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CIMdata News

CIMdata & SMS_ThinkTank Announce Dates for SMS Basics Virtual-Live Courses for Practitioners
21 October 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm and SMS_ThinkTank™, an industry-leading resource providing system modeling and simulation expertise, announce the dates for the next Systems Modeling & Simulation Basic Certificate Programs for Practitioners.

The program's goal is to provide a superior educational experience for today's simulation and analysis professionals. Class delivery is through a series of education and training sessions designed to equip those involved in systems modeling and simulation with a strong understanding of systems modeling and simulation concepts and industry-leading best practices.

We will offer the following Systems Modeling & Simulation Basic Certificates Classes for Practitioners in the winter of 2020/21:

- **North America (December 8-10, 2020)**—a virtual-live class delivered over three half-days, available in the Americas time zones.

- **EMEA (January 18-21, 2021)**—a virtual-live class delivered over four 3-hour sessions, available in European time zones.

The Systems Modeling & Simulation Certificate Program leverages a common systems engineering and product data model that encompasses simulation, analysis, benefits, requirements, platform, program, project, systems definition, product structure, lifecycle, and configuration management capabilities. General users, application engineers, systems engineers, simulation engineers, development engineers, subject matter experts, and IT analysts will benefit from this program.

According to CIMdata's President & CEO, Peter Bilello, "It has long been CIMdata's desire to expand our education and training offerings to the systems modeling and simulation community. Announcing these additional dates for 2020/2021 is a testament to the demand for this kind of education." He went on to add, "The CIMdata Systems Modeling & Simulation Certificate Program, offered in partnership with SMS_ThinkTank, leverages CIMdata's assessment-based educational framework and has been designed to satisfy the systems modeling and simulation education requirements of small to large enterprises."

Frank Popielas, Managing Partner and Co-Founder of SMS_ThinkTank, commented, "We are excited to offer additional classes this winter. The SMS Basic Certificate Programs for Managers as well as for Practitioners are of great interest to the systems modeling and simulation community—from industrial companies who are considering, evaluating, implementing, or enhancing their systems modeling and simulation capabilities as part of a digital transformation effort, to software and service providers in the systems modeling and simulation domain."

For more information on the Systems Modeling & Simulation Basic Virtual-Live Certificate Program, visit https://www.cimdata.com/en/education/sms-certificate-program.

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CIMdata to Host Free Webinar on Current PLM Trends and Future Disrupters

21 October 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces an upcoming free educational webinar, "Today's PLM Trends and Tomorrow's Disruptors." The webinar will take place on Thursday, 12 November 2020, at 11:00 a.m. (EST) and last for one hour.

As the definition and enablement of Product Lifecycle Management (PLM) continue to expand and evolve, one must keep a watchful eye on the industry's numerous trends and potential disruptors. PLM, like every other technological advancement, has a lifecycle of its own. Various technology and non-technology-oriented trends and disruptors are placing tremendous pressure on traditional lifecycle management approaches, many of which are resulting in new ways of looking at and enabling product and process innovation.

An evolution is underway, and there are no signs that it will slow down. At the heart of the evolution, traditional PLM solution providers, and new entries to the market offer powerful new capabilities. These include leveraging the Cloud and a host of new platform capabilities, Service-Oriented Architectures (SOA), and other emerging technologies such as Blockchain, 3D printing, and Augmented/Virtual Reality. In many ways, this evolution is bringing transparency to what has long been a fragmented lifecycle. With a platform-enabled data and process management backbone, many of today's trends and tomorrow's disruptors can tie together to enable an extended enterprise's digital thread in a manner that brings a competitive advantage not previously feasible. This webinar will discuss the global PLM industry's overall state, and many PLM trends and disruptors CIMdata is following.

This webinar will help attendees:

- Understand today's key PLM-related trends.
- Understand tomorrow's potential disruptors.
- Gain insight into the value of a PLM solution's data and process management backbone.
- Learn what to look for in a sustainable and future-proof PLM solution.
- Improve their PLM environment.

According to Peter Bilello, CIMdata's President & CEO, and the host for this webinar, "Today's PLM professionals must stay ahead of the curve by tracking and incorporating today's PLM trends, as well as keeping abreast of tomorrow's potential disruptors so that they can ensure that their PLM environments are current. To be successful, companies need to constantly understand and evaluate where the PLM industry is and where it is going so that they can achieve the maximum from its implementation."

Mr. Bilello has more than 30 years of experience developing business-enabling IT solutions for research,

engineering, and manufacturing organizations worldwide. He has participated in PLM analysis, selection, implementation, and training; CAD/CAM/CAE/CIM implementation and management; synchronous and lean manufacturing consulting; software engineering; and general data management strategy development and support. He has authored numerous papers and research reports on PLM and related topics, and his articles, commentaries, and perspectives have appeared in publications throughout the Americas, Europe, and Asia.

This webinar will be useful to a broad audience, including executives responsible for PLM initiatives, those responsible for digital transformation, PLM team leaders, PLM team members, PLM users, product managers, IT leadership, PLM software and service providers, and anyone interested in learning more about the trends and future potential disruptors of the global PLM industry.

To find out more, visit: https://www.cimdata.com/en/education/educational-webinars/today-s-plm-trends-tomorrow-s-disruptors. To register for this webinar, please visit https://register.gotowebinar.com/register/3690993867869996291

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CIMdata to Participate in the Global Product Data Interoperability Summit Virtual Presentation Series

20 October 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that it will host a free virtual presentation as part of the Global Product Data Interoperability Summit's (GPDIS) 2020 virtual presentation series. The presentation, "Digital Thread—the PLM Professionals' Path to Delivering Innovation, Efficiency, and Quality," will occur on Thursday, 29 October, at 2:00 PM (EST). CIMdata is a GPDIS partner with The Boeing Company, Elysium, Northrop Grumman, Parker, and PDES.

The Digital Thread is a multifaceted opportunity with implications affecting innovation, efficiency, and quality. Many companies view these dimensions as a tradeoff and define performance improvement goals and strategies to achieve what they see as an optimum balance between them. However, for companies that manufacture airplanes, automobiles, medical devices, military equipment, heavy machinery, and other complex products, innovation, efficiency, and quality are independent imperatives, and improvements in all three dimensions are pursued aggressively. Leaders in these industries have developed strategies and are implementing the Digital Thread to enhance their innovation platform, increase the efficiency of development, production, and service, and ensure compliance with the highest standards of product quality. Today's PLM Professionals need to understand the key components and criteria for achieving a successful digital thread strategy and enablement. This webinar will focus on this critical digitalization enabler.

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

Please visit https://www.onlineregistrationcenter.com/register/222/page1.asp?m=4293&c=41 for more

information about this presentation and register for this free event, and select Session 5.

Don Tolle of CIMdata to Participate in an upcoming Webinar on Aircraft Quality and Reliability

22 October 2020

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces that Don Tolle, Director for Simulation-Driven Systems Development, will take part in a webinar that is being sponsored by NLign Analytics (NLign). Other participants include Lieutenant Colonel Gary J. Steffes, United States Air Force, and Craig Rees, VP Sales, NLign. The webinar, NLign's Structural Integrity 3D Digital Environment enables Aircraft Quality and Reliability, will take place on Tuesday, 24 November, at 11:00 a.m. EDT.

NLign is the leader in structural integrity 3D digital data capture and analysis for Aerospace and Defense applications. NLign has been recognized by the Secretary of Defense's Office as an innovative solution to enable the Digital Engineering strategy of the United States (US) Department of Defense. This webinar will show how the US Air Force, US Navy, and OEMs can reduce sustainment costs, improve aircraft availability, and meet safety requirements by utilizing NLign's technology in selected aircraft programs. The presentation will share examples of how NLign's technology puts the right 3D product quality data in front of the right engineering decision-makers to help our warfighters maintain battlefield readiness and air superiority.

Attendees at this webinar will:

- Learn how manufacturing and operations structural defect identification data, combined with 3D digital design data, can reduce operations costs, improve manufacturing quality, and improve fleet readiness/availability.
- Understand the impact of combining the right product status data with 3D visualization and performance analytics and its influence on collaborative decision-making.
- Find out how to meet aircraft structural certifications and requirements.
- Better understand the actual state and condition of a fleet, allowing planning for downtime and repairs before serious failures occur.

With this webinar in mind, Mr. Hazen Sedgwick, Chief, A-10 ASIP Engineering, Air Force Life Cycle Management Center, US Air Force, commented, "What used to take seven to nine months can be completed in weeks. Additionally, the increased collaboration between the A-10 maintenance groups and the engineers has led to a dramatic increase in the quality of data. The quality of inspection records went from 17% good in 2017 to a current 95% in 2019".

To learn more or to register for this free webinar, visit https://www.cimdata.com/en/events/event/582-webinar-nlign-s-structural-integrity-3d-digital-environment-enables-aircraft-quality-and-reliability

Simcenter Systems Simulation Strategy and Solution Update

22 October 2020

On October 1, 2020, CIMdata met with Siemens Digital Industries Software (Siemens) personnel to be briefed on the latest and coming capabilities for Simcenter—Siemens' simulation solution. During the briefing, Siemens delivered a product and strategy overview and then focused on four topics:

- Model-based systems engineering
- Process industry
- Executable Digital Twin
- Autonomous driving

CIMdata has followed Simcenter from its inception and continues to be impressed with the capabilities and the closed-loop support across the lifecycle. The Simcenter portfolio includes simulations of individual product components up to system of systems simulations, CAE simulation, and physical test. These three capabilities are supported by HEEDS for exploration and analytics and the Siemens product innovation platform, Teamcenter, for data and process management. Teamcenter also acts as a gateway to the rest of the Xcelerator portfolio including MindSphere, which provides IoT support to connect models with operational data, closing the loop back to product development.

As products grow in complexity systems engineering becomes an essential capability. Siemens introduced Simcenter System Architect as the solution to define, validate, and manage product architectures to support system simulation. It includes a generative design approach that leverages artificial intelligence (AI) to optimize designs. Siemens expanded its system simulation offering with Simcenter System Analyst and Simcenter Webapp Server, which enables the application of system simulation beyond simulation experts. This enables Model-Based System Engineering throughout the enterprise. Renault and BMW were mentioned as lead customers using System Simulation for performance optimization of systems.

During the session, Siemens introduced their concept of an executable digital twin applying simulation models in combination with test applications across the full life cycle of the product not only for design and engineering the product. Simcenter has an expanded set of functions to create an executable digital twin based on Reduced Order Modeling and Machine Learning. The resulting executable digital twin can be packaged as an FMU, or neural network, that executes outside of the model authoring application. This supports Real-Time simulators and in combination with physical prototype testing and IoT data. Examples illustrated how the executable digital twin can significantly reduce cost in physical prototype testing by replacing expensive sensors with "virtual sensors." The combination of executable digital twin with sensor and IoT data facilitates producing more actionable insights and enabling smart diagnostics, Asset Performance Management (APM), and business processes such as SLM. This capability extends the possibilities of combining Siemens and SAP applications in the recently announced partnership between Siemens and SAP.

Continuing with the automotive theme, Siemens reviewed their latest efforts in autonomous driving simulation. A multi-scale approach was used to simulate proprietary chip design up to system of system support for autonomous driving. Simulations were used for autonomous vehicles driving in traffic to validate chip designs before committing to expensive physical chip production.

Finally, Siemens reviewed their process industry plant simulation capabilities to support operational performance. By creating an executable digital twin of the plant in Simcenter, customers have the capability to improve efficiency, profitability and safety. The executable digital twin can be used to optimize the plant design before the physical plant is built, train operators using simulated or real operational data captured from CAE or IoT, and prototype physical and operational changes without putting day-to-day operations at risk.

CIMdata was pleased to see Siemens progress with Simcenter in the critical area of systems simulation. The variety of use cases supported continues to grow, giving customers more ways to understand and improve their products throughout their full lifecycles.

The Wipro NIMBLE Approach to Accelerating MBSE Adoption

21 October 2020

CIMdata Commentary

Key takeaways:

Model-based system engineering (MBSE) is a methodology to manage complexity. It is being more broadly adopted for developing smart, connected products.

Adopting MBSE across domains beyond software is difficult, but the potential benefits are inspiring more and more companies to start the journey.

Successful MBSE adoption requires people, process, data, and technology issues to all be addressed strategically.

Wipro's NIMBLE framework provides a solution that brings together diverse MBSE and application lifecycle management (ALM)[1] tools and necessary processes into a seamless platform and Wipro's extensive implementation experience can help clients get superior benefits faster.

Systems engineering emerged as a way to manage complexity in the 1940s. It was originally used in early U.S. defense and missile programs, and has steadily evolved since then. Over the decades it has expanded to be used on non-defense products due to the growing complexity of products, especially as they incorporate more and more software and dynamically interact with the physical world.[2]

Systems engineering is an interdisciplinary approach to enable the realization of successful systems. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, and then proceeding with design elaboration and synthesis and system validation while considering the complete problem: operations, cost and schedule, performance, training and support, test, manufacturing, and disposal. When implemented correctly systems engineering integrates all the necessary disciplines and specialty groups into a team, enabling a structured development process that proceeds from concept to production to operation. Systems engineering considers both the business and the technical needs of all customers and stakeholders with the goal of providing a quality product that meets their needs.[3]

Model-based systems engineering (MBSE) is the formalized application of various levels of modeling to support system requirements, design, analysis, verification, and validation activities beginning in the conceptual design phase and continuing throughout development and later lifecycle phases.[4] Models are used from very early stages to validate that the system will function as conceived and defined by its requirements.

Our modern human existence is dependent on complex interactions of systems of systems. We depend on transportation, communication, energy, food production, and shelter to survive. The economic system drives continuous innovation to improve these systems, and much of the innovation comes from the integration of functions within and across systems often driven by the application of electronics and software. In many if not all of these systems, no single individual or company understands the complete

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[1] Application Lifecycle Management (ALM) is the set of solutions used to support software development throughout the product lifecycle.
[2] Research for this commentary was partially supported by Wipro.
[3] INCOSE. What is Systems Engineering? http://www.incose.org/practice/whatissystemseng.aspx. 14 June 2004.
[4] INCOSE Systems Engineering Vision 2020. INCOSE-TP-2004-02. San Diego, CA. September 2007.

system.

A good example of growing complexity is the automobile radio. For decades, car radios received signals on the AM frequency band and five or six mechanical presets could be configured to recall stations without digital electronics or software. Over time, the radio advanced to support FM frequencies, then digital displays with time and outside temperature and electronic presets. Today's infotainment system is a touch screen display that still receives AM signals but also other frequencies including satellite, wireless signals from smart phones, reads data on USB memory sticks, runs mapping software based on GPS coordinates, displays video from cameras and other car systems including HVAC and engine management. Modern infotainment systems can have millions of lines of software code. A failure in a wire or worse, a bug in the software, can render a vehicle inoperable. The number of use cases that need to be tested in a modern vehicle cannot be executed physically, there is not enough time. Using software-based test cases on models (i.e., digital representations) is the only way to realistically validate modern products let alone handle the increasing complexity as innovation continues its exponential growth.

At CIMdata, we see significant interest in adopting MBSE, but progress is slow. While aerospace and defense did much of the pioneering work, the automotive industry has taken over and in many ways is leading MBSE adoption progress. The best examples of MBSE success are primarily for software systems, but the need to address all systems is driving the inclusion of non-software domains including mechanical, electronics, and the physical operating environment of the product.

MBSE Adoption Challenges

A recent report from Systems Engineering Research Center (SERC) provided some insight into the issues associated with adopting MBSE. **Figure 1** shows survey results from the SERC report and the results illustrate the typical people, process, technology, and data dimensions most enterprise processes struggle to address.
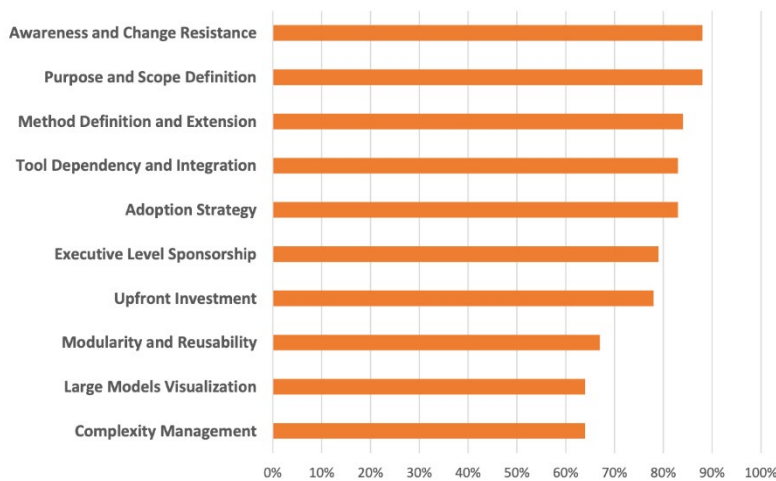
Figure 1—MBSE Adoption Challenges[5]

The shift to smart, connected products is a significant driver in MBSE adoption. Companies with any significant legacy in mechanical design struggle with process and cultural changes as electronics and software become part of the product core, and are often the highest value elements of the product. Processes such as requirements allocation, deciding if features should be implemented in hardware,

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[5] A Survey on MBSE Adoption Challenges, Chami, et. al. Systems Engineering Research Center. November 2018. https://www.researchgate.net/publication/328118976_A_Survey_on_MBSE_Adoption_Challenges

electronics, or software, become more complex, as do manufacturing, supply chain, and support processes.

MBSE technology is still evolving rapidly adding to complexity. A wide variety of tools are used to model systems and data interoperability standards are incomplete. This makes it difficult to assemble a system of systems model needed to fully assess the product. It also complicates consumption of system data by CAD and other software to create product designs. While the interoperability issue is understood, standards by their nature take a long time to develop and usually require several iterations before they are fully functional.

Wipro's NIMBLE Approach

Wipro is a leading global information technology, consulting, and business process services company and has a long and successful history of providing engineering consulting services, as well as PLM-related systems integration and large-scale data migration. They have been at the forefront of supporting the development of smart, connected products. CIMdata previously wrote about their ALM-PLM framework capabilities,[6] and their approach to digital twins.[7] Wipro recently reviewed their latest update to cyber-physical system support known as **N**ext Generation **I**ntegrated **M**odel-**B**ased **L**ifecycle **E**ngineering or NIMBLE with CIMdata. It is the topic of this commentary.

Wipro's NIMBLE framework identifies four areas that companies need to address in their journey to MBSE competency: process (Wipro refers to this as organizational) readiness; people readiness; technology readiness; and information (data) readiness. Wipro has developed a best practice-based process architecture that maps system-level processes through functional processes into a modern agile approach for product realization. The processes are solution neutral and have been implemented on multiple cPDm technology stacks.[8] This element of the framework addresses the method definition and extension issue shown in the SERC survey.

People readiness or organizational change is identified by nearly 90% of the respondents to the SERC survey. It is arguably the most difficult aspect of successfully bringing MBSE to a company. Wipro's Organizational Change Management (OCM) methodology takes a holistic view of the necessary changes that recognizes the issues that will happen and helps to ensure that the whole organization will be brought into alignment so benefits can be realized. CIMdata believes proper OCM is critical to MBSE success due to the scope of process and technology change that most organizations require.

Wipro's ALM-PLM framework is critical to making MBSE work in the real world. Their integration architecture and data model are solution-independent so they can link a wide variety of common tools and solutions, including those from Dassault Systèmes, IBM, PTC, Siemens, and Sparx Systems, spanning requirements, system architecture, mechanical, electronic, and software authoring tools. Data is managed by a common process across a single logical source of truth. Rounding out this environment is best-in-class data migration technology. Wipro acquired ITI,[9] a data interoperability and migration specialist, several years ago and has made good use of their technology and knowledge to ensure that

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[6] See: https://www.cimdata.com/en/industry-summary-articles/item/6156-wipro-unites-software-development-with-plm-a-cimdata-commentary

[7] See: https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/12838-wipro-s-product-process-and-factory-digital-twins-commentary

[8] collaborative Product Definition management (cPDm) is CIMdata's term for the data and process management solutions at the core of most company's PLM strategies. Solutions in this category include Dassault Systèmes' **3D**EXPERIENCE platform, PTC's Windchill, Teamcenter from Siemens Digital Industries Software, and their many competitors.

[9] See: https://www.cimdata.com/en/industry-summary-articles/item/12134-wipro-to-acquire-international-technegroup-incorporated-iti-a-global-interoperability-solutions-company

Wipro's clients' data investment is protected and leveraged.

NIMBLE's benefits according to Wipro are shown in **Figure 2**. Beyond support for people, process, technology, and data, CIMdata views Wipro's focus on compliance and functional safety as critical. So many of the big system failures in recent decades ultimately trace back to lack of process discipline, data integrity, and compliance support. As systems get more complex, failure modes grow exponentially and the cost to validate systems also grows exponentially. MBSE is a proven path to mitigating the risks added by the increased complexity.
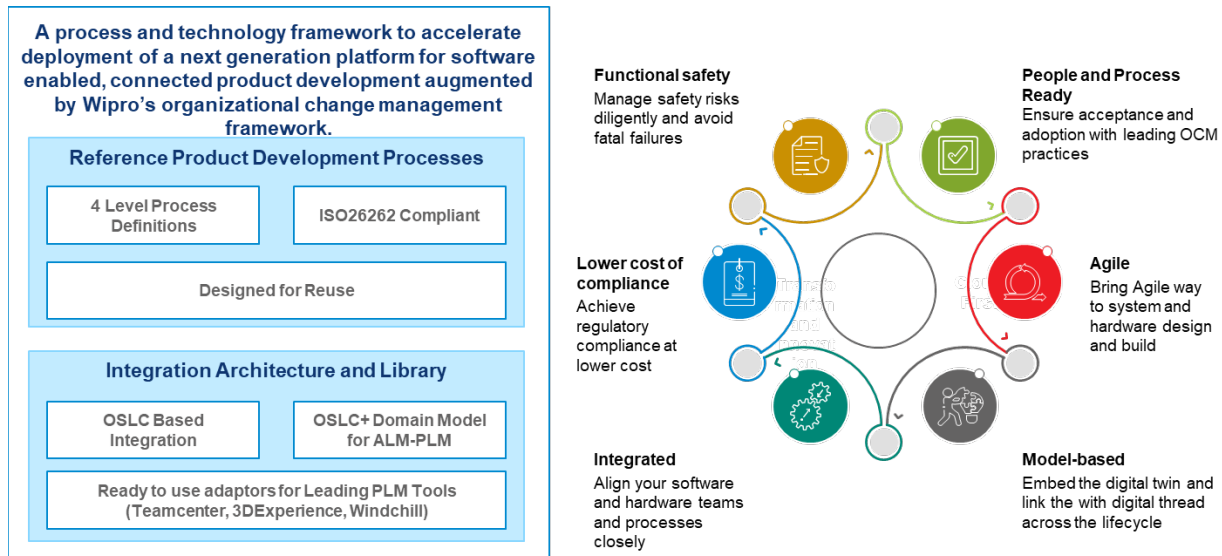
Figure 2—NIMBLE Benefits According to Wipro
(Courtesy of Wipro)

Wipro's NIMBLE solution demonstrates a deep knowledge of how to apply MBSE to solve modern product development problems that is built on a proven ALM-PLM framework. CIMdata sees two major areas of benefits for customers: the application of technology to system engineering problems helping ensure that solutions meet their requirements and best-practices to implement and speed the adoption of an MBSE environment. A leading automobile association has partnered with Wipro to develop a platform based on a previously-developed concept to exchange MBSE data with their OEM and supply chain membership. CIMdata sees this partnership as a vote of confidence in Wipro's NIMBLE approach.

Conclusion

MBSE is a proven approach to address system complexity. Unfortunately, it is not available out-of-the-box from solution providers and the variety of solutions used to develop products are almost always from multiple solution providers, creating significant integration issues. Furthermore, to be successful people, process, technology, and data all need to be addressed holistically.

NIMBLE from Wipro is a holistic framework that combines their technology and system integration skills into a solution that makes MBSE work. It leverages earlier work on ALM-PLM integration and packages best practices and consulting to address MBSE solution design, implementation, and operation. Companies looking to adopt MBSE or improve existing MBSE operations should consider reaching out to Wipro to learn more about NIMBLE

Acquisitions

Sandvik to acquire software company CGTech

20 October 2020

Sandvik has signed an agreement to acquire US based CGTech. The product offering includes VERICUT®, a machining simulation and optimization software which is CAM, machine tool manufacturer and cutting tool neutral and works stand alone or in conjunction with all major CAM suppliers. The company will be reported in Sandvik Coromant, a division within Sandvik Machining Solutions.

"This is in line with our strategic focus to grow organically and through acquisitions in the digital manufacturing space, with special focus on software solutions close to machining," says Stefan Widing, President and CEO of Sandvik.

The combined machining expertise of Sandvik Coromant and CGTech will enhance the Group's capabilities in machining intelligence, strengthen the software offering and facilitate an improved presence in key areas of the customer value chain.

"It's exciting to say that we are able to expand our capabilities with CGTech. This will not only strengthen our leading market position in all parts of the world but will as well enable us to take a big step forward in offering full machining solutions to our customers, which will reduce waste significantly in their broader value chain," says Nadine Crauwels, President of Sandvik Machining Solutions.

CGTech is headquartered in California, USA, and has about 180 employees. In 2019, CGTech had revenues of about SEK 470 million and an EBIT margin slightly dilutive to Sandvik Manufacturing and Machining Solutions' margin. Impact on Sandvik's earnings per share will initially be neutral.

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Company News

Accenture Working with SAP to Move Clients Into the Cloud with Open Industry Solutions

23 October 2020

Accenture announced it will be working side-by-side with SAP to help companies fundamentally change their business operations with industry-specific solutions based on SAP's industry cloud. Built on the SAP® Cloud Platform and integrated with SAP's intelligent suite and SAP Business Network, these applications can help companies innovate with new capabilities in the cloud while reducing operating costs, improving productivity and unlocking new opportunities for growth.
"Accenture and SAP have a long, successful history of investing in innovation and co-development to help our clients realize new business capabilities. Sharing our industry and technology expertise, Accenture can help clients drive change by delivering on the promise of the intelligent enterprise powered by SAP," said Caspar Borggreve, global lead for the Accenture SAP Business Group. "Working together, we are doubling down to drive the next wave of industry cloud solutions, including for the utilities, retail and consumer goods, and oil and gas industries."
Accenture has already collaborated with SAP on cloud solutions for the utilities industry, helping clients more effectively manage business processes and improve customer experiences. The two companies are working on additional industry cloud solutions for the retail and consumer products industries. The Accenture Liquid Studio for SAP has also developed more than 170 apps to date that extend the

functionality of SAP's intelligent suite and enable new business capabilities using technologies such as analytics, artificial intelligence, blockchain, the Internet of Things and machine learning, all on SAP Cloud Platform.

"In many industries, SAP software is the backbone on which our clients run their operations. This gives us tremendous opportunities to transform business processes with new levels of efficiency," said Koen Deryckere, Accenture's global lead for Industry Networks and Programs. "Companies with foundational SAP technology can effectively unleash data and deliver new insights that are critical for rapid decisions given the dynamic changes in the marketplace. Working with SAP, we can build the next level of enterprise impact."

To simplify delivery and amplify business results of these new industry cloud solutions, clients can look to Accenture myConcerto, an insight-driven platform with intelligent capabilities and pre-configured solutions for industry and business functions. These out-of-the-box capabilities help companies harmonize SAP technologies, applications and capabilities in a single integrated platform to amplify business results. The myConcerto platform is currently in use with more than 500 companies across 29 industries.

"Disruption is everywhere, and fast-paced industry innovation is essential for our customers with large-scale enterprise systems to keep ahead of the competition," said Peter Maier, president, SAP Industries and Customer Advisory. "SAP's industry cloud is an open yet integrated innovation space to extend the end-to-end processes of the intelligent suite and the SAP Business Network with next business practices, and innovation at the 'vertical edge'. Our partner Accenture has the experience and knowledge to jointly build solutions that make a difference for our customers' core business."

Further demonstrating Accenture's commitment to cloud expertise, Accenture recently announced the creation of Accenture Cloud First, a new multi-service group of 70,000 cloud professionals, with a $3 billion investment over three years.

As part of a partnership that spans over 40 years, Accenture and SAP have been collaborating since 2016 to accelerate development of SAP S/4HANA® as well as industry and line-of-business solutions.

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AEC Excellence Awards 2020 Winners: Reimagination During Extraordinary Times

21 October 2020

2020 has been a year of challenge. The COVID-19 global pandemic, social and economic upheaval, and climate emergencies have cracked every crystal ball, upending our notions of what the future holds.

But architects, engineers, and construction professionals are, above all, problem solvers. When challenges arise, the building industry responds with ingenuity. This is a field full of big thinkers and big doers, with the ability and will to make plans at a global scale and along generational timelines—without the need for a crystal ball.

Autodesk, along with our co-sponsors Informed Infrastructure and Society for Marketing Professional Services (SMPS), is honored to reveal the winners of the Autodesk 2020 AEC Excellence Awards. From a field of more than 260 entries spanning 35 countries, these projects stood out to our independent panel of judges as exemplars of the AEC industry's ability to respond to adversity with resilience and initiative. They are stories of challenge, solutions, and insight.

Explore these world-changing projects

We're also excited to announce the winner of this year's Innovator of the Year award, which honors AEC practitioners reimagining the design and construction practice through the use of

technology. The 2020 Innovator of the Year, Wajdi Mereb, leads digital transformation at Dubai's Road and Transport Authority (Dubai RTA), using BIM to plan and design massive projects including a 15-km-long extension of the Dubai Metro to the Expo 2020 site.

Join us virtually at Autodesk University on November 17 to celebrate this year's winners and to learn more about their stories.

And now: on to the winners! Here are the projects and teams taking on the challenge of reimagination during extraordinary times.

INFRASTRUCTURE DESIGN

Infrastructure Design – Small Project (less than $100 Million)

Winning project: Chandrawal Water Supply Project – 477 MLD Advanced Water Treatment Plant

RWS & UWWM-EDRC, WWW SBG, WET-IC, L&T Construction, India

This 477 MLD plant utilizes modern technologies including ozonation and granular activated carbon dual media filters.

Infrastructure Design – Medium Project ($100 Million – $500 Million)

Winning project: Route E39, The Coastal Highway

Norconsult, Norway

This $490-million-dollar transportation project includes the largest balanced concrete cantilever bridge in the world.

Infrastructure Design – Large Project (over $500 Million)

Winning project: City Rail Link

Link Alliance, New Zealand

This rail project allows twice as many people to live within 30 minutes of Auckland's Central Business District.

BUILDING DESIGN

Building Design – Small Project (Less than $20 Million)

Winning project: Vigentina 9

Lombardini22 S.p.A, Italy

This project is a refurbishment of an existing building in a dense urban area in the city center of Milan, Italy.

Building Design – Medium Project ($20 Million – $200 Million)

Winning project: WILD

Katrina Urbanik AS, Norway

The core of this ambitious development is three living units on a floating island, with farms and green public spaces.

Building Design – Large Project (over $200 Million)

Winning project: South Beach Psychiatric Center New In-patient Building

STV – Architectural Resources, United States

This new 221,000-square-foot, 262-bed behavioral health facility was rapidly adapted for emergency COVID-19 support.

CONSTRUCTION

Construction – Small Project (Less than $100 million)

Winning project: Kallang Polyclinic and Long Term Care Facility

Tiong Seng Contractors Pte Ltd, Singapore

A hybrid healthcare development, this complex includes a wide range of clinical centers and a long-term care facility.

Construction – Medium Project ($100 Million – $500 Million)

Winning project: Multinational Data Center, Malmo

John Sisk & Son, Sweden

Supported by complex underground infrastructure, this large-scale data center project is built for future expansion.

Construction – Large Project (Over $500 Million)

Winning project: Chengdu Phoenix Mountain Sports Park

China Construction Eighth Engineering Division Corp. Ltd, China

This modern sports complex is a new landmark, occupying 43.67 hectares with 2 stadiums, landscape and buildings.

INNOVATOR OF THE YEAR

Wajdi Mereb, BIM Manager, RTA, United Arab Emirates

Wajdi Mereb, leads digital transformation at Dubai's Road and Transport Authority (Dubai RTA), using BIM to plan and design massive projects including a 15-km-long extension of the Dubai Metro to the Expo 2020 site.

AVEVA and SCG Announce Strategic Partnership to Deliver a Digital Reliability Platform
19 October 2020

AVEVA and Chemicals Business, SCG, one of the largest petrochemical companies in Thailand and a key industry player in Asia, today announced their strategic partnership to develop a Digital Reliability Platform (DRP), a complete asset performance management (APM) solution to predict equipment

health, monitor performance, and enable advanced maintenance across its operations to eliminate unplanned downtime. The DRP was completed through a collaborative effort between AVEVA and Chemicals Business, SCG. This partnership matched the company's broader digital transformation imperative to become a data-driven organization to advance its position as a leader in the petrochemical industry and to also take the DRP solutions to the market.

Asset reliability is critical for asset intensive businesses such as petrochemicals. Unplanned shutdowns cause significant negative impacts on petrochemical value chains. Digital transformation initiatives enable businesses to address this risk by harnessing data to build and deploy an advanced APM solution to monitor critical assets and predict failure towards a goal of zero unplanned shutdowns. The solution integrates online and offline equipment data to visualize plant performance, enhance workforce efficiency, and apply artificial intelligence (AI) for predictive maintenance and resolution.

"This is a great achievement for Chemicals Business, SCG since reliability is a critical element to our business. With the innovative approach of the Digital Reliability Platform, we will ensure that we can eliminate the business risks posed by unplanned downtime. In our quest for a partner, AVEVA was the only company to provide an end-to-end solution spanning engineering, operations, and maintenance. With the DRP, we have successfully brought together big data, AI, machine learning, and predictive analytics into a practical solution that will empower our workers and improve our performance," said Mr. Mongkol Hengrojanasophon, Vice President - Olefins Business and Operations, Chemicals Business, SCG.

"Moreover, this partnership will include launching the Digital Reliability Platform Solutions to the market. This would be the first complete and unique digital solutions which combine both breakthrough technology and industrial specific information", added Mr. Mongkol.

"Our strategic partnership with Chemicals Business, SCG is a major milestone for us in leveraging the strength of our portfolio to deliver value through digital transformation. We are proud to be part of this collaboration that improves operational efficiency and reliability to achieve zero unplanned downtime by maximizing asset availability with predictive and prescriptive maintenance. The standardized systems and processes defined through this collaboration will also result in improved workforce efficiency," said Ravi Gopinath, Chief Cloud Officer and Chief Product Officer at AVEVA.

The Digital Reliability Platform will bring together digital innovations and practitioner knowledge to increase work efficiency and safety to establish a new competitive standard within the industry.

AVEVA Recognizes Chemical Engineering Students with International Academic Program Competition

21 October 2020

AVEVA announced the winners of its 2020 AVEVA Design Academic Competition. The competition series is part of AVEVA's continued investment in creating better opportunities for those entering the industry. It was open to chemical engineering students in EMEA and North America keen to challenge themselves using AVEVA Process Simulation software.

AVEVA's competition series is designed to offer chemical engineering students a unique opportunity to develop their process simulation skills. Students were judged on a number of criteria including the quality, completeness and correctness of their final report, as well as their process engineering and simulation work. Students were asked to convert their projects to dynamic models that represented how an industrial plant reacts to changes in inputs. They were also challenged to develop and implement

troubleshooting measures, possibly including a new controller design.

North American winners Nicholas Haynes and Brian Leonard won with their use of fundamental chemical engineering principles to produce 99% pure Benzene, a cleaner version of the hydrocarbon used in the manufacturing of several materials and plastics. Nicholas and Brian successfully employed an optimization approach that displayed the understanding of the cost implications of the entire process while also prioritizing the purity requirements for the Benzene product. They also displayed outstanding technical writing skills that are required of graduating engineers entering the industry and furnished a high-quality report that would meet the standards of a professional engineering organization. European winner Laura Fender was recognized for her simulation requirements working in a neat and well-organized flowsheet. She experimented with the software by approaching the model writing functionality, showing deep understanding of how a simulation problem with different levels of complexity can be approached.

Julien de Beer, Head of Portfolio Management, Engineering Business Unit, AVEVA, commented: "At AVEVA, we value the growth and learning of the next generation of process engineers. That's why the academic contest was first developed, to ensure that students and graduates alike have the opportunity to advance their capabilities into real-life scenarios. While learning the theoretical side is important, having access to the innovative software driving digital transformation gives aspiring engineers both a rewarding and practical experience."

Mihaela Hahne, Global Program Manager, Academic at AVEVA, added: "AVEVA's 2020 academic competition has been designed to tackle the most important requirements for each graduate student, ensuring that they're thoroughly prepared for a career in the industry. Moving from theory to practice by accessing the leading engineering software in AVEVA Process Simulation, equips students for success in the future workplace. It's so encouraging to see such immense talent out there in this field, congratulations to all winners and participants."

This year's winners and runners up were as follows:

EMEA:

First place and €3,000 cash prize – Laura Fender, Mannheim University of Applied Sciences, Germany

Runner-up and €1,500 cash prize – Matthias Michel, TU Dortmund University, Germany

North America:

First place and $3,000 cash prize – Team West Virginia University (Nicholas Haynes, Brian Leonard)

Runner-up and $1,500 cash prize – Team 2 California State Polytechnic, California (Maria Arrechea, Shereef Elbarbary, Jake Goodman)

The competition is designed in collaboration with Dr. Richard Turton, the co-author of Analysis, Synthesis and Design of Chemical Processes, who has 36 years of experience in the chemical process industry and academia. Since its inception in 2018, the competition has attracted applications from students from 43 universities across North America and Europe. The competition provides a unique opportunity for students and empowers future chemical engineering graduates with AVEVA Process Simulation skills and knowledge of the new paradigm in process engineering, SimCentral.

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Bentley Systems expands alliance with Microsoft to accelerate infrastructure digital twin innovations
20 October 2020

Bentley Systems and Microsoft Corp. announced an expansion of a strategic alliance focused on advancing infrastructure for smart city urban planning and smart construction. The alliance will combine Microsoft's Azure IoT Digital Twins and Azure Maps with Bentley Systems' iTwins platform, enabling engineers, architects, constructors and city planners to work within a comprehensive city-scale digital twin, empowering better decision-making, optimizing operational efficiency, reducing costs and improving collaboration.

Microsoft and Bentley Systems, a leader in engineering software for professionals to design, build, operate and maintain critical infrastructure such as road and rail networks, and public works and utilities, will collaborate to develop new smart city solutions. The companies will explore opportunities for digital twins in urban planning and citizen engagement for cities around the world. The collaboration will enable improved decision-making and increased productivity through Microsoft Teams for infrastructure engineers.

"At Bentley we believe that infrastructure digital twins can empower engineers, constructors and owner-operators to design, build and operate infrastructure assets that are more cost-effective, more resilient and more sustainable," said Greg Bentley, CEO, Bentley Systems. "With Azure as the foundation of our cloud services, our offerings are more broadly scaled and differentiated by the further integrations of Microsoft technologies. We are excited to extend our partnership to bring new digital twin advances to infrastructure engineering organizations and their constituents."

"With Azure IoT, Azure Digital Twins and Bentley's iTwins platform, the world's infrastructure — vital to our economies and environment — stands to gain so much by enabling people to create comprehensive digital models of an entire environment," said Casey McGee, vice president Partner Development, US One Commercial Partner, Microsoft. "Our expanded strategic alliance with Bentley Systems opens up new opportunities for innovation and will accelerate the benefits of digital twins for infrastructure engineering organizations and, more broadly, society at large."

City planning and managing professional football club complex projects

The capital city of Dublin, Ireland, with a population of more than 1.2 million, is working with Bentley Systems to develop a large-scale digital twin as part of the city's planning efforts. "To overcome the challenges of getting public review and comment for new development projects in Dublin during the pandemic, we turned to Microsoft and Bentley to create an interactive virtual environment to ensure our citizens could provide their input from the safety of their homes and keep the development projects on track," said Jamie Cudden, smart city program manager at Dublin City Council. "The impact of the pandemic has forced cities like Dublin to accelerate their digital transformation journeys. Working with Microsoft and Bentley we are reimagining how interactive virtual environments and digital twins can support citizens to engage from the safety of their own home on new development projects in their local communities. Working with these technology partners, we are building an adaptable and scalable solution based on Microsoft Teams and Bentley's OpenCities Planner that will set the standard for the future of planning and public engagement in cities."

In addition to sustaining infrastructure development in smart cities, project digital twins are facilitating industrial construction. Bentley Systems was recognized by Microsoft as the 2020 MSUS Partner Award winner for the Industry-Automotive category, in which an automotive factory uses the HoloLens 2 with Bentley's SYNCHRO 4D construction-modeling software.

Similarly, FC Barcelona, one of the oldest football clubs in Europe, is partnering with Bentley as part of the club's renovation of Barcelona's Camp Nou stadium, the largest in Europe, currently under construction amid the pandemic. The project will upgrade streets in the neighborhood and increase

capacity at the stadium to revitalize an aging stadium and for the club to compete with other top European cities.

"Bentley has been working with FC Barcelona on the Espai Barça Project for over three years, helping the architects, the construction team and the club complete an extraordinary challenge — delivering a major renovation of the stadium while it continues to host matches," said William T. Mannarelli, director of Real Estate & Espai Barça. "With Bentley's SYNCHRO 4D construction-modeling software running on the Azure cloud, we can apply cutting-edge techniques to manage the complex and precise scheduling required to keep the stadium open during construction."

Bentley's ProjectWise, in conjunction with Microsoft Azure and Microsoft Teams, has empowered Bentley's users to work from home safely while collaborating virtually on projects anywhere in the world.

The companies will further combine Bentley's infrastructure digital twins expertise with Microsoft's cloud technologies for:

ProjectWise 365, an instant-on, 100% Azure cloud-based solution that increases the speed and quality of infrastructure design collaboration, which will be available through Microsoft's commercial marketplace.

Bentley's iTwins platform to leverage Microsoft's Azure Digital Twins, Azure IoT Hub, Azure Time Series Insights and other Microsoft cloud services, for users to rapidly store and process operational data.

On Oct. 20, at Bentley's Year in Infrastructure Conference, Microsoft CEO Satya Nadella will join Greg Bentley for a discussion of the companies' new infrastructure digital twin alliance priorities. Register at Year in Infrastructure 2020.

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CGTech and Makino renew partnership

19 October 2020

CGTech, the developer of Vericut software, and Makino Milling Machine Co. Ltd., a manufacturer of high-precision CNC machine tools technology, renewed a strategic corporate partnership. Makino and CGTech have worked together for more than 30 years to provide manufacturing and design solutions to manufacturers around the globe.

Vericut's simulation software helps users detect errors, potential collisions, or areas of inefficiency. Makino offers a wide range of metal cutting and EDM technology.

"We are excited about this ongoing partnership," said CGTech president Jon Prun. "Manufacturers who buy Makino machines have invested in world-leading machinery. Our aim is to offer a software solution designed to help purchasers of Makino machines get up and running quickly, while protecting their investment in the long term."

Makino president Shinichi Inoue said that simulation software is important to the company. "Makino uses Vericut in simulations, and maintains an indispensable cooperative relationship with CGTech to help promote advancements to digital twins in the future," he said.

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ESI - Plastic transformation simulation to take the Augmented Reality to a new level thanks to the AMPLI project

20 October 2020

The plastics industry has already introduced enabling technologies to achieve zero-defect manufacturing and improve work cells flexibility such as in-mold sensors, in-line quality control, autonomous devices or predictive models. Augmented Reality (AR) offers new ways to interact not only with machines but also with manufacturing and product models. However, for further adoption, existing AR tools are still not specific enough to be relevant and need to offer dedicated platforms regarding each industrial domain.

The objective of the AMPLI project is to provide machine operators with real-time knowledge and information to improve decision-making and working procedures thanks to the development of an AR tool dedicated to the manufacturing value chain of polymer forming process. The AR tool will be based on the combination of plastic domain-based knowledge (from tuning, production and maintenance) and the integration of numerical simulation.

AMPLI project target 3 main benefits:

Improve manufacturing efficiency

time reduction for tuning a work cell: -10%

increase machinery availability by preventive maintenance: +8%

reduction of training period of work force: -25%

reduction of scraps: -10%

Eliminate skill shortages by capturing and return process knowledge

Increase attractivity of shop floor work by fostering the use of digital tools, which is appealing for young people. Work becomes more visual, accessibility increases and facilitates the training

AMPLI project approach is to embed and enable physically realistic virtual objects in a real environment to be interactive. It is based on the improvement of AR mechanisms and usability through:

embedded process simulation results thanks to reduced order model

customized plastic and composite processing interface by mixing measured information coming from the manufacturing work cell and information coming from models

The project is sponsored by the EIT Manufacturing (European Institute of Innovation & Technology) and is supported by a consortium of 5 European partners led by ESI Group. Together, and for a period of one year, the consortium partners will be working on developing, testing and validating AR and simulation technology dedicated to a thermoforming process.

ESI will be the integrator of the final output based on existing AR tool. This step will be particularly challenging and key as AR need real-time information to be efficient which will not be possible without ESI's expertise and innovation technologies like its model-order reduction platform. IPC will provide knowledge rules regarding setting and supervision. They will use their skills in machine interoperability and process control as guidance for the project. Moreover, IPC simulates currently thermoforming process using ESI software PAM-FORM.

LMS has extensive experience in developing AR application for the manufacturing domain to support different steps of the lifecycle. Among other AR apps, LMS has developed an AR solution to support the maintenance phase of injection molds.

ENSAM will develop AR features to mix manufacturing process simulation with reality.
Whirlpool as plastic converter will provide requirements and a pilot case dedicated to thermoforming to test and validate the product at an industrial scale.

AMPLI will bring to the market a new product with AR integrating both plastic domain knowledge and simulation as differentiator.

In mid-term, such benefits will be transferred to other manufacturing processes.

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Hexagon announces 100 percent EV initiative to accelerate electric vehicle development

21 October 2020

Hexagon's Manufacturing Intelligence division, has today launched 100%EV, a strategic initiative to drive innovation in eMobility. In the wake of seventy-three countries announcing net-zero carbon targets by 2050, the automotive industry must now both meet legislative ambitions and develop winning models. Hexagon's initiative promises to enable rapid innovation towards new classes of vehicle that outperform combustion to overcome customer's performance and cost concerns.

Hexagon's design, engineering and manufacturing technologies are employed by industry leaders such as Volkswagen and Bosch, and touch more than 75% of vehicles produced today, from optimising the efficiency of new electric vehicle (EV) powertrain design and production to quality inspecting new range-boosting batteries. Through 100%EV, Hexagon is focussing its combined technologies and expertise to help manufacturers integrate these processes and accelerate the global transition to EVs.

Electric vehicles are expected to represent a third of the automotive market by 2025, but customers remain concerned about their range and need compelling reasons to buy at current prices, which is setting new expectations for the in-car experience and innovation. In response, carmakers plan to launch 400 new Battery Electric Vehicle (BEV) models by 2025* and manufacturers require efficient ways to develop EV platforms and models, but without prohibitive cost.

Such disruption is unprecedented and is driving the need to build upon contemporary design and engineering processes that are the apex of 100 years' automotive advances, and employ new approaches that work in concert with manufacturing lines and suppliers to deliver the same quality and safety for new vehicles in unparalleled timescales.

Paolo Guglielmini, President, Manufacturing Intelligence division at Hexagon said: "We believe the journey towards a cleaner and more sustainable 100% EV future can, and should, be accelerated through innovation. The automotive industry is rallying to meet the demanding deadlines for the rollout of EVs, but wrestling with the complexity of producing new vehicles that consumers want to buy.

"EV development is just getting started. There is a race to build better and more tailored models and we want to help companies think beyond contemporary practices and win market share. We believe such a rapid pivot can only be addressed through smart manufacturing technologies that support eMobility development from concept to customer, making the journey toward 100% EV faster and more cost-effective."

Hexagon's 100%EV solutions will help the automotive industry overcome new EV challenges. For example, optimising the efficiency of electric powertrains from mechanical design and lubrication to precision machining, optimising the acoustics of the vehicle to avoid motor noise, to optimising manufacturing and quality inspection to produce more efficient batteries and electric motors. They will join up fragmented development processes, bringing together previously siloed disciplines to unlock

innovation and enable widespread adoption ahead of the regulatory deadlines. Find out more: https://hexagonmi.com/eMobility

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Introducing the Mastercam Educators Alliance

22 October 2020

Mastercam is pleased to announce the latest development in our commitment to the technical education community. The Mastercam Educators Alliance (MEA) is an organization designed to bring together the community of educators that teach and use Mastercam and provide a platform—a private MEA Facebook group—for sharing valuable information. Within the first several weeks of launching the MEA, the group has already surpassed 500 members.

Members of the MEA are invited to join the private MEA Facebook group. This group is a place for educators to interact with other instructors and the Mastercam educational community. Additionally, Mastercam provides access to subject matter experts and content that is tailored to the needs of the MEA members. For those that do not use Facebook, a newsletter has also been created to keep MEA members informed of the content.

Peter Mancini, Education Product Manager, CNC Software states, "We have a very large and loyal group of Educators around the world that are teaching with Mastercam. These educators are responsible for introducing the next generation to manufacturing and teaching the skills necessary to keep the manufacturing industry strong. We wanted to create a community where they could get together to share ideas and useful information like curriculum, projects, support, and more. We launched the MEA in July, and we have been overwhelmed by the great response. We have a nice balance of secondary and post-secondary educators, and we have members from thirteen different countries. The MEA community has been very active, and we are excited about how it will grow and evolve."

Regarding the MEA, Jason Hill, Educator at Rowan-Cabarrus Community College in North Carolina shared, "The MEA has engaged my students and I with the videos and content on this page. I think this is the best Mastercam page yet, and I am excited to see where it leads. I believe, as instructors, we should embrace the knowledge and help that this page is providing. I know there are a lot of followers of this page, but we as instructors need to be asking more questions and posting more projects that we are using Mastercam to create. Mastercam has been my rock in machining for 13 years—and it is not a company—it's a family. So, keep posting…keep asking questions. The answers and help are right there on the MEA page."

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New strategic partnership, TOPSOLID India

22 October 2020

TOPSOLID SAS, world leader in CAD/CAM publishing software for Metal and Wood industries, announces the opening of a new strategic partnership, TOPSOLID India, as part of its objectives to consolidate its footprint and have a closer relationship with its customers in India.

Richard Lamure (CEO of TOPSOLID SAS) explains: "India is one of the largest growing industrial market in the world with major players in Aerospace Automobile Manufacturing fields. Trends and strong demands of the Indian industry such as INDUSTRY 4.0, Automation, Data Management, Connectivity Machine Monitoring demand a global approach, professional and sharp teams to guide

customers projects.

TOPSOLID India focuses on promoting and supporting TopSolid CAD/CAM/PDM software solutions locally for tool room and manufacturing requirements. TOPSOLID India is led by Sunil Desai and Bhavin Padechia, who bring valuable knowledge of the CAD/CAM/PDM market as founders of DESIGNCELL, specialized in offering manufacturing-based CAD/CAM software services.

With the headquarters in Mumbai and a network of pan-India channel partners, DESIGNCELL has provided services for several leading companies such as TRIVENI TURBINES Limited, SIGMA SURGICAL, TAKAHATA PRECISION, DURIAN INDUSTRIES Limited, PANASONIC, SAFRAN, NAVAL GROUP, etc.

Arnaud de Boisboissel, Business Unit Manager for the Asia-Pacific region in TOPSOLID SAS, says: "I am very committed to be a part of this project with TOPSOLID India. Thanks to the strong dynamism of the Indian CAD/CAM/PDM market and our long-term collaboration with DESIGNCELL's expert team, we are proud to count more than 1000 TopSolid users in India. Our goal is to improve our local capabilities and service levels to better serve our customers in India while accelerating TopSolid's growth."

Sharing their vision, Bhavin Padechia and Sunil Desai, Directors of TOPSOLID India, stated "DESIGNCELL is very proud to take on a new mantle as TOPSOLID India, after an unbroken span of 17 years of collaboration with TOPSOLID SAS. This is a great opportunity for us to increase our market share in India, as well as to contribute to developing the Indian manufacturing sector."

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Openbom signs Neel Smartec as New Partner

23 October 2020

I'm excited to introduce a new OpenBOM partner – Neel SMARTEC Consulting located in Tamilnadu, India. Neel SMARTEC Consulting helps SME's to stabilize their Product Development Process through Manufacturing using OpenBOM PLM.

SME companies demand PLM solutions that are different from old legacy on-premise systems. Bill of material (BOM) is the blood of all manufacturing firms across the universe. It works as the structure of manufacturing planning systems, and also the details in it gives the standard data for various other business procedures, such as manufacturing resource planning, an item costing for production. BOM of assembly process aids the cross-functional team member of NPD/NPI to discover the ideal part at the appropriate location for assembly.

Here is how Neel SMARTEC consulting defines the biggest PLM SME challenge:

Major Challenge of SME: The primary challenge that any type of manufacturing business experiences is the adequate number of finished items in hand, but unable to offer them as a result of their much less demand in the market. One service to curb the above situation is to manufacture the product according to the demand. But there occurs an additional issue with resources or component products. The raw materials when kept for a very long time usually shed their quality and also obtain damaged. In either of the above scenarios, the ultimate outcome is the damage of the items as well as their big loss. The efficient functioning of a manufacturing business can be accomplished by producing the items just after the development of a sale order. This enables to acquire the called for quantity of raw materials which leads to less wastage, enhanced high quality and enhanced profit.

The vision of OpenBOM is to provide an open and easy to use environment to serve the needs of SME

customers worldwide. OpenBOM is available globally and you can start using OpenBOM immediately. Such a foundation is an ideal platform for service providers and consultants to provide a tailored service surrounded by specific knowledge and experience by companies knowledgeable in a specific area and customers. Contact Neel SMARTEC to learn about how they can help you.

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TimeSeries and Siemens Expand Successful Collaboration Into a Global Partnership

19 October 2020

Today TimeSeries announced their global partnership with Siemens. Building upon the existing partnership between the two organizations in North America, this expansion to the EMEA region solidifies TimeSeries as the first global Mendix and MindSphere Partner of Siemens. For many years, TimeSeries has been a leading partner of Mendix, focusing on leveraging Mendix' app development platform and other innovative technologies to help customers drive digital transformation.

This global partnership with Siemens will enable the organizations to further invest in the industry-specific app templates created since the Siemens acquisition of Mendix in 2018. The existing industry templates have already been created for the Marine, Life Science, and Manufacturing industries. Along with these template suites, TimeSeries will invest to grow their Mendix and MindSphere business further, aiding Siemens customers in digital transformation by leveraging the powerful combination of low-code app development and industrial IoT to meet the challenges of tomorrow.

The Mendix low-code platform facilitates the development of applications in a visual way, using models and graphical workflows. This has the following benefits:
- The models are understandable by non-IT people, so business and IT can work together, yielding better results.
- Application development goes much faster. According to Forrester, low-code development is 6 to 10 times faster compared to traditional application development (Forrester Total Economic Impact of the Mendix Platform June 2020).
- Low-code development teams are small, which means the cost of developing applications is lower.

"After a successful first year of a direct partnership agreement with Siemens for the Americas and the first joint customer wins, we now also have a direct partnership in place with Siemens for EMEA. As a truly global company, our regional and international customers benefit from our extensive domain expertise and technical Mendix knowledge. The combination with the Siemens ecosystem and broad portfolio of existing Siemens products is a unique and winning combination," says Erik Gouka, Founder and Owner of TimeSeries. "Together with Industry Experts of Siemens, we build focussed solutions that integrate with Siemens products such as Teamcenter, MindSphere and Opcenter. We combine this data with information from systems such as SAP in order to unlock the full potential of this enterprise data. Via our unique TimeSeries University program we enable our customers to maintain and extend Mendix applications themselves."

"What makes TimeSeries truly unique is the clear industry focus the company has," says Patrick Fokke, VP and General Manager of Siemens Digital Industries Software. "TimeSeries offers added value by not only selling Mendix as a development platform, but delivering concrete solutions, tailored to the specific needs of their customers. An example of this is an application specifically designed to facilitate certain tests that need to be executed during the construction phase of ships. This app can be used offline, on

board of large vessels, automating previously paper based processes. This does not only increase efficiency, but also reduces the number of errors."

TimeSeries accelerates successful Mendix platform adoption and customers' return on investment via the following four pillars:
- Expert Services: Smart App Delivery Services to use a la carte. Examples are app delivery services built with Mendix, quick scans (i.e., app performance and health scans), TimeSeries University, Innovation Center or workshops
- Low-code Templates: cross-industry and industry-specific Mendix-based templates
- Mendix Accelerators: reusable components and building blocks (i.e.., Audit Trailing, Smart Search and RFID hardware integrations)
- Smart App Factory: a proven and tailored program for enterprises to set up their own Centers of Excellence of low-code and smart apps. This goes beyond co-delivery of apps and includes optimizing app ideation, governance, architecture, DevOps and measuring value and progress of this program. It is the glue and guidance between all the different aspects of successful adoption and roll out of innovative technologies.

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Trimble and Boston Dynamics Announce Strategic Alliance to Extend the Use of Autonomous Robots in Construction

20 October 2020

Trimble and Boston Dynamics announced a strategic alliance to integrate a variety of construction data collection technologies with Boston Dynamics' Spot® robot platform. The jointly-developed solution will combine the Spot robot's autonomous mobility with Trimble's data collection sensors and field control software to enable automation of repetitive tasks such as site scans, surveying and progress monitoring, while taking advantage of the robot's unique capabilities to navigate dynamic and potentially unsafe environments. The relationship gives Trimble exclusivity to sell and support the Spot robot with integrated scanning, total station and GNSS technologies for the construction market.

This turnkey solution will streamline operation of the robot and provide quality control for missions, enabling construction project managers to easily get a clear picture of jobsite progress on an ongoing basis. Trimble technologies integrated with the robot enable accurate, scalable and rapid data acquisition while Trimble's construction collaboration platforms provide a continuous flow of information between field and office. In addition, customers will benefit from world-class local support and service from Trimble and its distribution partners.

Mortenson, a U.S. builder, developer and engineering services provider headquartered in Minneapolis, is one of the first customers to leverage the competitive advantages of this new technology combination. Mortenson has a strong history of Lean innovation and project technology expertise. In this spirit of eliminating jobsite waste and increasing efficiency, the team has been piloting Spot robots with Trimble's SPS986 GNSS solutions to autonomously navigate challenging exterior construction environments such as solar farms to continuously document existing site conditions. An automated and repeatable approach to field data capture can provide Mortenson with real-time awareness of project status, helping to accelerate project delivery. Through Trimble's Early Experience Program, contractors such as Mortenson have advanced access to this technology for the purposes of evaluating its suitability in actual construction projects.

"Robots will play a crucial role in automated construction workflows and can augment the human

workforce by handling dirty, dull and dangerous tasks," said Martin Holmgren, general manager, Building Field Solutions at Trimble. "Our experience with early adopters like Mortenson gave us visibility into the transformative potential of an integrated solution that seamlessly marries a world-class robot with construction-specific sensors and workflows. We're excited about this alliance and the potential to bring unprecedented improvements in safety, quality and productivity to our construction customers."

"We believe the combination of Trimble's experience and industry leadership in construction technologies and Boston Dynamics' Spot can transform the way the industry operates," said Michael Perry, vice president of business development at Boston Dynamics. "The integrated solution will enable any jobsite leader to deploy Spot and Trimble technologies to get an accurate view of construction progress through real-time data collection. With a more comprehensive view of site activity, project managers can take proactive measures to ensure on-time, on-budget and safer project delivery."

The integrated solution is expected to be available by the second quarter 2021 through Boston Dynamics, Trimble and select BuildingPoint™ and SITECH® distribution partners in the U.S., Canada, the United Kingdom, the European Union, Australia, New Zealand and Japan. Through Trimble's Early Experience Program, select customers will have the opportunity to preview development of the solution in advance of general availability. For more information,
visit: construction.trimble.com/spot and www.bostondynamics.com/spot.

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Wipro, SAP collaborate to deliver SAP Enable Now to provide a unique learning experience
22 October 2020

Wipro Limited announced that it has entered into an agreement with SAP SE to deliver SAP Enable Now. This custom enablement platform by SAP will help organisations adapt faster to technological changes and accelerate globalization.

With this agreement, Wipro can offer its clients tailor-made industry and line-of-business-specific learning tutorials and training assets, in addition to existing contextual help and guided tours delivered by SAP. With advanced content creation and training features of SAP Enable Now, such as single-source editing and in-app learning, customers will be able to significantly improve end-user productivity and learning experience. SAP Enable Now can be used for non-SAP applications and integrated with IT service management tools as well.

Srinivas Sai Nidadhavolu, Vice President and Global Practice Head, SAP services, Wipro Limited said, "As one of the leading Global Strategic Services Partner, we are excited to expand our partnership with SAP. Most of our customers adopting SAP S/4HANA® and SAP Cloud applications expect more than embedded standard content. The amalgamation of our prebuilt industry-specific content, SAP's standard enablement content and curated content will help deliver information specific to customer's need and provide a unique learning experience."

"The current situation demands organizations to enable its workforce to adapt to the new working environment. SAP Enable Now is just the right tool to help organizations rapidly create and deploy unique tutorials and training assets to enhance the performance and efficiency of the workforce," said Joe Ballard, Global Head, Ecosystem & Education, Services at SAP. "We are delighted to extend our relationship with Wipro, their organizational change management expertise coupled with SAP's technology will surely enable corporates to adopt integrated services solution and trainings. This will further simplify and accelerate the digital transformation journey of our customers."

Events

CONTACT webcast: optimally connecting development and production along the digital thread

22 October 2020

Using SAP and other solutions as examples, CONTACT shows in its free webcast how companies connect their enterprise systems to end-to-end business processes.
Today, numerous systems and tools form the backbone of the digital infrastructure in companies. It is important to avoid data silos and to seamlessly link all business applications. Only in this way can companies develop their full potential, optimize processes and gain competitive advantages.

Especially in industry, it is important that production logistics and product development work together optimally. Here, powerful PLM interactions with SAP and other enterprise systems play a decisive role. Particularly in the context of Configure to Order (CTO) and CTO+ processes, an integrated view of the users' data is relevant in order to efficiently fulfill customer-specific requirements.

In PLM, the construction and production relevant information is created. In the ERP system, the orders are planned and supplemented with commercial information. A smooth supply of ERP applications with data from PLM is therefore essential.

The webcast shows how companies can use CONTACT Elements to efficiently manage highly variant products and synchronize all relevant information with SAP in a very automated way. This creates consistent data sets for faster and more efficient production.

The webcast contents at a glance:

Open standards and certification for powerful interfaces

Share business objects: Material, eBOM & mBOM, project and order data, engineering change, documents and more

Mirror data live with linked data

Synchronized processes with workflows and status networks

State of the art technologies such as SAP S/4 Hana and Elements Catalyst 2.0 on-Premise and in the Cloud

Beyond SAP: integrate and orchestrate additional enterprise systems

The CONTACT webcast will take place on October 27 in German. Interested parties can register here directly free of charge.

Financial News

ADDNODE Third Quarter Results

23 October 2020

· Net sales increased by 3 per cent to SEK 806 m (779), of which -10 per cent was organic. Currency-

adjusted organic growth was -7 per cent.

· EBITA increased to SEK 84 m (71), for an EBITA margin of 10.4 per cent (9.1). EBITA was charged with restructuring costs of SEK 8 m (-). EBITA adjusted for restructuring costs was SEK 92 m (71), for an adjusted EBITA margin of 11.4 per cent (9.1).

· Operating profit increased to SEK 52 m (43), for an operating margin of 6.5 per cent (5.5).

· Profit after tax increased to SEK 37 m (31).

· Earnings per share increased to SEK 1.11 (0.93).

· Cash flow from operating activities decreased to SEK -66 m (32).

· Acquisition of SaaS company Netpublicator with net sales of SEK 16 m.

Cadence Reports Third Quarter 2020 Financial Results

20 October 2020

Cadence reported third quarter 2020 revenue of $667 million, compared to revenue of $580 million reported for the same period in 2019. On a GAAP basis, Cadence achieved operating margin of 25 percent and recognized net income of $162 million, or $0.58 per share on a diluted basis, in the third quarter of 2020, compared to operating margin of 21 percent and net income of $102 million, or $0.36 per share on a diluted basis, for the same period in 2019.

Using the non-GAAP measure defined below, operating margin for the third quarter of 2020 was 36 percent and net income was $197 million, or $0.70 per share on a diluted basis, compared to operating margin of 32 percent and net income of $153 million, or $0.54 per share on a diluted basis, for the same period in 2019.

"Cadence delivered outstanding results in the third quarter by continuing to innovate and delight customers," said Lip-Bu Tan, chief executive officer. "System and semiconductor design activity remains strong and our Intelligent System Design strategy uniquely positions us to enable our customers to realize their cutting-edge designs. In the third quarter we expanded the scale and scope of our relationship with a global marquee company, and I am especially pleased with the momentum of our new systems products."

"We are raising our 2020 revenue and earnings guidance primarily due to higher second half hardware and IP sales activity in China and continuing progress in our System Design and Analysis business," said John Wall, senior vice president and chief financial officer.

During the third quarter of 2020, Cadence repurchased $75 million of its common stock and the Board of Directors has increased the previously announced authorization by an additional $750 million. As of the end of the third quarter of 2020, approximately $869 million remained available under the authorization to repurchase Cadence common stock. The actual timing and amount of repurchases will be subject to business and market conditions, corporate and regulatory requirements, stock price, acquisition opportunities and other factors.

CFO Commentary

Commentary on the third quarter 2020 financial results by John Wall, senior vice president and chief financial officer, is available at www.cadence.com/cadence/investor_relations.

Business Outlook

For the fourth quarter of 2020, the company expects total revenue in the range of $720 million to $740 million. Fourth quarter GAAP operating margin is expected to be in the range of 23 percent to 24 percent and GAAP net income per diluted share is expected to be in the range of $0.48 to $0.52. Using the non-GAAP measure defined below, operating margin is expected to be in the range of 34 percent to

35 percent and net income per diluted share is expected to be in the range of $0.72 to $0.76.

For 2020, the company expects total revenue in the range of $2.643 billion to $2.663 billion. On a GAAP basis, operating margin is expected to be in the range of 23 percent to 24 percent and GAAP net income per diluted share for 2020 is expected to be in the range of $1.97 to $2.01. Using the non-GAAP measure defined below, operating margin for 2020 is expected to be in the range of 34 percent to 35 percent and net income per diluted share for 2020 is expected to be in the range of $2.68 to $2.72.

Our fiscal years are 52- or 53-week periods ending on the Saturday closest to December 31. Fiscal 2020 will be a 53-week fiscal year, with an additional week in our fourth quarter of 2020. Fiscal 2019 was a 52-week fiscal year.

A schedule showing a reconciliation of the business outlook from GAAP operating margin, GAAP net income and diluted net income per share to non-GAAP operating margin and non-GAAP net income and diluted net income per share is included in this release.

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Dassault Reports Strong Third Quarter Operational Performance, Confirms its 2020 non-IFRS EPS Objective

22 October 2020

Dassault Systèmes announces IFRS unaudited financial results for the third quarter and nine months ended September 30, 2020. The Group's Board of Directors reviewed these results on October 21, 2020. This press release also includes financial information on a non-IFRS basis and reconciliations with IFRS figures in the Appendix to this communication.

Highlights and Financial Summary
(Unaudited, revenue growth in constant currencies)

On a non-IFRS basis: Q3 EPS of €0.80 at high end and Operating Margin of 28.2% above target

Non-IFRS organic recurring revenue up 4% in Q3 and YTD

Mainstream Innovation non-IFRS software revenue up 9% in Q3

3DEXPERIENCE non-IFRS software revenue up 6% in Q3

Medidata delivers double-digit non-IFRS revenue growth on a comparable basis in Q3 and YTD

YTD cash flow from operations at €1 billion, stable with year-ago quarter

Confirming 2020 non-IFRS EPS of €3.70 to €3.75, up 3% to 5% in constant currencies

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HCL announces results for FY21 second quarter

19 October 2020

Revenue at US$ 2,507 mn; up 6.4% QoQ & 0.8% YoY

Revenue in Constant Currency; up 4.5% QoQ & down 0.4% YoY

EBITDA margin at 26.6%; EBIT margin at 21.6%

Net Income at US$ 424 mn; up 9.7% QoQ & 12.7% YoY

Revenue at ` 18,594 crores; up 4.2% QoQ & 6.1% YoY

EBITDA margin at 26.6%; EBIT margin at 21.6%

Net Income at ` 3,142 crores; up 7.4% QoQ & 18.5% YoY

Revenue to grow QoQ by an average of 1.5% to 2.5% in constant currency for Q3 and Q4, FY'21
EBIT to be between 20.0% and 21.0% for FY'21

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Implementation Investments

ACE Ceiling Products completes prestigious projects with help from Lantek

21 October 2020

ACE Ceiling Products has been manufacturing bespoke sheet metal components since the early 80s and is a leader in its specialist field of bespoke construction projects and ceilings. A step change in its business was the introduction of Amada CNC punching machines in 1998, enabling it to produce micro perforated sheets which have 1.5mm diameter holes at 2mm pitch, widely used in the industry for specialist ceiling tiles.

The company, based in Coventry, now has three Amada punch presses, a Vipros 355 and 368 and a 2510 with automated sheet handling, using Lantek Expert to efficiently nest parts and auto-tool all the punching operations. Damian Jones of ACE Ceiling Products says, "I had known about Lantek Expert for a long time and when we looked at it in detail its ability to work with 3D models and parametric designs was impressive. Introducing the software has led to a 90% reduction in our CNC programming workload."

Working closely with architects, ACE Ceiling Products gets involved at the concept stage of the project, helping to turn the architect's designs into reality with advice on how they can be manufactured and assembled. 3D models of the concept with rendered images are built in ACE Ceiling's Creo CAD software and proposals and images are discussed with the architect before a full size mock-up is built, working through to final approval of the designs. At this stage, installation is put out to tender and ACE Ceilings can start full scale manufacture of the component panels required in the project.

Some of the major projects the company has been involved in include the new Tottenham Hotspur stadium opened in 2019, Goldman Sachs headquarters in London and redevelopment of the ceilings in disused platforms and tunnels at Waterloo station ready for reopening.

90% of ACE Ceiling Products' work goes through the Lantek software. Much of the project work requires parametric design of families of parts. The flattened component parts are then imported into Lantek Expert. Nesting is carried out according to material type and thickness, mixing parts from different jobs on the same sheet. Damian Jones says, "All the parts are brought into the software and nested as a collective. We may have 100 parts which are auto nested together and then auto-tooled. We may then have 20 sheets or more to make up the workload. Parts are tagged into the sheet and we identify them with a series of small holes which make up a code for each part number. The auto-tooling is very good, making the process automatic while, the auto nesting has generated savings of around 15% in material usage despite our panel parts being large and difficult to nest efficiently."

Lantek is currently developing some macros for ACE Ceiling Products to help it in the manufacture of specific families of parts. Damian Jones adds, "We now have spare capacity thanks to the Vipros 355 and 368 machines and the 24hour unmanned operation capability of the Amada 2510. Lantek has been a

vital part in making this possible as its automated programming and nesting has given us the capability to use the machines to their full capacity. We are now ready to expand our business for the future benefit of our customers."

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Autodesk Generative Design Helps Strengthen and Lighten Hyundai Walking Car

23 October 2020

What happens if you combine a car and a robot?" asked John Suh, Hyundai's founding director of the company's recently announced New Horizons Studio based in Silicon Valley. To many, the answer is easy: Transformers!

The 150-year-old automotive industry is navigating a period of transformational change and needs to innovate: strict climate regulations, electric vehicle (EV) start-ups disrupting established markets, changing personal travel habits, shipping patterns and global supply chains are just a few of the forces dictating that established auto manufacturers absolutely must innovate now. Cars of tomorrow and today need to become more versatile and adaptable, smarter and safer, more fuel efficient and otherwise sustainable than the cars of just a few years ago.

A unique mobility solution–something that drives *and* walks–presents immensely difficult design and engineering challenges. One of the most common amongst these is a never-ending quest in the transportation industry: create components that are lighter, but stronger, than past generations of similar components. Designers and engineers tasked with these "lightweighting" challenges frequently look to futuristic materials such as metallic foams, carbon fiber and new metal alloys**,** along with modern design techniques such as generative design, for solutions. These are areas where Autodesk's tools and expertise excel, so Hyundai turned to Autodesk for input.

Operating at one of the epicenters of global innovation–the region that Apple, Google, Tesla, Twitter and Stanford call home–Suh is well positioned to spearhead one of Hyundai Motor Group's more futuristic approaches to addressing these challenges. Hyundai's New Horizons Studio believes that the combination of driven wheels and powered legs will result in ground vehicles with unprecedented locomotion capabilities. The studio aims to contribute to Hyundai Motor Group's core automotive business as it seeks to expand into new markets that enhance transportation on and off the road. Accordingly, being guided by an executive with a robust imagination, informed by the megahit robots-that-become-cars toys of the '80s, is probably a strategic advantage.

 "What could a car achieve if it had the ability to walk?" continued Suh's thinking, which ultimately resulted in the walking "Elevate" concept that Hyundai developed in collaboration with storied industrial design studio Sundberg-Ferar and debuted at CES 2019. Called the ultimate mobility vehicle (or "UMV"), Elevate has the ability to transform from a four-wheeled, car-like vehicle into a four-legged, reptilian walking machine, giving it the ability to traverse terrain that's inaccessible to even the most capable off-road vehicles. When originally debuted, it was heralded for its ability to climb walls, cross diverse terrains and approach barriers, all while keeping its body and passengers completely level.

Uses for such a vehicle include irregular-ground transport needs, surface exploration, search and rescue emergencies, and clearing the significant transportation hurdles some mobility-impaired individuals face daily.

Generative design seeks to streamline and accelerate the process of developing design ideas and getting to production. In the time a designer can create one idea, a computer can generate thousands, within the constraints provided by the designer, and present those numerous design options with the trade-offs of

strength, weight, cost, manufacturing complexity and sustainability clearly illustrated early in the process. Autodesk's tools provide options through which designers and engineers may tap the near-limitless compute power of the cloud to reduce their mundane, repetitive analysis work, freeing up their time to focus on creativity and innovation.

 "Generative design helps the human mind expand the range of possibilities," says Suh. "With the help of generative design, a single designer or engineer can go through perhaps dozens or hundreds of different design iterations, so it enables them to see things that they may not have otherwise considered, and in tandem tackle complex problems. Which is to say that people still have a very important role to play in shaping the design direction. There will always be need for the human eye, the heart, and the soul as vital parts of the design process."

In the case of the Elevate concept vehicle, high-torque electric motors are at each joint of the "legs." This requires structural components be strong and rigid. But vehicle handling and payload requirements demand they, and the in-motor driven wheels, which are the "feet" of the vehicle, be lightweight. To achieve these and other goals, particularly with the international presence of Hyundai, a design and engineering toolset that makes it easy to share across teams, companies and continents is mandatory.

Creating tools for modern teams of this nature, leveraging the cloud and a common data platform to ensure everyone's on the same virtual page: this has been the focus of Autodesk's Fusion 360 platform since its inception more than seven years ago. Teams can explore how to save time, remove frustration and maintain details of a project from start to finish when file sharing is seamless and everyone's speaking a common design, engineering and manufacturing language.

"More than 10 years ago, we identified the pain points, rework required and loss of valuable information when projects move from one phase to the next and the associated files don't play nicely in the heterogenous environments organizations so often use," says Srinath Jonnalagadda, vice president of design and manufacturing at Autodesk. "Creating a design and engineering platform that helps remove those hurdles, while also putting advanced capabilities such as generative design tools at the fingertips of designers, has been our North Star for a decade. The Elevate project is a showcase of how leaders like Hyundai can now enjoy the fruits of that vision."

Elevate exists only as a 5:1 scale prototype at this point, so it remains to be seen what'll come of this fascinating and futuristic Hyundai project. Nevertheless, wrapped in its Transformer-inspired trappings are examples of the potential benefits offered today by a platform that breaks down barriers between design, engineering and manufacturing; makes broad collaboration seamless by standardizing data; and gives teams access to a state-of-the-art, cloud-powered new process like generative design.

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Dassault Selected by Ball Aerospace for Multiyear Digital Engineering Contract

22 October 2020

Dassault Systèmes was selected by Ball Aerospace to deploy the 3DEXPERIENCE platform as its digital engineering solution. Through this collaboration, Ball Aerospace will leverage Dassault Systèmes' integrated platform with a unified data model and single user experience, to complement the company's digital transformation, and promote digital continuity through the use of the virtual twin across its defense and space products. Accenture has been chosen to collaborate with Ball Aerospace on the implementation of the 3DEXPERIENCE platform.

"Dassault Systèmes' 3DEXPERIENCE platform will support Ball Aerospace with its digital engineering goals to establish a single, integrated solution," said David Ziegler, Vice President, Aerospace &

Defense Industry, Dassault Systèmes. "Ball Aerospace joins the many industry customers that are leveraging the platform to speed timelines and improve efficiencies."

"Digital engineering is a critical tool to support the evolution of the aerospace and defense industry – ultimately expediting the time from customer concept to program delivery," said Mike Gazarik, vice president, Engineering, Ball Aerospace. "Incorporating a digital platform enforces Ball Aerospace's commitment to our customers' needs and aligns our capabilities for future missions."

Powered by endlessly curious people with an unwavering mission focus, Ball Aerospace pioneers discoveries that enable its customers to perform beyond expectation and protect what matters most. Ball creates innovative space solutions, enables more accurate weather forecasts, drives insightful observations of our planet, delivers actionable data and intelligence, and ensures those who defend our freedom go forward bravely and return home safely.

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ESI virtual prototyping supports JMDAs Red Dot Design Award

22 October 2020

With a relationship that spans more than a decade, JMDA Design and ESI Group worked together on the Tinyseats child car seat project which resulted in the highly acclaimed Red Dot Award: Design Concept 2020.

Multi-award winning JMDA Design has collaborated with ESI Group, a global player in virtual prototyping software and services for industrials, for many years. Their unique partnership enabled the Tinyseats child car seat project from Tinyseats Europe AB to undergo rigorous testing without the need of any physical prototypes. They were able to do this at the early stages of development to gain additional information about product performance and to help de-risk compliance challenges in a test situation. Using Virtual Prototyping by working with ESI Group, particularly for innovative, cutting-edge child restraint systems (CRS), ensures dynamic performance is optimised with controlled time and investment, from the upstream phases of the product design process.

"The Red Dot Award: Design Concept 2020 for the Tinyseats child car seat was a ground-breaking project aiming to achieve a very lightweight, compact and convertible car seat for children from 9 months old. Working with ESI Group enabled JMDA to gain substantial insight into the performance of the car seat early on in the design process, especially the load bearing structure, which could be fully evaluated in a virtual environment. As our relationship goes from strength to strength with ESI Group we are backed by a team sharing our passion for innovation with the highest safety standards".

Derrick Barker

Founder and Director at JMDA

"We are really proud to be part of JMDA journey for many years now. Their commitment toward safety and comfort compelled with their undisputed design expertise make them a key player in the car seat industry. Helping industrials to commit to such outcome is truly embarked in our DNA and our strategy. This Red Do Award proves that allowing any compromise between, design, safety and performance is possible with the appropriate expertise, solutions and trust-based relationship."

Jonas Fredriksson

Managing Director – ESI Northern Europe

JMDA Design, a global provider for product design services with nearly 30 years' experience in the

industry, is currently designing their 105th child car seat, have. Partnering with world leading specialists, like ESI Group, is a critical part of ensuring a truly holistic approach to innovative product design.

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ESPRIT: The Right Choice for Swiss Machining

22 October 2020

Pacific Swiss & Manufacturing is an all-Swiss machining job shop, in business since 1995 in the Portland, Oregon suburb of Clackamas. With its nine Citizen Swiss turning centers, the company provides specialized micro/miniature and Swiss-turned manufacturing services to a diverse customer base that includes the medical, dental, aerospace, and motion and flow control industries. "We work with a variety of different industries," says Scott Durkee, a 20-year machine shop veteran and CNC programmer at Pacific Swiss for the past year. "We go after anything our machines can make; we are very diverse in our offering."

Prior to adopting ESPRIT, Pacific Swiss did most of their programming by hand. They occasionally used a basic CNC editor that came with their machines, but it was not much help, offering only minimal calculations and a cumbersome cut-and-paste program generation process. "Lots of pen-and-paper calculations," says Kevin Wilhite, a 10-year machinist, newly minted mechanical engineer, and quality engineer at Pacific Swiss for the past five years. "It was grueling, to say the least—very much trial and error a lot of the time."

"Programming was a bottleneck; machines were waiting for programs," agrees Scott. Weeklong programming sessions were followed by multi-day setups and on-machine program verification. He continues, "We used to probably take a three-day setup, wheeling through the program to check it. Mistakes like a misplaced decimal point or negative sign would crash the machine, and we'd have to order a new tool or fix the machine."

Even with the formidable talent that the Pacific Swiss team brings to the table, the potential complexity of 7-axis Swiss machining (Citizen L32) and the shortcomings of basic programming tools meant that the shop had to occasionally turn away lucrative work that they deemed too complex to program by hand.

When it came time to choose a CAM system to enhance the shop's capabilities, it quickly became clear that ESPRIT was the right choice, with its best-in-class support for Swiss turning centers, turn-key post processors, and renowned customer support. Kevin notes that other CAM systems they looked at lacked Swiss programming and specific post solutions; some had lackluster NC code output or uninspiring UI. Additionally, Scott's great experience with ESPRIT at a previous shop gave him tremendous confidence that ESPRIT is the right choice for Pacific Swiss.

"I like using ESPRIT," Scott says. "It's pretty easy to use. One of the things I really like is the consistency of the GUI. Other programming software I've used would constantly change icons, menu locations, and buttons. ESPRIT has kept the interface pretty solid. With each new version, there are a lot of upgrades in functionality and post processor enhancements."

With ESPRIT on board, Pacific Swiss quickly saw impressive results; first, that the formerly three-day to weeklong programming sessions are now usually finished in a day. "Even the most complex parts now don't take more than a day to program. Sometimes I run into something I've never seen before, and it might take me a little while longer to figure something out, but most of that is figuring out what tool and operation to use."

For a compact and complex machine like the Swiss-type CNC lathes with multiple turret and dual spindles, every movement has to be extremely precise to increase productivity and avoid disasters.

At setup time, ESPRIT's digital twin simulation has provided significant savings in time and tooling, and edit-free NC code has contributed greatly to the enhanced productivity. "Having a solid post processor has eliminated a lot of those programming errors," notes Scott. "If it works on the computer, it works on the machine."

"The confidence level coming from programming to the shop floor is much, much higher with ESPRIT," adds Kevin. "It makes my life easier in quality control, in that I don't have to turn away a part as often because of a quality issue. It also makes people nicer to me," he says with a laugh.

ESPRIT has enhanced productivity and part quality at Pacific Swiss, with complex wrap milling, automatic chamfering cycles that eliminate secondary deburring operations, and optimized spindle usage that allows Pacific Swiss to squeeze every bit of performance out of their already high-performing machines.

Scott states that balancing spindle usage in legacy applications has been particularly effective. "On average we can reduce the cycle time by 20% on legacy programs. One part that we do in relatively large volume, 30,000 pieces a year, after programming with ESPRIT I was able to get the cycle time from three minutes down to two minutes. That's 30,000 minutes [500 hours] of machine time saved!"

"I have ESPRIT templates built for different machines that already have the syncs in place," he continues. "It's really easy to get a new part in, put the operations where I need them, and have everything work simultaneously without crashes."

Kevin and Scott also have high praise for the world-class support they receive from their machine tool dealer and ESPRIT product support. "We like the support out of Spinetti Machinery, and we like the consistency and familiarity among Citizen machines," says Scott. "And I really like the support we get from ESPRIT. Whenever we have a problem or a question, ESPRIT is very quick to respond with an answer to the question."

With ESPRIT doing the heavy lifting, both Kevin and Scott note that the company's prospects have widened considerably, not only in taking on more complex work, but also with new capability for planning and quoting jobs accurately. "As the complexity goes up and if I'm not sure how long it will take to machine a specific feature, I'll build a quick program with that feature and then estimate the time based on what ESPRIT says," says Scott.

All of this adds up to increased business and impressive success. "So far, sales are up 10% over last year. We're projected to do a lot better this year than our prior year without ESPRIT," says Kevin. And as for the current challenges presented by COVID-19, he is undaunted. "Business-wise, it has presented some opportunities. We've made some ventilator parts," he says. "We have had some aerospace customers push back, but it's nothing that we weren't prepared for."

"And we're still mega busy," adds Scott. "We've added a lot of additional customers in various industries."

Looking to the future, Kevin and Scott see ESPRIT as instrumental in their future growth, not only in complexity of work but also in equipment as their shop and capabilities continue to expand. "With ESPRIT, the transition to machines that have a programmable B axis will be very easy, which could potentially open us to more business opportunities," Scott tells us. "the ease of programming with ESPRIT in Swiss machining gives us the competitive advantages of better product quality, reduced machining costs, and improved machinability on complex parts."

Haddad Steps into Digital Transformation with DeSL Digital Color Approvals

22 October 2020

Discover e-Solutions (DeSL) partners with Haddad Brands as they take their first steps into digital transformation with DeSL's Digital Color Approvals.

Founded in 1948, Haddad is the leading children's wear manufacturer representing the most iconic American brands in the world; Nike, Brand Jordan, Converse, Hurley, and Levi's. This year, Haddad has decided to move towards a more efficient business model through digitalizing its color approval process.

DeSL's Digital Color Approval software eliminates the need to send physical lab dips/strike offs, ultimately ensuring color consistency across the entire supply chain and sales channels. This technology creates a more accurate approach to managing color, while drastically reducing the time and capital spent. Not only does this platform support digital color specification, communication, and the approval process, it includes importing digital color standards and the digitization of current physical color standards. Haddad will have a single source of color information available throughout the entire company and be accessible in real-time globally by all authorized color users.

Haddad has now stepped into digital transformation by the virtualization of once physical assets required in order to make decisions with product selection and sampling. Decision making is now based on scientific data, reducing approval time and the possibility of errors.

In the coming years, Digital Transformation innovations will help drive the next phase of advancements for the fashion, apparel, textile, and footwear industries. DeSL provides these solutions to fully exploit the potential improvements by deploying a digital cloud-based ecosystem covering all major business processes from product concept right through to the end consumer.

PARC selects AlphaSTAR GENOA 3DP for Additive Manufacturing Simulation

23 October 2020

AlphaSTAR Corporation announced today their additive manufacturing (AM) simulation solution, GENOA 3DP, was selected by Palo Alto Research Center (PARC), a Xerox Company, to be used on the Advanced Research Projects Agency-Energy's (ARPA-E) DIFFERENTIATE Program.

DIFFERENTIATE (Design Intelligence Fostering Formidable Energy Reduction Enabling Novel Totally Impactful Advanced Technology Enhancements) seeks to facilitate rapid design and improvement of 3D printed parts for turbomachinery applications. The program's goal is to accelerate the timeline of 3D print to validation, eliminating one of the largest barriers to more widespread adoption of AM technology.

The collaboration between PARC and AlphaSTAR aims to create a virtual additive manufacturing approach that will save both time and materials. AlphaSTAR's predictive simulation technology maps temperatures through the thickness of the parts, calculating residual stresses, strain, deformations and curvature. PARC's topology optimization software optimizes material layout. The combination of the two allows PARC engineers to quickly tweak virtual models to improve and make printed parts more lightweight.

"One of the biggest challenges in design for metal additive manufacturing is ensuring that the part can

be fabricated in a reliable and cost-effective way," said Saigopal Nelaturi, Research Director at PARC. "GENOA 3DP can help predict and plan for factors that affect the fabrication process, like residual stresses, which will help improve the design process for turbomachinery parts. We are very excited to collaborate with the AlphaSTAR team to solve real-world problems in design for additive manufacturing."

"There is an excellent synergy in the vision of both companies to be on the tip of the spear when it comes to innovative solutions", says Dr. Rashid Miraj, Director of Technical Operations at AlphaSTAR. "We are delighted to be working with PARC and their partners on this novel program that addresses the real-world Industrial needs as they relate to Metal AM".

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Systematica Pioneers Multimodal Mobility Simulation on Milan Urban Regeneration Project

19 October 2020

The Milan Innovation District (MIND) is an urban regeneration project on the site that hosted festivities for the Universal Exhibition Expo 2015 in Milan, Italy. As part of the plan for this campus area, developers are building an urban center within the city that is focused on both redefining mobility within this innovative campus and beyond, using traditional gas-powered vehicles and mass transit to minimize traffic congestion and try to decrease carbon emissions. MIND is planned to act as an international test-bed for pioneering mobility technologies and solutions, including multimodal models that are capable of replicating and assessing the walkability of an area and the attractiveness of all movement in and around the campus.

Systematica was tasked with planning and designing this integrated multimodal transport model in support of the district's master planning and architectural design. They were tasked with assessing mobility for what would be considered a new city of around 60,000 inhabitants, located in the city of Milan that is 1,575 square kilometers and already has 3.2 million inhabitants. The MIND mobility plan gravitated around the principles of walkable, user-centric development and is shaped by an effective Mobility as a Service (MaaS) model. This model includes the provision of e-mobility and self-driving solutions, demand-responsive systems, intelligent-cognitive infrastructure, and future proofing-adaptive transport assets. However, Systematica needed to focus on the user experience, deliver a pedestrian-oriented public realm, provide intermodal connection, and seamlessly connect to mass transit, including organizing transport around micro-hubs.

Challenge

Systematica realized that converting the former visitor-oriented space into a permanent community-based district would require exploring and testing new ways of thinking about movement in cities across many mobility options, as well as the integration of these different mobility types. Meeting these goals would be difficult with traditional methods. First, Systematica needed to create a modeling layer that was at metropolitan scale—a GIS-based simulation platform that encompassed the entire metropolitan area of Milan. Second, they needed to create a modeling layer that could replicate and test the expected mobility patterns within the innovative MIND campus.

Therefore, they made it their goal to implement the latest mobility simulation technology to overcome these challenges. Their simulation needed to consider both the effectiveness and attractiveness of the different forms of mobility. The model also had to consider a reliable assignment of people movements throughout the dense and permeable pedestrian network of the district and make it seamless to access all the different forms of mobility within the car-free district.

Breakthrough

After searching for the right solution, Systematica selected Bentley's CUBE to evaluate the accessibility patterns and impact of the induced mobility demand on all available transport services and infrastructure, as well as model and simulate expected mobility patterns for both transport and pedestrian movement throughout the campus.

Using the anticipated number of 60,000 residents, Systematica's simulation was specifically updated to evaluate macro-level accessibility patterns and assess the impact of the induced mobility demand, which is defined as more than 150,000 all-modes trips per day on all available transport services and transport infrastructure. The simulation included strategic toll-road corridors and complex interchanges, any type of railway connections ranging from high-speed rail to suburban services, subway lines, and a dense local bus network. Additionally, Systematica included an analysis of the innovation campus with their tailored multimodal model, which was capable of replicating and assessing the walkability potential within the campus, as well as the ease-of-use of all innovative mobility services and last-mile transport solutions. These solutions included e-bus services, an autonomous shuttle connection, and micro-mobility solutions.

Systematica also considered driverless mobility. Using CUBE, they proposed a highly efficient group rapid transit (GRT) system operated by autonomous shuttles to connect the main transit hub of Milano Rho Fiera, West Gate with MIND, East Gate. This GRT system is expected to provide effective and convenient last-mile connections, as well as facilitate an internal transport system within the MIND Park district. Over time, this system will have the potential to evolve into point-to-point on-demand mobility service operated by robotaxi.

They also analyzed electric mobility, which included recharging for public and private car parking and facilities for external e-bus services. Electric mobility, represents the overall mobility concept of MIND, including internal public transport services, on-demand services, micro-mobility solutions, and last-mile logistic systems. Moreover, Systematica's zero-emission mobility model reinforces the gradual shift of traditional public transport services to electric solutions.

"The suite of transport simulation codes that CUBE provided advanced [our capability] to model complex mobility as a service (MaaS) paradigms based on walkability—a crucial dimension to ensure the actual sustainability of any urban development. Modeling the MaaS paradigms was also based on the public's response to current and future mobility patterns, which allows us to deliver a high-quality built environment, now and in the future," said Diego Deponte, partner and managing director, Systematica.

Outcome

This integrated, multimodal transport model of the campus supported the master planning and architectural designs and is anticipated to speed adoption for the master plan. Already, by using CUBE to validate the effectiveness and sustainability of MIND mobility strategies, Systematica accelerated the master plan approval by six months. Additionally, their model has resulted in creating an effective dialogue with technology providers and mobility operators to explore and identify the most suitable solutions.

Leveraging the flexibility of CUBE helped Systematica model a more integrated and sustainable mobility solution—one that works within the campus and beyond, creating a benchmark for planning and designing future urban developments.

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Valtronic Selects Minerva PLM to implement industry best practices

19 October 2020

Minerva announced that Valtronic, a global full-service electronic contract manufacturing company with more than 35 years of experience in Class I to III Medical Devices including active implants, has selected the PLM solution Minerva PLM, powered by Aras. Valtronic is constantly looking to optimize its way of operating and streamlining the digital thread all the way from design inputs, to design outputs, verification, and validation.

With Minerva and Minerva PLM, "we found a partner who had a deep understanding of the industry challenges. Their solution featured a deeper and wider level of out of the box functionalities for our industry than we had seen with any other vendor." said Jean-Philippe Ruch, IT Director at Valtronic. "On top of that the Aras Platform underneath also provides the flexibility to support our highly specialized needs in some areas and at the same time being upgradeable".

Establishing the digital thread across Engineering, Manufacturing and more

The Minerva PLM solution will provide an integrated environment where Engineering data (part BoM, MCAD, ECAD) will be integrated with SAP and combined with quality and regulatory information (DHF, DMR, Risk Management, QMS). All combined with strong process to enable optimized design control and configuration management across all data in the digital thread.

Valtronic is dedicated to medical devices, from design and development to manufacturing and full assembly of machines with increasing complexity. This means delivering highest quality for devices encompassing electronics, mechatronics, fluidics and software to name only a few fields of expertise. BOMs are also getting larger and more complex thus requiring optimized Product Life Cycle Management. "This matches very well with Minerva, since we want to deliver the worldwide best PLM solution for Medical Device companies" said Leon Lauritsen, VP & Partner at Minerva. He continues:

"By selecting the Minerva and Minerva PLM, Powered by Aras, Valtronic now have a partner and a solution committed to their industry which we will expand further together with the industry to continuously enhance the competitive advantage it will bring to our customers."

Teaming up with CAD partner XPLM

An important Minerva PLM partner in the project, XPLM, will be leveraged for their expertise in integrating applications, processes, data and information to enable seamless information flow during system integrations.

Valtronic is a full-service contract manufacturer dedicated to medical devices. Worldwide companies rely on our 35+ years of experience to develop, industrialize and manufacture innovative Class II & III medical devices, including active implants. Our expertise includes turnkey devices, microelectronic assembly and miniaturization. Headquartered in Switzerland, our company spreads over three continents with sites in Switzerland, the United States and Morocco and employs more than 350 employees worldwide.

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Product News

Capgemini announces first set of Intelligent Industry offerings focused on 5G and Edge to enable data driven business transformation

23 October 2020

Capgemini today unveiled its first set of Intelligent Industry offerings that leverage the Group's pioneering capabilities in data, digital and industrial technologies. Focused on 5G and Edge, the new services will enable Communications Service Providers, Network Equipment Providers and Enterprises across industries to implement 5G and Edge technologies at scale, so that companies' products, assets and processes can unlock innovation and efficiencies within their business.

With the COVID-19 crisis putting a spotlight on an even greater need for industries to evolve, companies in all sectors are in the midst of rapid digital transformation. This means that the ability to connect devices and collect and utilize data is becoming business critical.

"We believe the future of industry is 'intelligent'," explains Franck Greverie, Chief Portfolio Officer at Capgemini and Group Executive Board member. "5G is more than just a faster technology, or an iteration of 4G. It's a new global cellular communications standard, that is bringing a step change in connectivity for the Internet of Things and all industries. As digital technologies converge, every type of organization can start to do business in new and better ways – with intelligent products, intelligent operations, and intelligent support and services. Our 5G and Edge offerings enable our clients to make the right investments in the foundation of their data-driven transformation to prepare to take advantage of this next industrial revolution."

Drawing on deep industry experience and technical expertise, Altran, part of Capgemini, has helped to develop a number of 5G applications. In Spain, Altran has been helping Vodafone deliver enhanced operations and maintenance with Augmented Reality (AR) for refineries; real-time monitoring of a drilling robot; search-and-rescue missions with Unmanned Aerial Vehicles (UAVs); and new in-harbor services such as virtual ticket offices.

"5G is central to our strategy, and Altran has helped us accelerate our 5G network buildout, supporting a number of use cases that have a tremendous impact on people and enterprises around the world," said Carlos Becker, Head of Enterprise Marketing and Public Administrations at Vodafone Spain. "Altran has kept us true to our commitments to clients and helped enhance our subscriber quality of experience with scalable solutions."

Capgemini's first set of Intelligent Industry offerings reflect the Group's expanded ability to design, develop and deliver tomorrow's products and services.

Combining technology, systems integration and engineering expertise as one, to help organizations make the right investments in the foundation of their data-driven transformation – and monetize them, Capgemini's new 5G and Edge offer includes:

Plan & Strategy – Digital Transformation: helping organizations identify 5G and Edge-based use cases tailored to specific sector needs, definition of a business case and creation of a digital strategy, architecture and transformation roadmap around these.

5G Network Infrastructure: helping companies to engineer and navigate the complex network and technology ecosystem, design and build an end-to-end network, IT and enterprise architecture blueprint and roadmap.

Strategic Service Platforms: designing and developing service platforms covering solution frameworks

for applications and services, and end-to-end Edge computing / Cloud.

Use Cases & Applications: helping clients to design, develop, set-up, test, and ensure return on investment of specific 5G and Edge use cases and applications (IoT, Edge, Cloud)

Ecosystem Orchestration & Integration: integrating and testing end-to-end solutions, to ensure convergence of network and IT based on industry specific process and operations expertise – coordinating integration of leading partners and open source solutions

5G End-to-end Business & Operational Services: transformation of operational processes; run and manage private / public/ hybrid network / Cloud solutions, monitor use cases and business processes performance, ensure security.

EOS and Ansys Pioneer Cutting-edge Additive Manufacturing Workflow

21 October 2020

EOS and Ansys are collaborating to provide an enhanced, streamlined workflow for developing AM parts. The new workflow teams EOS' metal systems for additive manufacturing with Ansys simulation solutions — equipping AM engineers to develop highly-precise parts, improve productivity, slash production time and deliver new products faster than ever.

AM adoption is accelerating across many industries, however, many engineers continue to use a trial-and-error approach and optimized process parameters for developing their desired geometries, which is quite expensive. Build failures result in reduced efficiency, increased development costs and a slower time to market. Together, EOS and Ansys are helping engineers determine and mitigate build failure issues prior to printing, so parts can be generated faster and more accurately for customers.

The new collaboration advances interoperability between EOS and Ansys technologies. As a member of the EOS Developer Network, Ansys will enhance user AM processes via Ansys simulations and expedite printing by sending jobs directly to EOS' 3D printing systems. Additionally, to enhance simulation fidelity, Ansys simulations integrate EOS-specific data by leveraging EOS' open-source application program interfaces. This integration will help improve part geometries by predicting and compensating for distortion and other issues to significantly reduce build failure and upgrade manufacturing processes to increase productivity. It will also improve material property selection by forecasting how design changes will affect the microstructure of parts. With the new workflow, users designed complex print jobs up to 20% faster and simple jobs up to 50-60% faster than previous methods.

"EOS and Ansys are transforming how companies worldwide design parts, enhance products and create leading-edge inventions," said Martin Steuer, senior vice president, Division Software at EOS. "Combining Ansys simulations with EOS 3D printing technology creates a seamless workflow that enables our mutual customers to reduce spending, increase reliability, boost efficiency and deliver products to market much earlier than the competition."

"Leveraging EOS scan vectors, Ansys simulations calculate and predict issues such as porosity, residual stress, thermal distortion and help users avoid potential blade crashes. This collaboration provides new levels of insight to users, making it easier for them to build complex parts more precisely," said Shane Emswiler, senior vice president at Ansys. "Uncovering these issues early using simulation empowers engineers to select the correct parameters and understand if a part can be built as-is or must be redesigned — ultimately greatly minimizing the number of builds by substantially reducing trial-and-

error failures, resulting in reduced material waste and substantial cost savings."

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Gerber Redefines Mass Production with Launch of Next-Generation Cutting Room

23 October 2020

Gerber Technology is revolutionizing the flexible materials processing industry with the launch of their end-to-end solution for mass production, which will be unveiled at their annual technology conference, ideation, on November 4-6. The connected platform features the new Atria digital cutting solution and the October 2020 release of AccuMark® 2D and 3D, AccuNest™ and AccuPlan™. With decades of industry experience, a rich history of innovation and feedback from it's global customer base, Gerber developed a next-generation, digital mass production solution that will offer the best throughput, quality and price per piece in the market.

The Atria digital cutting room leverages Industry 4.0 and IoT to seamlessly integrate with Gerber's pattern design, cut planning and nesting solutions, which connects the entire mass production process from CAD to the cut room. Gerber's latest product releases deliver what manufacturers need to succeed in the post-COVID world by integrating data management, improving efficiencies, reducing material waste, optimizing nesting and cutting production costs.

"We designed the Atria to be the most intelligent, integrated, and high-performance cutter the mass production market has ever seen," said Lenny Marano, Chief Commercial Officer at Gerber Technology. "The new normal COVID era is a challenge for many manufacturers and requires them to be agile and innovative. The Atria is backed by Gerber's end-to-end solution that will allow companies to easily adapt and respond to consumer demands and market challenges."

The Atria digital cutting room builds on the innovative spirit of Joseph Gerber, the company's founder and the pioneer behind the first automated cutting solution. As the industry's smartest machine to date, the Atria promises to transform mass production by improving overall throughput by 50%, reducing consumable usage by over 30% and improving material yield by 5% with zero buffer cutting in many applications at full speed. The intuitive solution will be a gamechanger for the workwear, denim, furniture, transportation and personal protective equipment (PPE) markets as it utilizes powerful algorithms to eliminate errors, reduces costs and ensure data integrity at every point in the process.

The Atria has already received high praise from early adopters who have been testing and leveraging the advanced cutting room solutions for several months. GDI Grupo Diamante Internacional, manufacturer of professional uniforms, emphasized the Atria's ability to cut even the toughest materials. The company has been able to cut 30% more material since implementing the Atria into their workflow . Apparel manufacturer, Lesato, has also seen a major improvement in cut quality. The Atria has allowed them to significantly increase their ply height while cutting faster and with absolute precision.

"Fashion and transportation industries were two of the industry segments most impacted by COVID-19, which meant manufacturers in these industries had to quickly adapt their processes, accelerate eCommerce and look for new ways to connect with customers and maintain a competitive edge," said Ron Ellis, Director of Hardware Product Management at Gerber Technology. "The Atria's state-of-the-art control technology and intelligent sensors enable versatility and make it the perfect solution for a variety of markets including apparel, transportation and furniture."

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New Release: ActCAD 2021

21 October 2020

ActCAD 2021 BIM, Professional, and Standard versions are available now with support for version 2021 .dwg/.dxf files, dynamic screen input, a new material library, new visual styles, many new commands, and much more. For the specialty ActCAD BIM version, other features include the ability to create roofs, beams, mitered joints, and to explode BIM underlays.

ActCAD is based on the IntelliCAD engine and is drafting and modeling software designed for engineers, architects, and other technical consultants who need to create and edit native CAD files.

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Siemens Energy and Bentley Systems introduce asset performance management solution for oil & gas operators

20 October 2020

Siemens Energy and Bentley Systems, Inc. have announced a joint solution that delivers intelligent analytics derived from domain experience to reduce operating expenditures associated with oil and gas assets. The new service, known as Asset Performance Management for Oil & Gas, or APM4O&G, incorporates key complementary offerings from both companies to help operators enhance asset performance, eliminate downtime, and reduce maintenance costs.

The APM4O&G solution combines Bentley's advanced asset performance software capabilities (AssetWise) with Siemens Energy's technology and service expertise to empower operators to improve maintenance operations and planning.

The solution, part of Siemens Energy's Omnivise digital solutions portfolio, supports maintenance activities across several assets, including onshore compressor stations and gas processing plants, as well as offshore production platforms and floating production, storage, and offloading (FPSO) vessels.

The APM4O&G solution adopts smart, condition-based strategies based on predictive analytics to optimize maintenance schedules in compressor stations and gas processing plants, helping extend asset life and keeping maintenance costs down. Offshore, the solution helps operators reduce logistics costs associated with unplanned maintenance activities. Operators can also make the best use of limited laydown and storage areas offshore by holding just the right spare stock based on risk-based maintenance strategies.

In addition to monitoring assets, the APM4O&G Solution can run powerful diagnostics and risk analysis scenarios that further optimize plant uptime, including failure mode effect analysis, an operational health index of equipment, and a remaining useful life estimate for an individual component or a whole system.

"APM for oil and gas is the latest example of how our strategic alliance with Bentley is driving value for our customers," said Laura Anderson, Head of Siemens Energy Services Controls & Digitalization business. "Through our combined offerings and expertise, the APM4O&G solution will help our customers manage maintenance costs, improve equipment reliability, minimize the risks of lost-time Incidents and serious injuries, and increase the performance and availability of their oil and gas production and processing infrastructure."

The introduction of the APM4O&G solution follows the successful launch of an APM solution for power plants, announced by Siemens Energy and Bentley Systems in 2018.

"We're excited to continue our strategic partnership with Siemens Energy to lower the risks and costs associated with maintaining the operations critical infrastructure," said Greg Bentley, CEO, Bentley. "Once again, our collaborative efforts, combined with advances in IoT, smart system diagnostics, and performance digital twins, are helping owner-operators reach new levels of efficiency and performance with their oil and gas assets."

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Synopsys Accelerates Power Electronics System Design with Virtual Prototyping Solution
19 October 2020

Synopsys, Inc. announced a virtual prototyping solution to accelerate power electronics system design from concept to validation for power components to large complex systems. As part of the solution, Synopsys introduced SaberEXP to deliver fast simulation convergence and higher productivity for early power component design, such as power converter and motor drive. SaberEXP also provides a seamless export flow into high fidelity large system design using Synopsys' industry-leading power electronics tool, SaberRD.

Electrification of automotive, aerospace and industrial systems is accelerating. According to McKinsey & Company, automotive is fueling the power electronics market expansion with an expected 15 percent compound annual growth rate between 2020 and 2030. Such systems require increasingly complex and efficient power electronics subsystems to ensure maximum power delivery and use. These changes have increased the development cost and reduced the productivity of developers. Better methodology and tools addressing concept design studies, electrical component selection, scalability to large systems including validation in the context of software, and dependency on expensive physical testbenches are required. The use of a scalable virtual prototyping solution from concept to validation of power electronics systems enables design teams to start development early and validate their design prior to physical implementation, leading to better products and lower development costs.

"As power electronics continue to advance in complexity, it's essential to validate designs early, well before physical implementation," said Peter Wilson, Professor of Electronics and Systems Engineering at University of Bath. "Fast simulation is absolutely essential to performing validation early and ensuring design fidelity. Synopsys SaberEXP provides a fast and efficient way to carry out rapid evaluations of design concepts before carrying out system level and complex multiple-domain analysis using SaberRD."

SaberEXP's high abstraction models and piecewise linear (PWL) solver provide high accuracy and convergence for power converters and motor drives for fast time to result. Key capabilities and benefits include:

Comprehensive general-purpose high-abstraction model library

High-speed mixed mode solver to verify the stability of switched mode power supplies

Parametric and statistical design capabilities to accelerate the optimization and verification of design robustness

Easier to use, with minimal simulation tuning, and more robust than SPICE-based tools

SaberEXP designs can be seamlessly imported into SaberRD allowing high-fidelity simulation, handling of large systems and leveraging a rich feature set for robust design. SaberEXP and SaberRD are part of Synopsys virtual prototyping products including Silver and Virtualizer™. They enable the

comprehensive design, development and verification of electronic systems including software.

"Automotive, aerospace and industrial embedded systems integrate increasingly complex and feature-rich power electronics, digital hardware and software," said Tom De Schutter, vice president of Engineering at Synopsys. "The introduction of SaberEXP enables our customers to deploy a faster, more productive and standardized solution for power electronics from concept to validation and leverage its integration with our broader virtual prototyping products for embedded system verification and validation."

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