug, variation analysis, coverage analysis and calibration design tasks
- APIs for integration into additional automotive flows and tools including support for the Functional Mockup Interface (FMI).

"Optimizing battery management systems, handling complexity of software, and ensuring functional safety are some of the key EV development challenges our customers are facing today," said Tom De Schutter, vice president of Engineering at Synopsys. "Our continuous investment in virtual prototyping technologies provides our automotive customers a more comprehensive application focused solution, enabling them to reduce development cost and deliver better products."



Variantum releases New VariPDM Basic with product configurator

13 August 2020

Variantum - The Leading Offering Management company has released a new product: VariPDM Basic - an out-of-the-box and easy-to-use PDM (Product Data Management) system with product configurator!

VariPDM Basic is designed to handle basic PDM functionality and manage product data support for engineering and production. It is flexible system with intuitive web interface. Settings, product modeling and access rights which are managed with data. Data model changes can be done online with admintool.

VariPDM Basic can be used internally and with external partners due to flexible user access management features.

VariPDM Basic has an integration options to MS Office and most CADs and other systems like ERP using API.

See more about VariPDM Basic from solution page:

variantum.com/solutions/varipdm-basic/

variantum.com/solutions/varipdm/

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