PLM Industry Summary

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CIMdata News

CIMdata Announces Successful 2019 PLM North American Market & Industry Forum and Releases Its 2018 PLM Market Analysis

5 April 2019

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces the successful completion of its 2019 North American PLM Market & Industry Forum—the first in a series of five global events. This year's North American Forum was held in Ann Arbor, Michigan on 4 April 2019. There were 36 PLM industry participants representing 20 leading global PLM software and service providers.

CIMdata's PLM Market & Industry Forums represent the world's premier event for software and service providers focused specifically on the PLM market and the issues concerning its development and growth. Participants gathered to hear CIMdata's perspective on the state and trends of the PLM market, as well as a detailed discussion of CIMdata's research and viewpoints on the 2018 PLM market results. CIMdata's extensive analysis and forecasts regarding market growth across PLM domains, industries, and regions, and the performance (revenue and market share analysis) of leading PLM software and service providers was shared. The theme for 2019 is "Augmented Intelligence: Applications Across the Product Lifecycle."

In addition to the state and trends, the agenda included presentations on:

- Intelligence for Product Lifecycle Innovation

- Beyond Generative Design

- Predictive Maintenance–Benefits of Closing the Product Lifecycle Loop

- Getting to Markets of One

- Digitalization and MBSE: Market Trends, Challenges & Opportunities

Commenting on the PLM market, Stan Przybylinski, CIMdata's Vice President, stated that, "The PLM market, as measured by CIMdata, grew by 9.9% in the calendar year 2018, with growth in all segments, well above our growth forecast of 7.0%. The completion of Autodesk's license model transition drove well above average growth in the mechanical computer-aided design (MCAD) and architecture, engineering, and construction (AEC) segments. Computer-aided manufacturing (CAM), which most years grows in the 5-7% range also saw above-average growth at 9.5%. Simulation & Analysis had another very strong year, with 12.8% growth for the year. Smart connected products and the move to address Industry 4.0 drove above-forecasted growth in the Systems Integrator segment and software development tools. We also saw higher growth in the electronic design automation (EDA) segment, with the segment leaders Cadence, Synopsys, and the Mentor unit of Siemens PLM Software all growing strongly. Digital transformation is closely related to Industry 4.0 and is spreading across multiple industries. Making these changes will continue to require strong PLM processes and enabling environments, which will drive overall PLM market growth in the coming years."

The North American PLM Market & Industry PLM Market & Industry Forum is the first in a global series, with the next scheduled for 11 April in Frankfurt, Germany. Additional Forum sessions will take place in Pune, India on April 15; Beijing, China on April 19; and Tokyo, Japan on April 24.

The PLM Market & Industry Forums provide the first look at CIMdata's PLM market estimates. The full analysis will be released in the CIMdata PLM Market Analysis Report Series. For more information, please see www.CIMdata.com.

About CIMdata

CIMdata, a leading independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM) solutions. Since its founding in 1983, CIMdata has delivered world-class knowledge, expertise, and best-practice methods on PLM solutions. These solutions incorporate both business processes and a wide-ranging set of PLM-enabling technologies.

CIMdata works with both industrial organizations and providers of technologies and services seeking competitive advantage in the global economy. In addition to consulting, CIMdata conducts research, provides PLM-focused subscription services, and produces several commercial publications. The company also provides industry education through PLM certificate programs, seminars, and conferences worldwide. CIMdata serves clients around the world from offices in North America, Europe, and Asia-Pacific. To learn more about CIMdata's services, visit our website at www.CIMdata.com, follow us on Twitter: http://twitter.com/CIMdataPLMNews, or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA, Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands, Tel: +31 (0) 495.533.666.

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Acquisitions

Altair Acquires Cambridge Collaborative's SEAM® Software, Expanding Solver Portfolio

1 April 2019

Altair announced the acquisition of Cambridge Collaborative's SEAM® software, best-in-class high-frequency noise and vibration predictive technology.

Increased exposure to comfortable, quiet cockpits, cabins and appliances are driving consumer demand for improved sound quality and user experience. Cambridge Collaborative has been a world leader for more than 45 years, as evidenced by their impressive client roster - ranging from defense, major auto and aerospace OEMs to commercial products. The addition of SEAM® software to Altair's portfolio of simulation and solver solutions creates a more expansive, comprehensive portfolio for solving tough engineering problems.

"This sophisticated software has helped launch submarines, spaceships, cars and planes, and we are confident it will be a strategic complement to Altair's portfolio," said James Scapa, Altair's chief executive officer and founder. "We continue to focus on our mission of enabling our customers to innovate intelligently through the use of our cutting-edge algorithms."

Sound quality and design play a critical role in the success and adoption of new products across a wide range of industries, as they are associated product quality. Statistical energy analysis (SEA), embedded into SEAM® software allows engineers and designers to identify and solve noise and vibration problems early in the design cycle, saving critical time and money, shortening the product development cycle and improving user experience.

"This is a terrific day for SEAM customers; not only can they continue to use SEAM to help their ideas take flight, but they soon will enjoy the benefits of the Altair ecosystem," said Dr. Patricia Manning, president of Cambridge Collaborative. "Engineers appreciate us because we have been by their side through our people and products helping them explore, protect and soar – and that's only going to improve exponentially with Altair."

SEAM® software will fall under the Altair HyperWorks™ platform and will be integrated with other Altair technologies like NVH Director and OptiStruct for noise and vibration analysis, and UltraFluidX to simulate noise with external aerodynamics studies.

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Nagarro Joins Forces with Farabi and Solutions 4 Mobility in the UAE

4 April 2019

Nagarro has acquired a controlling position in Dubai-based Farabi Technology Middle East LLC and its subsidiary Solutions 4 Mobility LLC, both award-winning technology companies focusing on digitalization and mobility across the GCC region.

Digital transformation is high on the agenda for the Middle East as it transitions to a knowledge-based

economy. For over two decades, Farabi has been driving business process and application integration for leading companies in this region and has become a key technology enabler in domains such as government, banking, insurance, healthcare and transportation. Its subsidiary, Solutions 4 Mobility, has established itself as one of the leading digitalization and mobility partners for forward thinking organizations.

Bachar Kassar, Founder and Managing Director of Farabi, said, "I'm very excited to be able to create global opportunities for our talented colleagues and to deliver the top-class global capabilities of Nagarro to our existing clients." Manas Fuloria, Co-founder of Nagarro, said, "We have already been collaborating with Bachar and his colleagues for over a year and are very impressed with both their engineering skills and their commitment to client delight. We also think the companies are similar from a cultural perspective. We eagerly look forward to deepening our working relationship and having fun doing so."

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Company News

Accenture Expands Industry X.0 Footprint with New Innovation Centre in Bilbao, Spain

3 April 2019

Accenture is expanding its Industry X.0 Innovation Network in Europe with a new centre in Bilbao. The Industry X.0 Innovation Centre will help clients from the Basque Country, Spain and Europe take advantage of digital technologies to transform core industrial operations, worker and customer experiences, and business models.

Located in the Technology Park of Zamudio, Bilbao, the centre opened on April 3, 2019. Iñigo Urkullu, President of the Basque Country Government, and Juan Pedro Moreno, country managing director of Accenture in Iberia, attended the opening.

The new centre allows clients to explore, test and scale innovative IX.0 solutions based on the latest disruptive technologies, to become more efficient and to identify new sources of growth.
Recent Accenture research shows the majority of Spanish executives are prioritizing developing innovative products and services (60 percent) and making operations more efficient (60 percent). Three in four recognize the need to become better at applying digital technologies to industry.

Industry X.0 is how Accenture defines the digital reinvention of industry, when businesses use advanced digital technologies to transform their core operations, their worker and customer experiences and ultimately their business models. When applying Industry X.0, new levels of efficiency are achieved in the core of R&D, engineering, production, manufacturing and business support through integrated systems, processes, sensors and new intelligence.

To achieve these goals for clients, Accenture's new centre will collaborate with leading companies and organizations from the industrial innovation ecosystem. This includes technology centres and universities, the Basque Science and Technology Network, and Accenture's global network of innovation centres. It will also have a strong focus on cybersecurity.

"Accenture's new Industry X.0 Innovation Centre in Bilbao will be part of the Industry 4.0 ecosystem of

Basque Country," said Juan Pedro Moreno, Accenture CMD in Iberia. "It will drive innovation for clients in industries including aerospace, automotive, consumer goods, industrial equipment, renewable energy and transit. It will connect them to our global network of innovation centres for X.0 Industry, including France, Germany, Italy and the United States."

Its international focus positions the centre uniquely in Basque Country's industrial ecosystem. A key differentiator is the centre's combination of five capabilities for clients: industrial intelligence, connected worker, agile operations, service operations, and industrial cybersecurity – enabled by a range of applied technologies. These include extended reality, digital twins, artificial intelligence, machine learning, 5G, Industrial IoT, blockchain, and collaborative robotics. The range of services provided to clients span ideation, co-creation and scaling of new business strategies, prototypes, case studies, and solutions.

"There is opportunity for the Spanish industry to improve its competitiveness in the global economy through the right combination of digital technologies and business models," said Carlos Gallego, managing director of Industry X.0 in Accenture. "Our research shows that many companies aren't getting greater efficiency, cost savings and business growth from their digital investments. It's vital they reinvent their operating models and redefine their value chain to become true X.0 companies. We are committed to help Spanish companies master the digital reinvention of industry, which is a key sector of the country's economy."

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Centric Software Celebrates 300 PLM Customers

2 April 2019

Centric Software is celebrating the signing of its 300th customer.

Over 300 companies now use Centric PLM to support strategic digital transformation initiatives to collapse time to market, boost innovation, reduce costs and improve product margins for more than 850 brands. It's a significant milestone in an exciting period of growth for the PLM pioneers, who continually demonstrate their commitment to new innovations, geographies and verticals.

Recently unveiled innovations include the visual and collaborative Centric Visual Innovation Platform (CVIP) Digital Concept Board, a digital sandbox for creative collaboration and what-if scenarios for design, merchandising and production/sourcing teams, as well as the CVIP Digital Buying Board, which streamlines buying decisions for retail, wholesale and e-commerce by aligning product and category teams, merchants, internal buyers and sales on a single, transformative platform. Centric recently released version 6.5 of its flagship Centric 8 PLM solution, which focuses on high-volume sourcing for retailers and 3D innovation, and also launched the first artificial intelligence-based PLM feature, Centric AI Image Search.

Sixty-nine companies selected Centric as their PLM partner in 2018, including premier Chinese sports brand Li Ning, French retail group ADEO and American lifestyle brand, vineyard vines. Centric is building a presence in new regions, including Brazil, India, Sri Lanka, Turkey and South Korea. Meanwhile, Centric has expanded into new markets for its modern and mobile PLM solutions, such as multi-category retail, cosmetics and home décor. Centric's strategic partnership with Dassault Systèmes, announced in June 2018, creates new opportunities to accelerate the digital transformation of Centric

customers using the combined expertise of both companies.

"We're delighted that we chose Centric Software, to support the development of our upcoming MDH International projects, in collaboration with all business units," says Sophie Kolb, Market Leader and PLM Project Sponsor at ADEO, the world's 3rd largest DIY retailer. "The configuration possibilities of the tool and Centric's understanding of our business has reassured our choice of the solution and we're looking forward to this partnership."

"We chose Centric 8 PLM as fast adoption of a new PLM platform was very important to the Li Ning team, and Centric PLM is both flexible and user friendly. Centric PLM meets our needs as it caters for both flexible supply chain management and our e-commerce needs," says Li Ning IT Director, Zhu Yuan Gang. "Centric's global and local teams are experts in the fashion and apparel industry and we are impressed by their passion and reliability."

"We are delighted to announce that over 300 companies trust Centric Software to deliver PLM solutions that support their digital transformation goals," says Chris Groves, President and CEO of Centric Software. "Through our commitment to innovation and relentless focus on the needs of the fashion, retail and consumer goods industries, we are expanding the boundaries of PLM to empower our partners to do what they do best: create and sell amazing products."

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EGIS Goes Live with ShareAspace for Major Construction Project

2 April 2019

Eurostep is proud to announce that ShareAspace is now operational with EGIS for the management of "interfaces" allowing for better planning and use of resources in infrastructure construction projects. Initial use is for a tram project in Birmingham, UK.

EGIS with its 13,600 people are dedicated to supporting energy, ecology, digital and territorial transition to shape tomorrow's world.

Large infrastructure projects consist of many subsystems which need to be integrated with other subsystems and consolidated into the final delivery. And clash and lead time extension have a negative impact on work plans comes with a cost and delays. Within a project this synchronization is key to deliver the expected result in time and on budget.

INMASYST© based on the Eurostep's software ShareAspace is used to enable Interface Managers to support the collaborative process between all the stakeholders in the design phase and building phase. The use of ShareAspace makes it possible to share all the required information from documents to requirements and reference data. It gives the project a solution to assign tasks and to trace the progress till the closing.

"We are proud about being able to support a leading and global actor like EGIS," says Håkan Kårdén, Director Marketing at Eurostep. *"The collaborative approach of ShareAspace is well suited for this generic type of problems in the construction domain. It was also great to see that we could implement the solution with minimal customization as customization typically drives cost over time,"* ends Mr Kårdén.

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EON Reality and Toyota Academy Announce Partnership to Utilize Augmented and Virtual Reality Solutions

27 March 2019

EON Reality Inc., leader in Augmented and Virtual Reality-based knowledge transfer for industry and education, and Toyota Material Handling, leader of material-handling solutions, announce the establishment of the partnership to bring Augmented and Virtual Reality (AVR) technology for both training purposes and to support Toyota's Customer Lean Transformation.

The pairing will combine EON Reality's flagship AVR Platform with the Toyota Production System, a methodology developed by Toyota to maximize efficiency in production. The first collaboration is dedicated to 5S training, but the companies' shared vision of Industry 4.0 will allow high-end AVR solutions to be used for training, sales, and maintenance purposes.

At this month's EON Experience Fest 2019 in Bologna, Italy, EON Reality and Toyota Material Handling Italia will demonstrate the first beta product and better outline the partnership's ultimate goals. Early AVR training modules will focus on forklift operators and drivers before moving into areas such as Toyota's automated warehouses. The two companies will then work together in joint workshops to decide how to best accelerate the use of AVR technology in Toyota's portion of the industrial sector.

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LEDAS Celebrates 20th Anniversary with New Office

1 April 2019

LEDAS, Ltd., provider of research and development services for the CAD/CAM/CAE/PDM software industry, today announced that for its 20th anniversary it has relocated to brand-new offices in the Academpark office park of Novosibirsk, Russia.

LEDAS began in 1999, gaining extensive experience over the next two decades from implementing dozens of software projects. Over the years, LEDAS worked on technically advanced geometric engines, such as LEDAS Geometric Solver and a 3D geometric kernel. Today, LEDAS offers a broad range of expertize in computer-aided design and manufacturing (CAD/CAM).

The largest and most significant project involved LEDAS cooperating with Dassault Systemes. The work spanned 12 years, developing components for Dassault's CATIA CAD program and GCM kernel. The project deployed expert programmers and mathematicians at LEDAS in developing a state-of-the-art geometric constraint solver for the world's largest CAD software company.

New areas of expertize launched by LEDAS in past five years include the use of CAD in medicine (particularly in dentistry), in building information modeling (see BIM), operating CAD in the cloud (see LEDAS Cloud Platform), and further projects in many other areas of CAD/CAM.

Five Years of Growth

During the last five years, LEDAS tripled its revenues and diversified its business by landing more customers in different markets and in new geographic areas. LEDAS begins its 21st year by working on

20+ CAD software projects for more than a dozen customers in the USA, Europe, Russia, and China.

The fastest growth is in the USA, where LEDAS enjoys its largest share of revenue at 40% to 50% last year. The former #1 market, Europe, is now the second largest market for LEDAS, with 30%-40% of revenue. Russian customers are in third place with 10-15% of revenue, and China generates 5% for LEDAS.

New Office for LEDAS Headquarters

Recently LEDAS made an important investment by acquiring a new headquarters at Academpark's Center of Research and Development, a top Russian IT hub, and has now moved into the offices.

"Our upcoming anniversary gave us the motivation to relocate the company to a new headquarters building," says Alexey Ershov, CEO of LEDAS. "We needed a significantly larger working space for our team, which the new facility gives us with nearly 1,000 square meters of floor space and fiber optic Internet connections."

The new facility also gives LEDAS the stability of ownership, as the company owns the entire floor of the newly constructed building at Academpark. Having the new office provides LEDAS with great opportunities in expanding its business and carrying out its high quality work more efficiently for existing and new customers.

Markforged joins Siemens' Foundation Partnership Program to Promote Industrialization of Additive Manufacturing through Improved Software/Machine Integration

1 April 2019

Markforged, a leading industrial 3D printer manufacturer, announced today that the company is joining the Siemens foundation partnership program to collaborate on a new advanced software and machine integration for scaling industrial additive manufacturing innovation and productivity.

Industrial manufacturers creating cutting-edge products are frequently using generative design and performance analysis tools to optimize designs and accelerate the product development process. The primary result of these simulations are parts that can only be produced through additive manufacturing. Siemens' NX™ software is a leading integrated solution for computer-aided design, manufacturing, engineering (CAD,CAM,CAE), and additive manufacturing. With the integration of NX and Markforged's cloud-based software, Eiger, companies will be able to design highly innovative parts made of metals, advanced composites and carbon fiber-filled plastics, then seamlessly print those parts with Markforged's additive manufacturing systems.

"The partnership between Markforged and Siemens can help customers streamline the process to go from a performance-validated digital design to an additively-produced part," said Greg Mark, CEO and co-founder of Markforged. "With a plethora of common industrial customers, Markforged is uniquely positioned to partner with Siemens PLM Software and help large organizations easily use and recognize value from the latest design tools and additive technologies."

"With the emergence of the fourth industrial revolution, technology is enabling companies to integrate the virtual and physical worlds to design and manufacture products with optimized performance. This only works when systems are tightly integrated and seamlessly communicate," said Zvi Feuer, Senior

Vice President of Manufacturing Engineering Software for Siemens PLM Software. "Siemens' partnership with Markforged can provide our mutual customers with an optimally integrated design to manufacturing environment to realize the full potential of the digital factory."

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Open Industry 4.0 Alliance: An Open Ecosystem for the Digital Transformation of Industrial Manufacturing Plants

2 April 2019

At Hannover Messe 2019, European companies from the mechanical engineering, industrial automation and software industries are driving the foundation of the Open Industry 4.0 Alliance with a cooperation agreement.

Founding members include Beckhoff, Endress+Hauser Group, Hilscher, ifm, KUKA, MULTIVAC and SAP SE. The alliance is open to all companies; other members include Balluff Group, Gebhardt Fördertechnik, Pepperl+Fuchs, ARVOS GmbH | SCHMIDTSCHE SCHACK, SAMSON and WIKA Alexander Wiegand.

- Founders and members endorse an open ecosystem and commit to using an Open Industry 4.0 Alliance Framework to achieve interoperability

- The open and interoperable approach provides attractive opportunities for companies of all sizes

- The Open Industry 4.0 Alliance aims for 80 percent of the machines in a smart factory to speak the same language

Members of the alliance are committed to creating a standardized and open ecosystem for operating highly automated factories and plants, including logistics and services. The alliance is working to avoid proprietary stand-alone solutions to better enable digital transformation in European industry. The companies plan to work with future members to create what is known as an Open Industry 4.0 Framework on the basis of existing standards such as IO-Link, OPC UA and RAMI.

Focus on Feasibility and Benefits

Operations in factories, plants and logistics centers in midmarket and large enterprises are characterized by heterogeneity — with things of many different classes, from many different manufacturers. Proprietary and varying standards in connectivity, data management, IT security and collaboration create additional effort and impede the rapid and comprehensive scaling of Industry 4.0. The founders and members of the Open Industry 4.0 Alliance pledged to provide customers with an open, standards-based, and compatible offering for a product's entire journey — from the object on the factory floor to service.

Customers can select what they need from a set of modular, compatible and scalable solution and service components. In each case, these build on the core competencies of the founders and members of the alliance and represent a low-risk, manufacturer-independent option from existing and known suppliers in the discrete manufacturing and process engineering industries. The connection to SAP solutions helps ensure that business processes such as manufacturing execution, warehouse management or plant maintenance are collaborative across company boundaries with partner companies.

Open and Interoperable Solution

The open, standards-based offering of the Open Industry 4.0 Alliance includes four modules — Device Connectivity, Edge, Operator Cloud, and Cloud Central — plus an associated service offering. Device Connectivity establishes the connection to the machines and sensors. Edge is the central node for all the important and locally necessary functions in the factory. Operator Cloud is the central node in the customer's company that an open layer and supports all enterprise-centric functions and applications. Finally, Cloud Central enables the bidirectional exchange of data between companies, such as master data and measurement data from calibrations, as well as information including technical documentation and repair manuals.

The first proofs of concept were completed in 2018, with adaptable and flexible matrix production at KUKA. The aim is to produce additional proofs of concept from members and their customers by mid-2019. The founding members are preparing their first results for the second half of 2019.

What the Project Partners Say

Florian Hermle, Managing Director, Balluff Group: "We want to afford our customers openness and the greatest possible compatibility with our systems, because we are convinced that going it alone in a digital and highly connected world is doomed to failure in the long term. That is why we put our trust in an open ecosystem comprising technology, software and partners, which enables us to support our customers with our innovative integrated solutions on the path to the smart factory. We are therefore pleased to be part of the Open Industry 4.0 Alliance."

Gerd Hoppe, Corporate Management, Beckhoff: "As an automation provider of open control technology, Beckhoff welcomes the alliance's initiative to design and propagate an open infrastructure for operators of cloud technologies in the capital goods sector. It makes managing the entire lifecycle of systems and plants significantly easier for operators in the process industries, production technology and logistics."

Matthias Altendorf, CEO, Endress+Hauser Group: "The open architecture of the Open Industry 4.0 Alliance meets all the requirements of the process industry. It is built on standards, ensures transparency across all business processes and guarantees the integrity of systems. With it, operators of process engineering plants can leverage the potential of Industry 4.0."

Marco Gebhardt, CEO, Gebhardt Fördertechnik: "Right from the start, we designed our product GEBHARDT Galileo IoT Cloud to be open. Within the framework of the Open Industry 4.0 Alliance, we are now taking the next step toward compatibility at a much higher level. This benefits our customers: they can digitalize their automatic warehouse systems fast and easily, downtimes are avoided, and productivity and availability increase."

Hans-Jürgen Hilscher, Managing Director, Hilscher: "Our customers want to put Industry 4.0 and all that it promises into practice. In the light of this, they are entitled to expect an open approach from us. For example, our solutions must be able to process several fieldbus technology standards."

Dr. Thomas May, Managing Director, ifm Corporate Group: "Our customers demand open and compatible collaboration, where every company can contribute and demonstrate their own strengths. The Open Industry 4.0 Alliance is the answer to these demands!"

Reinhold Stammeier, Chief Digital Officer, KUKA: "There are many stand-alone solutions on the market. However, customers demand end-to-end connectivity on the shop floor and a secure connection from the machine to the cloud. They demand more than a technical solution. More added value can only come from a common approach for semantic data models and data exchange between operators and

manufacturers."

Christian Traumann, Executive Director and Group CFO, MULTIVAC: "With cloud-connected machines, we can offer our customers not only more intelligent machines but also better service. Through our involvement in the Open Industry 4.0 Alliance, we ensure that MULTIVAC solutions in the Industry 4.0 environment are designed to be sustainable and compatible with common market standards."

Dr. Jörg Nagel, Director Technology and Operations, Neoception, a subsidiary of Pepperl+Fuchs: "The Open Industry 4.0 Alliance is an important step toward realizing new data-based business models by means of a standardized architecture for communication from the shop floor to the cloud, and thereby guaranteeing the data sovereignty of the operators of industrial assets."

Dr. Thorsten Pötter, Chief Digital Officer, SAMSON: "We see the Open Alliance as an important way to achieve added value for our customers through digitalization. SAM DIGITAL, the digital portfolio from SAMSON, is designed to harmonize optimally with the services of the Open Industry 4.0 Alliance. With its balanced understanding of architecture's openness and security and the resulting solutions, the seamless integration of SAMSON Asset Management solutions is one of the next logical steps for us."

Hala Zeine, President, Digital Supply Chain and Manufacturing, SAP: "Members from the mechanical engineering industries, industrial process automation and software profit from the mutual pledge of all the alliance members to take action. This means all members can develop and offer their relevant and compatible solution and service portfolios. The key takeaway is that the combined customers of the alliance will benefit by having relevant data across their assets, as well as compatible solutions for greater equipment efficiency to help them achieve their digitalization goals faster."

Karsten Stückrath, President, ARVOS GmbH I SCHMIDTSCHE SCHACK: "The complexity of Industry 4.0 technologies demands new approaches to solving a problem. Isolated products will not prevail in the long run, customers want to have standardized solutions. Thus the Open Industry 4.0 Alliance offers an ideal platform to generate true added value for our customers."

Axel Kaltofen, Executive Vice President, Industrial Instrumentation, WIKA Alexander Wiegand: "From the customer's standpoint, the standardization of different interfaces is the basis for effectively realizing new business models and achieving enhanced process optimization. For WIKA, the Open Industry 4.0 Alliance is the right step toward standardized interfaces for cross-industry networks of data and processes through the digitalization of software and hardware assets."

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Plattform Industrie 4.0 and Industrial Internet Consortium Deepen Collaboration

1 April 2019

The [Industrial Internet Consortium® (IIC™)](#), now incorporating OpenFog, and Plattform Industrie 4.0 today announced that they have deepened their relationship. The two organizations work together to drive global interoperability and advance the IIoT. Leaders from each organization will be available to discuss their joint projects at Hannover Messe.

The first of these new joint projects undertaken by the two organizations will focus on security, edge

computing, Industrie 4.0 components and digital twin. To demonstrate and validate that the concepts and standards work, we will produce a whitepaper on a common understanding of digital twins as well as set-up joint testbeds. IIC will be in Hall 8, Stand D23 and Plattform Industrie 4.0 will be in Hall 8, Stand D24.

"Plattform Industrie 4.0 was the first agreement we signed with a national organization three years ago and our joint work has been working extremely well," said IIC Executive Director Dr. Richard Soley. "We enjoy shared goals for the manufacturing space and complement each other well with Plattform Industrie 4.0's depth of knowledge in manufacturing and supply chain and our horizontal view across many industries."

"We are more than happy to be able to continue the success story of our collaboration," said Plattform Industrie 4.0 Secretary General Henning Banthien. "This is the right time to take another big step towards implementation of Industrie 4.0. The asset administration shell is already being put into practice and we are looking forward to launch more joint testbeds to make Industrie 4.0 a reality for companies big and small."

"This is good news for the industry that IIC and Plattform Industrie 4.0 are working together. There is an evolution of digital twin going on right now and it's important that the two most influential organizations driving IIoT and Industrie 4.0 are so closely aligned," said SAP President Digital Supply Chain & Manufacturing Hala Zeine. "Industry standards only work if everyone agrees to the same standard. Ensuring global collaboration makes a lot of sense and is good for the entire supply chain."

In addition to their joint projects, IIC and Plattform Industrie 4.0 plan to launch joint testbeds. One potential testbed complementary to both organizations is the IIC Smart Factory Web testbed, operated by IIC since September 2016 and led by Fraunhofer IOSB and KETI, with participants Microsoft and SAP. This testbed investigates integrated architectures and technologies for a web of distributed smart factories based upon the international standards OPC UA and AutomationML. Next, digital twins based on the concepts of the asset administration shell of the Plattform Industrie 4.0 will be evaluated. This testbed will be demonstrated at the IIC member pavilion at Hannover Messe.

At the Plattform Industrie 4.0 pavilion the first interoperable asset administration shells developed conformant to the development-ready specification(s) of the asset administration shell of the Plattform Industrie 4.0 will be presented. There are several talks at the Forum Industrie 4.0 for deepening the knowledge of the asset administration shell as a clearly defined implementation of a digital twin. To mention only some of them: "The Administration Shell on its way to a dependable specification" from Dr. Michael Hoffmeister (Festo), "Semantics for the Asset Administration Shell – what is still to be done" from Dr. Birgit Boss (Bosch) and "Package file format for the exchange of information in the value chain of Industrie 4.0" from Dr. Marco Mendes (Schneider Electric). The panel discussion Talk @3 on 2nd April "The Digital Twin – Interoperability into the Cloud" will give further insight.

The two organizations first demonstrated their collaboration at Hannover Messe 2017 where they presented a joint real-time demonstration that showed the IIC Industrial Internet Security Framework and the concepts of secure cooperation in cross company environments developed by the Plattform Industrie 4.0. Mimicking a real-world, multi-vendor, distributed environment, the demonstration integrated demos from more than 20 IIC member companies and Plattform Industrie 4.0 partner companies spanning multiple booths at Hannover Messe and remote sites around the world.

In 2018, IIC and Plattform Industrie 4.0 published a joint whitepaper − Architecture Alignment and Interoperability – which documents the highly complementary nature of, and details the mapping and

alignment between, their two leading IIoT reference architecture models: the IIC Industrial Internet Reference Architecture (IIRA) and the Plattform Industrie 4.0 Reference Architectural Model Industrie 4.0 (RAMI 4.0).

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Revolution In Simulation Adds Digital Twins to List of Implementation Topics

2 April 2019

Revolution In Simulation, the industry collaboration and technology alliance created to accelerate innovation through the democratization of engineering simulation, announces the addition of simulation-based Digital Twins to its growing line-up of implementation topics. Digital Twins reflect the ongoing status/condition of products in use. Correlating these continuously updated models to the actual in-field loadings and boundary conditions obtained from sensors allows Digital Twins to anticipate needed maintenance and predict the behavior of future proposed operational changes to the physical structures and systems represented in digital form.

Rev-Sim.Org Digital Twins Moderator Dr. Dennis Nagy, CAE Industry Veteran and Principal of Beyond CAE, comments: "Digital Twins ingredients have been around for a while, but their synergistic combination is just now bearing initial business fruit. As a result, related technologies and applications will see significant growth. Like all *How it Works* topics, The Digital Twins area of Rev-Sim.Org is quickly becoming industry's go-to source for more in-depth background information and the latest relevant end-user enterprise and vendor case studies and success stories."

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Schneider Electric accelerates its practices of gender equality and inclusion forward with 100% leadership commitment to UN Women's Empowerment Principles

3 April 2019

Schneider Electric announced that it is the first multi-national company to achieve 100% commitment to the UN Women's Empowerment Principles (WEPs) across its global leadership team. In addition to the company's Chairman and CEO, Jean-Pascal Tricoire, each of the company's country presidents in markets with at least 10 employees have also personally signed the WEPs, further committing the company to its practices of gender equality and inclusion. The action is the latest initiative from the company, which has been a longstanding and active change agent for gender equality in both its own operations and in the communities in which it operates.

Unanimous leadership commitment to empower women

Developed in 2010 through a joint initiative from UN Women and the UN Global Compact, the WEPs are a set of seven principles serving as guidelines for firms to advance gender equality and women's empowerment in the workplace, marketplace, and community.

The first four principles encourage leadership commitment to achieve gender equality in the workplace, through company goals and by providing equal opportunity and treatment for women and men. More broadly, the principles promote partnerships with women entrepreneurs, marketing practices respectful

of women and leadership in local communities through transparency, empowerment and advocacy initiatives.

The WEPs are consistent with existing Schneider Electric practices and goals. One of the company's core values is inclusion, which it exhibits in part through ongoing efforts to improve the attraction and retention of women employees at every stage of the employment lifecycle.

In support of these efforts, the company has deployed a rigorous pay equity framework and Global Family Leave and flexible work policies. The Global Family Leave Policy launched in 2018 and has been implemented in 59 countries, making parental, care, and bereavement leave accessible to 75% of Schneider Electric's workforce, with an ambition to cover 100% of the workforce by 2020. Similarly, 92% of the workforce is covered by the pay equity framework, with an ambition of reaching 95% of Schneider workers by 2020.

"All of our country presidents have committed to the WEPs to drive gender equality everywhere," said Schneider Electric Chairman and CEO Jean-Pascal Tricoire. "Our business leaders own and locally translate our ambition to provide equal chances of success to women and men. They help them to learn and grow in their professional journey, they partner with like-minded external organizations, and they extend their efforts to society at large. We are aligned on building long-term gender equality across our markets and operations."

Schneider Electric's efforts to empower women in a multi-local world

The company's strong and longstanding commitment to gender equality has been recognized not only globally but also in the diverse markets where it operates. The company's renewed global membership in the Bloomberg Gender-Equality Index has been mirrored multiple times at country and zone level, including in:

- The United States, where Forbes has listed the company among the 2019 Best Employers for Diversity;

- India, where it has been selected as one of the four global 2019 Catalyst Award winners for its holistic approach to attracting and retaining women over the past four years;

- France, where it has been ranked as one of the top companies for pay equity in 2019;

- Russia, where it received the 2018 Woman Who Matters award; and

- Brazil, where the company received the 2018 Women Leadership Award from the Brazilian Business Council for Sustainable Development.

These recognitions not only celebrate the achievements of local leadership to implement Schneider's global inclusivity values but also the unique policies and practices leaders have developed to attract and retain the best local talent in their markets.

The WEP commitment by 100% of Schneider Electric's country presidents is more than a public declaration; it is a major step towards Schneider's bold ambition to become the most diverse, inclusive and equitable company in the world.

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Siemens and SAS partner to deliver AI-embedded IoT analytics for edge and cloud

2 April 2019

Siemens Digital Industries Software and SAS announced a new partnership today that will help companies create new IoT edge and cloud-enabled solutions by applying SAS and open source streaming analytics through Siemens' MindSphere. Users will gain access to industry-leading SAS advanced and predictive analytics in MindSphere, which can accelerate the adoption of machine learning (ML) and artificial intelligence (AI) in Internet of Things (IoT) environments. Increasing productivity and reducing operational risk through powerful predictive and prescriptive maintenance and optimized asset performance management are just some of the ways these new solutions can benefit customers working in a range of industries including manufacturing, healthcare, energy & utilities, smart cities, transportation and automotive.

Siemens and SAS will collaborate to engage with new and existing customers and, beginning with streaming analytics, enable near-real-time embedded AI for IoT devices at the edge. The partners expect the solutions to be generally available later this year.

"SAS is a recognized world-leader in advanced analytics, machine learning, and artificial intelligence. We are excited to leverage their analytics in MindSphere," said Stephen Bashada, Executive Vice President and General Manager of Siemens MindSphere. "The combination of Siemens' deep industrial domain knowledge with SAS' deep analytics knowledge is a powerful step forward for IoT."

By intuitively applying AI and operationalizing its potential at scale, the partnership can drive a world class end-to-end solution framework for customers. Companies currently using both SAS and MindSphere will be able to port and deploy previously developed SAS models natively into MindSphere while new users will gain access to powerful analytics capabilities.

"Siemens' pedigree in innovative operational assets, software and processes is unmatched. Their commitment to digitizing the world's industries provides a unique platform for IoT to realize its full potential through AI," said Jason Mann, Vice President of SAS' IoT Division. "Our partnership can accelerate adopting the transformative value of IoT for our customers."

Siemens' MindSphere is the cloud-based, open IoT operating system that connects real things to the digital world through open connectivity. It enables powerful industry applications and digital services to drive business success. MindSphere also enables a rich partner ecosystem to develop and deliver new applications providing a basis for new business models. With its rich APIs, MindSphere applications can be quickly and easily developed by Siemens, its partners, or directly by customers. In combination with Siemens' industry-leading approach to holistic digital twins, companies can leverage MindSphere to close the loop through product ideation, realization and utilization to seamlessly integrate IoT data throughout the value chain –driving operational efficiency and innovation.

SAS AI and IoT technologies support diverse environments and scale to meet changing business needs -- for IoT data at the edge or in the cloud, in motion or at rest. With SAS IoT Analytics solutions, business and technology leaders can understand machine operational and behavioral patterns, develop fast and accurate predictions, and make optimal decisions with greater confidence while reducing data movement, latency and storage costs.

SAS advanced analytics algorithms capture and analyze large amounts of data gathered from industrial control systems and converge IT and OT worlds by using derived actionable insights to drive intelligent operational and business processes. SAS' investment in IoT analytic open source compatibility allows

data scientists to code in their language(s) of choice while relying on the resiliency and comprehensive scalability of SAS. By fundamentally changing the way IT and OT handle data and extract insights, customers can see patterns and trends they would never have seen otherwise. SAS IoT Analytics with embedded AI is a key differentiator for customers to unlock real value from data.

Siemens and SAS will exhibit together in the MindSphere Pavilion (Booth #D35 – Hall 9) during the Hannover Messe 2019 event. Visitors to the exhibit will see demonstrations of streaming analytics used for remote asset performance management. Gerhard Altmann, SAS Global Manufacturing Industry Senior Director, will present more details about edge-to-cloud streaming analytics in the booth on Wednesday, April 3, from 2 to 3:30 p.m. (GMT+1).

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VMware Innovates with a New Way to 'Connect' With Partners Through New Partner Program

2 April 2019

VMware, Inc. announced a fundamental transformation of its partner program landscape, re-imagining the way the company does business with and for its partners to deliver simplicity, choice and innovation.

At the company's Partner Leadership Summit, VMware unveiled VMware Partner Connect, a new, dramatically simplified and flexible program that will go live early next year. The program will enable partners to do business with VMware in a way that aligns to their business models. VMware Partner Connect will empower partners with flexibility to meet customers' needs, making VMware technologies and services opportunities more accessible. Partners will have an enhanced experience that recognizes and rewards them based on the value they bring to customers, creating a clearer path to profitability.

"VMware is introducing a new way of partnering; we have listened to feedback from our partners, and VMware Partner Connect will be our singular partner program for any business model," said Jenni Flinders, vice president, Worldwide Channel Chief, VMware. "With this new program, we are making it very simple for partners to co-sell and co-invest with us, as they align to next-generation VMware technologies and drive superior value throughout the customer journey."

VMware Partner Connect will offer three tiers: Partner, Advanced Partner, and Principal Partner. Principal Partners will be the most capable partners to help customers identify and implement ideal VMware solutions as evidenced by achievement of Master Services Competencies across different strategic IT priorities. Partners achieving Principal status will earn comprehensive rewards including deployment and consumption incentives and prioritization for joint-business planning and co-selling opportunities with VMware.

VMware will expect all partners in the new program to demonstrate basic capabilities through the achievement of VMware Solution Competencies. These competencies focus on developing partners' selling skills, architecture proficiency and deployment expertise. As partners invest and expand their level of capability and meet sales and/or consumption thresholds, they will have the opportunity to earn greater rewards, including enhanced front- and back-end margin as well as deployment and consumption performance incentives.

In advance of the program launch, VMware will help partners prepare for the new program by providing support, resources and education. Additional information on the program can be found at https://www.vmware.com/go/partner-connect.

New VMware Cloud on AWS Master Services Competency
As customers seek more flexibility, faster innovation, increased efficiencies, and lower costs from modern technologies, VMware Master Services Competencies empower partners with greater knowledge, skills, and tools to address digital transformation initiatives across industries. VMware Master Services Competencies give customers access to validated and certified partners with the resources, knowledge, skills, and tools to successfully deliver services for next-generation VMware technologies.

VMware today announced the new VMware Cloud on AWS Master Services Competency. This competency joins four other Master Services Competencies offered by VMware, and gives partners the capability to offer professional services for VMware Cloud on AWS, along with the benefits of priority engagement, greater investment alignment for supporting customer deployments, digital badges and demand generation, and significant education discounts.

Innovation and Incentives in Advanced VMware Technologies
VMware's full portfolio of solutions helps customers drive digital transformations from core datacenter, to cloud, to devices and edge/IoT. This opens up numerous opportunities for partners to accelerate their growth and expand into new practices areas.

To help ignite opportunities for hyperconverged infrastructure, VMware is offering a new HCI Partner Sales Incentive, available only through partners. For a limited time, customers who have not yet deployed VMware vSAN in their environments can purchase three nodes of vSAN licenses for the price of two.

Additionally, Hewlett Packard Enterprise (HPE), a long-standing VMware partner, is making it easy for customers who want to build their own hybrid cloud with the new HPE vSAN ReadyNode. This easy-to-order solution is built on the HPE ProLiant DL380 and certified under the VMware vSAN all flash 6 specification. The HPE vSAN ReadyNode removes complexity with a preconfigured server that features an optimized balance of CPU, memory and network, as well as I/O controller and storage for data management and data analytics using popular platforms like Microsoft SQL Server and Oracle Database.

For VMware NSX, partners who achieve the Network Virtualization Master Services Competency will now earn increased rewards for completing product deployments.

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Events News

At Hannover Messe 2019, Schneider Electric showcases digital collaboration and productivity solutions to power connected industry

3 April 2019

Closely aligned to the "Integrated Industry – Industrial Intelligence" theme of Hannover Messe, Schneider Electric will showcase a range of digitally connected products, solutions, and services that help customers either begin their digitization journey, or accelerate their digital transformation.

Schneider Electric's Exchange and EcoStruxure platforms of Industrial Internet of Things (IIoT)-connected apps, services, and products help decision-makers and managers digitize operations quickly, cost-effectively, and with complete confidence.

"To maximize returns in this rapidly evolving environment, industry needs open and innovative platforms for sharing ideas, breaking down silos, and unlocking access to new markets, which is why we've launched Schneider Electric Exchange," said Peter Herweck, EVP, Schneider Electric Industry. "To support this collaboration, we are launching new products, closely tied to our EcoStruxure architecture and platform, that help managers in all sectors digitize machines and processes, while driving efficiency and resilience in an increasingly competitive environment."

Schneider Electric Exchange unleashes the power of collaboration in an open environment

Schneider Electric Exchange is the world's first cross-industry open ecosystem dedicated to solving realworld sustainability and efficiency challenges. Schneider Electric Exchange helps customers reach a larger customer base in otherwise hard-to-reach new markets, thanks to a vast library of resources such as APIs, analytics, and data sets to improve digital offers. It leverages digital tools and expertise to scale solutions and speed up time to market, while allowing collaboration through a powerful cloud-based platform to share insights and designs, and effectively manage and complete projects.

As an illustration of Schneider Electric Exchange in action, global management consulting and professional services firm Accenture brings the ability to create customized solutions and develop digital business models, while Claroty, a security specialist for operational technology infrastructure, offers industrial cybersecurity expertise, working with companies to address the larger digital risk that comes with integrating IIoT solutions.

Central to Schneider Electric Exchange is EcoStruxure™, the group's open, interoperable, IoT-enabled system architecture and ecosystem of experts. Leveraging advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity, EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity, bringing innovation at every level. EcoStruxure is deployed in almost 500,000 sites with the support of 20,000+ developers, 650,000 services providers and partners, 3,000 utilities, and connects over 2 million assets under management.

EcoStruxure gives unprecedented productivity with IIoT-ready solutions for machine builders

EcoStruxure for Machine Builders is a powerful application that delivers real time control and analytics to Machine Builders, helping them deliver greater operational efficiency throughout the machine life cycle. At Hannover Messe, Schneider Electric is launching the new TeSys island Digital Load Management and Modicon M262 Logic & Motion controller, which work seamlessly with EcoStruxure for Machine Builders to give OEMs the unprecedented ability to easily integrate IIoT functionality into

new and existing machines:

• TeSys island, a new fully-digitized IoT connected load management solution that saves on design, wiring, and commissioning time, as it is based on multifunctional devices and avatars for industrial applications. It allows for 40% faster machine integration with the cloud, using open standards, with built-in end-to-end cybersecurity.

• Modicon M262 with embedded direct cloud connectivity and encrypted communication protocols, and up to five separated ethernet networks for fast logic & motion performance in demanding applications. Modicon M262 provides benchmark performance with 30% better motion and four times faster CPU execution than the market reference.

A new range of EcoStruxure Advisor apps and services help companies start and even accelerate their digitization journey

Because comprehensive digitization can be a daunting prospect for companies who face lost investment if they need to replace existing machines with new IIoT-ready equipment, Schneider Electric is launching a range of new EcoStruxure Advisor apps and services that make secure cloud-based IIoT integration easy, while reducing the cost and time of implementation. New Advisor apps and services being showcased at Hannover Messe include:

• EcoStruxure Power Advisor for energy managers gives unprecedented insights into data quality and network health, with real-time information on data quality and recommendations that establish a trustworthy data foundation.

• EcoStruxure IT Advisor gives data center managers an instant overview of their data center operations, helping optimize capacities, plan changes and analyze business impact, automate workflow, and deploy energy-based billing to reduce OpEx and increase ROI.

• EcoStruxure Workplace Advisor helps building managers create smart workplaces thanks to actionable insights delivered through intuitive dashboards that analyze data from IoTconnected devices and systems throughout buildings, maximizing space efficiency and improving occupant quality of life.

• EcoStruxure Process Safety Advisor is a digital process safety platform and service that aggregates real-time data, analytics and insights from multiple sites and geographies into a single user interface. It enables customers to understand their risks within minutes, and then act decisively to drive better business results.

• EcoStruxure Equipment Efficiency Advisor is a specialist manufacturing intelligence software tool, created by and for operators, production managers and maintenance personnel, that collects, measures, analyzes, and reports operational performance, availability, quality, and Overall Equipment Effectiveness (OEE), while performing root cause analyses.

• EcoStruxure Pumping Performance Advisor increases the performance, efficiency, and sustainability of Water & Wastewater pumping stations. Delivered through consulting and Software as a Digital Service, Pumping Performance Advisor provides maintenance cost assessments, a Service Bureau that turns actionable insights into concrete recommendations via user dashboards.

• EcoStruxure Clean-In-Place (CIP) Advisor helps Food & Beverage companies eradicate loss and reduce consumption, thanks to a CIP monitoring tool that provides traceability and diagnostics, product loss monitoring, energy monitoring dashboard, and real-time reports. Clean-In Place Advisor also includes a complete Walkthrough Audit to check conformity with best practices on Energy, Automation,

and Process.

Financial News

CENIT AG Annual Financial Results 2018: Sales up by around 12 percent, EBIT down by around 30 percent

1 April 2019

CENIT AG was not able to repeat the success of the previous years in the 2018 financial year. Even if sales in the group rose by approx. 12 percent, EBIT fell by almost 30 percent, which is due in particular to the decline in the sale of the company's own software.

Sales of third-party software again increased by around 27 percent compared to the previous year. On the basis of the annual financial statements of CENIT Aktiengesellschaft, Stuttgart, the Management Board and Supervisory Board will propose to the Annual General Meeting on May 24, 2019 to distribute a dividend of EUR 0.60 per share.

During the 2018 business year, CENIT Group achieved total sales revenues of EUR 169,990 k (2017: EUR 151,701 k/12.1%). Sales of CENIT's proprietary software declined by 12% at EUR 15,449 k, compared to EUR 17,559 k. Sales revenues from CENIT Consulting and Services totaled EUR 49,776 k and thus declined by 6.6% on-year (2017: EUR 51,618 k). Especially due to the acquisition of the KEONYS Group, sales of third-party software increased by around 27% to EUR 104,299 k (2017: EUR 82,362 k).

CENIT achieved EBITDA in the amount of EUR 11,948 k (2017: EUR 15,269 k/-21.8%) and EBIT of EUR 9,028 k (2017: EUR 12,836 k/-29.7%). Earnings per share were EUR 0.73 EUR (2017: EUR 1.07 EUR/-31.8%).

Order Intake
During the 2018 business year, orders received by CENIT Group totaled EUR 177,902 k (2017: EUR 161,955 k). Orders in hand on December 31, 2018 amounted to EUR 53,389 k (2017: EUR 45,477 k).

Asset and Financial Situation
On the balance-sheet date, the company's equity capital was EUR 39,102 k (2017: EUR 40,855 k), representing an equity ratio of 49.4% (2017: 46.8%). On the balance-sheet date, bank deposits and liquid assets totaled EUR 18,041 k (2017: EUR 23,692 k). On the other hand, there are current financial liabilities in amount of EUR 3 k (2017: EUR 3,152 k). Operative cash flow amounted to EUR 9,617 k (2017: EUR 3,917 k). In 2018, cash flow was influenced by a dividend payment to shareholders in the total amount of EUR 8,368 k and investments in the amount of EUR 3,826 k.

Employees
On December 31, 2018 CENIT Group employed 757 staff worldwide (2017: 764). Consolidated personnel expenditures during the reporting period were EUR 58,571 k (2017: EUR 53,060 k). CENIT

currently provides training for 52 young professionals in a variety of occupations. Trainees include informatics and economics students from the Dual University of Baden-Württemberg (DHBW) and vocational trainees in the field of information technology.

Dividend
The Management and Supervisory Boards will propose to the General Meeting of Shareholders on May 24, 2019 that a dividend of EUR 0.60 per share, be distributed from CENIT AG's unappropriated profit in the amount of EUR 5,021 k.

Outlook
An equity ratio of almost 50% places CENIT on very secure footing. This lets CENIT act as a strong and reliable partner to its customers.

The forecast for the 2019 business year is based on sales at the previous year's level of around EUR 170,000 k and EBIT of EUR 10,000 k.

The complete 2018 Annual Report is available in a German and English version on the CENIT homepage: www.cenit.com/reports.

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ModuleWorks announces record year for 2018

3 April 2019

ModuleWorks announces over 20% increase in revenue and record profits for 2018. The company's continued growth is fuelled by new technological advances in multi-axis machining and simulation software as well as major new and ongoing projects with industry partners.

Since its founding 16 years ago, ModuleWorks has grown rapidly and today has over 170 partner companies and more than 500,000 installed seats of CAD/CAM software around the world.

An important source of revenue growth in 2018 was the successful release of new technological advances such as automatic calculation of deburring toolpaths and additive manufacturing with sophisticated 5-axis algorithms for mold repair. Continued sales of the ModuleWorks Collision Avoidance System (CAS) that provides real-time simulation and collision detection on the CNC also contributed significantly to the increase in revenue.

"A large part of our development team is dedicated to constantly advancing our technology with new and enhanced features. It's great to see how our partners are using our latest products to build innovative, cutting-edge CAM solutions that expand their market opportunities and give them a competitive advantage."

New major projects as well as the continuation of ongoing projects with global industry partners also drove revenue growth in 2018. ModuleWorks and Sandvik Machining Solutions collaborated on the development of Prism, the next generation of touch-based programming technology that brings simplified and intelligent CAM programming to the shop floor. 2018 also saw ModuleWorks and Siemens PLM Software celebrate 10 years of successful cooperation that continuously expands and enhances the functionality of the Siemens NX™ software. The ongoing cooperation with PTC is another

success story. In the latest project, PTC integrated the ModuleWorks High Speed Machining (HSM) kernel into its Creo® Mold Machining Extension to offer dedicated high-speed machining for molds and prototypes.

"We consider our customers as partners and believe in building ongoing, long-term working relationships. Our software components enable CAD/CAM vendors to accelerate their software development and get their products to market faster. Working in close cooperation is the best way to achieve fast and seamless integration and ensures the best possible synergy of our combined technologies."

Continued financial growth allowed ModuleWorks to further expanded its software development teams in Germany, Romania and Ukraine to over 130 developers. 2018 also saw ModuleWorks receive the Great Place to Work award for the sixth consecutive year to confirm its reputation as one of Germany's top employers.

The growing international community of ModuleWorks partners met at the company's own event, the MIC 2018 (ModuleWorks Insider Conference), for two days of presentations and discussions on the future of the CAM industry. ModuleWorks was also on the road with a strong presence at international trade shows such as the AMB, IMTS and JIMTOF and actively participated in the 2018 CIRP conference on the future of manufacturing.

Based on the 2018 revenue figures and the company's continued expansion, ModuleWorks expects further growth in 2019 and the coming years.

Onscale Disrupts Engineering: Raises $10 Million from Intel Capital and Gradient Ventures

1 April 2019

Onscale announces $10M in Series A funding led by Intel Capital and Gradient Ventures, Google's AI-focused venture capital fund. Additional investors include Thornton Tomasetti, Stage 2 Capital, Cultivation Capital, and CampbellKlein.

OnScale, which has grown considerably since emerging from stealth in early 2018, will use the new investment to drive global expansion, respond to increasing demand, and accelerate development of its Computer-Aided Engineering (CAE) solutions for complex, real-world engineering applications.

OnScale CAE tools are based on proprietary multiphysics solvers that were developed and validated over 30 years by one of the largest engineering consulting firms in the world for DARPA, the U.S. Department of Defense (DOD), and large commercial customers. The CAE solvers were architected for highly parallel mainframe computers to handle very large engineering simulation problems and are a perfect fit for modern cloud-based, high-performance computing. OnScale was spun out of Thornton Tomasetti in 2017 and is led by Chief Executive Officer Ian Campbell, along with a strong leadership team with over 100 years of combined experience in CAE software.

The company has established a large and growing base of customers, including a number of Fortune 100 companies. OnScale gives engineers a wealth of design insights and highly accurate simulation results up to 100x faster than legacy CAE offerings. Current OnScale solutions address the simulation needs of Semiconductor and MEMS, 5G mobile, next-gen biomedical, infrastructure safety, and autonomous

vehicle markets. The company is focusing on improving OnScale's user interface, expanding the breadth of physics solver capabilities, and forming partnerships with other software companies to provide seamless engineering workflows.

"With strategic investors like Intel Capital and Google's Gradient Ventures, OnScale is well positioned to help engineers of all disciplines solve their design challenges," said Campbell. "Created for engineers, by engineers, our mission is to usher in the future of engineering. With this investment, we will continue to empower innovators who are creating the future of technology."

"As technology systems become more complex, next-generation computer aided engineering software will become integral to design and deployment," said Dave Flanagan, vice president and senior managing director at Intel Capital. "OnScale's highly scalable CAE solution leverages the power of the cloud and advanced multiphysics to model highly complex systems, helping customers solve the toughest design challenges". Investment Director Arun Chetty will join OnScale's board.

"Leaps in technology require paradigm shifts in engineering, and the combination of world-class multiphysics solvers, AI, and highly scalable cloud-based HPC provide an opportunity for such a paradigm shift in how we create world-changing technologies. That is why we're excited to welcome OnScale and its team of software experts to the Gradient portfolio." said Zach Bratun, Partner, Gradient Ventures.

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Implementation Investments

Aibel Selects Trimble's Tekla Software for Major Oil and Gas Project in Norway

2 April 2019

Trimble announced that Aibel has selected Trimble's Tekla Structures Building Information Modeling (BIM) software for the Johan Sverdrup P2 oil field construction project. Aibel is a leading global supplier of engineering, construction and maintenance services for the oil, gas and renewable energy industries. Johan Sverdrup P2 is one of the largest projects on the Norwegian continental shelf.

Aibel evaluated and performed a proof of concept of Tekla Structures and several other BIM solutions for structural design and detailing. Critical to the selection were interoperability and integration with offshore design software systems, cross-team global collaboration, domain expertise and ability to automatically generate highly detailed shop drawings.

"We take the selection of technology partners seriously. Throughout our evaluation, Tekla Structures exceeded our expectations with a solution that accelerates our workflows and makes it easy for teams across multiple locations to collaborate," said Charles Halaas, IT Manager Field Development and Offshore Wind. "The Johan Sverdrup P2 project is the largest project in our company's history and Tekla Structures will play a key role in our success by enabling our teams to create constructible, data-rich models with a high level of development, eliminate manual work and carry out structural design and detailing more efficiently and productively."

With the help of domain expertise from both Trimble and its reseller EDRMedeso in Norway, Aibel created a new workflow using Tekla Structures. The new workflow integrates with the company's

existing plant design management system to cut preparation time for over 15,000 structural drawings the company is producing for the project. Working with the plant design management system and Tekla Structures for weld detailing, Aibel can then use construction data that has the Level of Development (LOD) needed to automate the fabrication process for better accuracy and time savings. Using the Tekla Model Sharing collaboration tool, Aibel will empower distributed teams
in Norway, Singapore and Thailand to work together on design and production projects.

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CLAAS Selects 3DEXPERIENCE Platform

3 April 2019

CLAAS has completed a company-wide rollout of the 3DEXPERIENCE platform. Already using solutions from Dassault Systèmes, CLAAS migrated all solutions and data to the 3DEXPERIENCE platform as part of its digital transformation strategy.

Connecting departments and systems is no longer enough to achieve the fast-paced innovation the industrial equipment market demands. Market leaders are adopting a single digital platform so that all disciplines can collaborate in real time throughout the product lifecycle, identifying and resolving issues, and involving customers and suppliers in creating the final experience.

Recognizing this, CLAAS has adopted a single digital platform for all disciplines, providing rapid access to the company's extensive knowledge and know-how and facilitating high-visibility collaboration to enable intelligent innovation. CLAAS will use Dassault Systèmes' "Single Source for Speed," "Concurrent Equipment Engineering," "Ready to Make" and "Keep Them Running" industry solution experiences based on the 3DEXPERIENCE platform.

"Dassault Systèmes' 3DEXPERIENCE platform is our strategic platform for everything we do in engineering and digitalization – from ideation to production and service," said Nico Michels, head of digital product engineering, CLAAS. "Product information is the same for everyone, giving everybody access to the integrated solution with the most recent designs, which we only need to maintain once since there is no duplication of information."

"The global agricultural equipment market is changing fast, incorporating IoT at an incredible rate, and creating even more intelligent machines," said Philippe Bartissol, vice president, industrial equipment industry, Dassault Systèmes. "To achieve that type of innovation, companies must operate efficiently in this era of dynamic change and behave as a unified whole, an intelligent, connected enterprise. This is what the 3DEXPERIENCE platform brings to CLAAS."

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Prada Group Adopts Oracle Cloud Solutions to Support Operational Efficiency and Effectiveness

2 April 2019

The Prada Group announced a collaboration with Oracle to adopt a suite of Oracle advanced technological solutions that will support efficiency throughout all of Prada Group's core retail processes. They will also help the company analyze historical data and current market demands across its global

retail network of 634 stores, better-informing business decisions and providing a unique customer experience.

"By integrating Oracle's advanced digital technologies with our operations, we will be able to unlock increasing value within our business and offer further opportunities to our global customer base. Our collaboration with Oracle is part of our wider strategy focused on enhancing our Group with a strong investment in technology to boost operational efficiency and effectiveness," said Lorenzo Bertelli, Prada Group Head of Marketing and Communication.

"For luxury brands, delivering a unique and positive brand experience is paramount," said Mike Webster, Senior Vice President and General Manager, Oracle Retail. "Whether they are shopping in Milan, San Francisco or online, Prada Group's customers expect that inventory will be fresh, current and available. With Oracle, the company will be able to better understand and anticipate customer demand and optimize inventory assortments accordingly to ensure every brand connection results in a satisfied customer."

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Sopheon and National Foods Limited Partner for New Product Innovation

28 March 2019

Sopheon announces its partnership with National Foods Limited, one of the leading foods companies headquartered in Karachi, Pakistan. National Foods Limited (NFL) has subsidiaries in the United Arab Emirates, United Kingdom and Canada.

With a strategic vision to achieve significant turnover growth by 2020, National Foods Limited wants to ensure long-term success by introducing a formalized product development decision-making process to support the fast pace of change in the consumer markets. The team at National Foods recognizes that in order to maintain their competitive edge, they have to increase the pace of new product innovation and improve the success rate of these products. In terms of work process, the team is quite clear about the need to have one source of truth for all data and decisions related to new innovations, better strategic alignment across the different groups of stakeholders, and better visibility at all stages of the product development process to mitigate the risk inherent in investments in bold, new-to-the-world products.

The CEO of NFL, Mr. Abrar Hasan, stated: "After an in-depth evaluation of a number of software vendors, we chose the *Accolade Express* solution. Sopheon has the expertise and a solid number of customer references in the fast moving consumer goods (FMCG) space, the solution is Stage-Gate® certified, and we had really good interactions with the Sopheon team as well as CEO Andy Michuda."

Dr. Fayyaz Ashraf, Head of Innovation, Research & Development at NFL, explains: "We are keen to future proof our business by implementing a software solution that will enable us to continue to grow. Innovation plays a big part in assisting us to achieve our growth objective as we must continue to find richer revenue streams, increase portfolio profitability, and focus our efforts on the most commercially viable investments using a fully automated cross-functional approach."

Mr. Syed Zeeshan Ali, Head of Information Technology at NFL, states: "Our strategy is to nurture business transformation, through automated solutions, by promoting efficiencies, increasing transparency and enabling greater speed in decision making. Sopheon's Accolade Express will automate

our Stage-Gate®process; this is what our innovation function needs to ensure that the right products reach our valued consumers by passing through a well-established, systematic process. We are excited to use this system to launch innovative products that continue to satisfy consumer appetite, and to ensure National Foods remains the brand of choice."

NFL aims to achieve new heights of business performance and innovation excellence through this collaboration with Sopheon.

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Tobee introduces PLM and other software for technology and product development

2 April 2019

Tobee® Pump attaches great importance to the construction of R&D, and owns a powerful research team with strong R&D ability. At present, Tobee® pump has strong professional technology and rich experience and specializes in hydraulic testing, liquid testing, molds, new wear-resistant materials and new technologies. CAD is throughout the whole product development process, and at the same time Tobee® Pump has introduced Product Lifecycle Management (PLM), CAPP, CFD, Computer-Aided Casting, Computer-Aided Metallographic Analysis and other software for technology management and product development.

Tobee® Pump has built long-term cooperation relation with domestic mining and metallurgy design institutes such as Beijing General Research Institute of Mining & Metallurgy, Changsha Design and Research Institute of Nonferrous Metallurgy and Nanchang Nonferrous Metallurgical Engineering and Research Institute, and has built university-industry cooperation with the East China University of Science and Technology and the Jiangxi University of Science and Technology, so as to jointly conduct project research, providing strong technical support for the company.

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Volkswagen to Cooperate with Siemens for Industrial Cloud

29 March 2019

The Siemens technology group is to be the integration partner for the Volkswagen Industrial Cloud. This was announced by Volkswagen and Siemens today. Siemens will play a key role in ensuring that machinery and equipment of different manufacturers at the 122 Volkswagen plants are networked efficiently in the cloud. The resulting data transparency and analysis will lay the technological foundations for further productivity improvements at Volkswagen plants. In addition, Siemens and machinery and equipment suppliers will make applications and apps from the MindSphere Internet of Things system available in the Volkswagen Industrial Cloud. Volkswagen and Siemens intend to develop new functions and services for the Industrial Cloud together with machinery and equipment suppliers; these will then be available to all future partners. The development of the Volkswagen Industrial Cloud is gathering pace.

"We intend to make our Volkswagen Industrial Cloud a partner network with digital functions bringing benefits to all the participating companies. In Siemens, we have secured a strong partner with

outstanding digitalization and industry expertise," says Oliver Blume, Chairman of the Executive Board of Porsche AG and Member of the Board of Management of Volkswagen Aktiengesellschaft responsible for 'Production'.

"We are pleased to support Volkswagen in the development of its new Industrial Cloud with our open IoT platform MindSphere. For this purpose, we will network machinery, production systems and equipment more effectively using MindSphere and our automation platforms. This way, Volkswagen, suppliers and machinery producers will be able to leverage the potential of production data even more effectively. It will be possible to make production more efficient and flexible as well as further improving product quality," says Klaus Helmrich, Member of the Managing Board of Siemens AG.

Siemens is contributing its comprehensive expertise in automation, the networking of machinery and plant and the world of industrial IoT to cooperation with Volkswagen. Apart from the applications and apps of the MindSphere platforms, this will also include industrial edge solutions. With this approach, production data will be processed directly by equipment and machinery or in the production process before they are transmitted to the Industrial Cloud. This will allow further optimization of complex production processes and also improve the data quality of the Volkswagen Industrial Cloud.

For example, Siemens and MindSphere partners also offer applications for the predictive maintenance of machines with optimized maintenance cycles calculated in advance. Via the cloud, these can then be rolled out to all the Volkswagen plants. It will be possible to control Volkswagen's production environment and supply chain even more efficiently because the connected suppliers and machinery producers will also benefit from the knowledge gained from data analysis.

With the Volkswagen Industrial Cloud, that is being developed jointly with Amazon Web Services (AWS), the Volkswagen Group is laying the foundation for the seamless digitalization of its production and logistics. In the long term, this will also include the integration of Volkswagen's global supply chain with more than 30,000 locations of over 1,500 suppliers and partner companies. In future, the Industrial Cloud will also be available as a platform for other partners.

Product News

Accordo Group Launches New Technology Platform AccordoINSIGHTS

28 March 2019

Accordo Group announced the launch of AccordoINSIGHTS, a technology enablement platform providing software publishers and their channel partners the necessary tools to support their customers' cloud transformation journey.

With businesses of all sizes worldwide considering cloud migration, AccordoINSIGHTS provides comprehensive visibility into a customer's software estate. AccordoINSIGHTS enables customers to take action with cybersecurity and GDPR risk mitigation, value-based cost optimization and modeling for a successful path into the new hybrid world.

"In order to navigate any technology journey safely and efficiently, businesses need to know where they currently are, where they are going, and what challenges they are likely to face," said Eric Martorano,

CEO of Accordo Group. " AccordoINSIGHTS enables customers to successfully optimize their investments providing clear visibility into their environment while mitigating risks and initiating a successful journey to the cloud."

AccordoINSIGHTS contains features like Cloud Optimizer, a single view for customers to optimize cloud usage and associated costs, ensuring they get the most out of their investment. Cloud Optimizer provides customers greater visibility to drive increased efficiencies through actionable recommendations.

The AccordoINSIGHTS technology enablement platform includes customer benefits such as:

- Improved time management by centralizing all product, installation and subscription information in one place

- Reducing risks by highlighting security gaps and vulnerabilities for out-of-support products and upcoming agreement expirations

- Saving costs by identifying ways to optimize software investments and controlling spend through visibility and indicative spend indicators

- Tailored insights to influence and support the customer's migration to the cloud via a cloud transformation plan

- On-demand advice through an in-app chat supported by Accordo's dedicated Product Specialists team

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Adams 2019 Streamlines Vehicle Dynamics Simulation and Expands its Real-Time Capabilities
27 March 2019

MSC Software Corporation announced that it has expanded its groundbreaking virtual prototyping capabilities with enhancements to Adams, its flagship solution for Multi-Body Dynamics simulations in release 2019. Key highlights of this release include the expanded capabilities in Adams Car, the gold standard for automotive vehicle dynamics simulations. With Adams Car, engineering teams can quickly build and test functional virtual prototypes of complete vehicles and vehicle subsystems. Based on user feedback from multiple automotive OEMs around the world, additional vehicle events and new off-the-shelf vehicle templates have been introduced into Adams Car to improve its modeling efficiency in this release.

Adams 2019 also contains new capabilities to streamline workflows in Adams Car and increase user productivity. For example, the addition of event sets, a customizable collection of vehicle dynamics events. These can be leveraged across projects and team members delivering consistent vehicle test methods to avoid duplication of work. The release also introduces a new fast solving, simplified flexible body modeling method. Users can leverage this method for rapid parametric explorations of their design space. Jesper Slattengren, Technical fellow at Pratt and Miller Engineering, said of this release that, "The new features in Adams Car in the 2019 release are major improvements and will have a huge impact on Chassis development and simulation at Pratt and Miller".

Continuing MSC Software's focus on real-time simulations, Adams 2019 now enables support for

running simulations on the dSPACE® real-time environment. Users of dSPACE SCALEXIO® can now co-simulate with Adams, unlocking opportunities for combining virtual and physical testing to shorten development cycles. Running Adams simulations on dSPACE SCALEXIO® makes it possible to conduct real-time software in the loop (SIL) and hardware in the loop (HIL) scenarios, supporting the development of ADAS and Autonomous Driving systems.

"Streamlining the Adams Car environment in Adams 2019 has been a goal of this release along with expansion of support for real-time simulations," said Paulo Guglielmini, CEO of MSC software. "It constitutes a significant step forward in our journey to help Adams users make better vehicle design decisions, faster. We constantly work with automotive OEMs directly and enable them to incorporate their engineering workflows into our product, and that's why Adams remains the world's leading multibody dynamics software for over 30 years."

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Autodesk® AutoCAD® Electrical 2020 Release Notes

30 March 2019

What's New in AutoCAD Electrical 2020

Installation Requirements

- Installation requirements for One AutoCAD

- One AutoCAD configuration, licensing and deployment options

- Autodesk product installation, licensing, and deployment

Installing via the Autodesk® Desktop App

Content libraries are always installed to their default location regardless of the settings specified in the Autodesk desktop app.

Only the following libraries are installed by default. Use the Windows Control Panel to install additional libraries, if required.

- Manufacturer Content Libraries - AB, ABB, Anixter, and Telemecanique.

- Symbol libraries for the default standard.

Autodesk® Vault Basic 2020 (Client)

Please sign in with your Autodesk ID and download the Autodesk Vault Basic (Server and Client) from http://www.autodesk.com/account.

Catalog Database Schema

It is recommended that you do not make any changes to the default catalog database schema, such as modifying the column name or adding a column between existing columns. Refer to the AutoCAD Electrical Help for more information about Catalog Database Schema.

Project Migration

For projects created in AutoCAD Electrical 2020, in order to open it in AutoCAD Electrical 2015 or

earlier versions, you need to save the project file (*.wdp) and other related files to ANSI format using any text editor.

Language Packs

- AutoCAD Electrical does not support running a specific language product on a different language operating system. For example, running a Simplified Chinese AutoCAD Electrical on English operating system will not function properly and is not a supported configuration. In some cases this might work when the languages are similar. English AutoCAD Electrical works well on any language operating system.

- You can download the Autodesk AutoCAD Electrical Language Packs from Autodesk website.

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Dyndrite Corporation Reveals New Accelerated Geometry Kernel, Releases Additive Toolkit For 3D Printing Technicians

31 March 2019

At AMUG 2019, after 3.5 years of development, Dyndrite Corporation emerged from stealth, launching the Dyndrite Accelerated Geometry Kernel (AGK) — the world's first fully GPU-native geometry engine, along with the Dyndrite Additive Toolkit, the first application built on the new kernel.

The Dyndrite Kernel and Additive Toolkit represent a milestone in CAD/CAM development, bringing modern computing, language and capabilities to developers and OEMs developing next-generation applications and devices for designers, engineers, and 3D printing technicians. The Dyndrite Kernel is a "Hybrid" kernel capable of representing all current geometry types, including higher order geometries such as splines (NURBs), surface tessellations, volumetric data, tetrahedra, and voxels. Additionally, users can seamlessly move between geometric representations without destroying the original underlying data format. The fully native GPU Kernel easily handles additive specific computations such as lattice, support, and slice generation, in some cases reducing compute times from hours or days to minutes or seconds. For heavy use cases, the Dyndrite kernel is naturally scalable with access to additional GPU nodes, whether locally or in the cloud.

"I've spent my career working on software built to enable designers, engineers and technicians," said Dr. Laura Lurati, Chief Scientist at Dyndrite, Ph.D, Applied Mathematics. "Today with the release of the Dyndrite platform, we dramatically improve the daily working lives of additive manufacturing users. I'm excited to see the innovative solutions our users create with these powerful new tools."

"The Dyndrite Accelerated Geometry Engine is a great example of innovation enabled by using the latest NVIDIA GPU programming techniques and the RTX platform," said Olimpio DeMarco, Director, Strategic Alliances, NVIDIA. "Today's designers and engineers are clamoring for state-of-the-art tools, built on modern architectures, that leverage today's manufacturing processes such as 3D printing. We're excited to see the applications enabled by this powerful new platform."

The Dyndrite kernel provides both C++ and English-readable Python APIs, making application development accessible to a wide variety of users, including non-programmers such as students, mathematicians, and mechanical engineers. Using the Dyndrite Python APIs solution, providers and OEMs can easily and quickly develop sophisticated next-generation applications and interactive

workflows.

The Dyndrite Additive Toolkit is the first customer-facing application built on the new Dyndrite kernel. It is designed to improve the productivity of 3D printing technicians. It streamlines the CAD-to-Print process by directly importing CAD design files, maintaining the original spline data, and using that data to drive the additive manufacturing process. Working directly with CAD data provides numerous advantages over STL files, a pervasive format used in today's additive systems. The STL is a 30-year-old format that, while helping to launch the 3D printing revolution, now serves as a major bottleneck in additive workflows. STL files are difficult to safely modify, and typically require time-consuming manual repair work prior to being used. Additionally, their fixed reliance on triangles limits the precision of the workflow model and the output quality.

Working directly with CAD spline data, and the richer information it provides, enables Dyndrite users to eliminate model prepping steps and do on-the-fly determinations on desired output quality. The underlying GPU-based kernel means other additive workflow processes which used to take hours of processing time – such as creating lattices or lightweighting, support generation, slicing, hatching, and toolpath generation — now occur on the fly. By removing the long click and wait times, designers are now free to experiment and explore iterations as a natural part of the design workflow. Users have the choice to use the Toolkit's GUI, or the Python interface to script a significant part of their workflow. Interactive workflows which call up GUI elements for user input can also enable technicians to augment their workflow creating interactive scripts that eliminate and automate repetitive and mundane tasks.

"Dyndrite is delivering on the promise of modern design and manufacturing," said, Harshil Goel, Dyndrite's co-founder and CEO. "We are excited to play an important role in fostering the evolution of design and manufacturing software."

"I've known Harshil for quite a few years now," said noted private investor and former Autodesk CEO Carl Bass. "I believe that he and his team are taking a very fundamental approach to solving a class of problems even broader than the current generative design use cases. Dyndrite has the opportunity to transform an industry and power some pretty awesome next generation workflows."

Dyndrite's announcement is the culmination of more than three years of development work by a veteran team of mathematicians, computer scientists, and mechanical engineers who came together with the aim of empowering both application developers and OEMs creating next-generation fabrication processes and machines. Dyndrite takes a holistic and inclusive approach with the aim of powering integrated hardware / software solutions that increase user control over the printing process while protecting manufacturers' underlying intellectual Property (IP).

"The Dyndrite Accelerated Geometry Kernel promises to do for 3D printing what Adobe and PostScript did for 2D printing in the 1980's," said Shawn Hopwood, Dyndrite's Chief Marketing Officer and Head of Developer and OEM Relations. "Laser printing technology powered by PostScript set off a revolution that forever changed how people communicate. In the new revolution, 3D printers powered by Dyndrite have the potential to change every aspect of the things we make, where we go, and how we live."

"As EOS continues to break boundaries and push the frontier of additive manufacturing, we pride ourselves in forming collaborative relationships to be able to offer our customers the best and state-of-the-art technology," said Dr. Gregory Hayes, Director of Applications and Consulting for EOS. "We are excited to be working with Dyndrite, and looking forward to how their software can streamline and improve the design to part workflow."

The company has independently announced the Dyndrite Developer Program and Council, a

membership group comprised of industry leaders chartered with steering the future direction of the company's roadmap. Inaugural members include:

(Listed in alphabetical order)

Aconity3D
EOS
HP
NVIDIA
Plural Additive Manufacturing
Renishaw

Availability
The Dyndrite Kernel is available to select developers and OEMs. Parties interested in learning more should go to https://www.dyndrite.com/developer. The company intends on broader availability Summer 2019.

The Dyndrite Additive Toolkit is in limited release and will go in public beta later this summer. Additive users can sign-up for the beta program at https://www.dyndrite.com/beta

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Elements for IoT by CONTACT Software best factory software of the year again

1 April 2019

As part of this year's "Factory Software of the Year" competition, the Industry 4.0 Research and Application Center at the Chair of Information Systems, Processes and Systems at the University of Potsdam evaluated the leading providers of software solutions for factories in the Internet of Things, Complete Solution, MES and Virtualization categories.

The open CONTACT Elements for IoT platform was particularly convincing due to its high level of interoperability and easy integration into existing structures. Coordinated best-in-class and open source components shorten the implementation time and help companies to realize innovative business models faster.

The jury evaluated the solutions presented according to differently weighted criteria. The concrete customer benefit was decisive with 25 percent, followed by compliance with standards and interoperability of the solution (19 percent). Platform suitability was weighted at 18 percent. Further criteria were investments in research and development as well as in customer communication.

Stefan Gregorzik, Product Manager Elements for IoT at CONTACT Software, comments: "The competition in the young field of IoT platforms is enormous. Therefore, this is a huge praise for our team. We are particularly happy about the jury's excellent evaluation of the interoperability of Elements."

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Esmetex Launches Digital Platform to Digitize Fabric

2 April 2019

Esmetex has launched Frontier, an online platform to digitize the fabric supply chain from creative fabric development to the inspection process and 3D garment design.

The new tool cuts the creative development cycle by more than two weeks, effectively collecting and organizing information from the supply chain. Its AI capabilities lets the fabric designer and developer to image search and find similar items by description, blend, colour, end use, pantone colour number, pattern or weight. The resulting search includes all fabric details and available sample yardage, which can be ordered directly from the platform via a mobile device.

The environmental aspect is another advantage of the system. Additionally, the inspection report provides defect distribution to reduce consumption for garment factories.

"We aim to simplify the fabric development process; no more looking through swatch boxes and shipping swatches back and forth. It's not practical for a designer to search through 18,000 fabric swatches when Frontier® can search based on whatever criteria the user is interested in, and return all relevant fabric information on one page. This can be done on a desktop, laptop, tablet or smartphone by accessing our website or by installing our app." – Victor Chao, Founder, Esmetex and Esmetex Frontier

The platform contains a database of more than 18,000 fabrics from Esmetex's own mill and the 25 mills under their management, making it one of the largest of searchable online fabrics in the world. Moreover, it's growing at 1,000 items per month with expected exponential growth with every brand that joins the digital community.

Prior to the solution, Esmetex used the database internally. With this introduction, the company plans to work with national brands and retailers to add their fabrics from additional mill partners, creating an integrated solution where all customers' vendor fabric collections and libraries are available in one place digitally at the click of a mouse..

"Software solution companies tend to stay away from factories, but Esmetex sees it as a unique opportunity. We offer the fastest way to move suppliers' items online, and intend to occupy this foundational industry position so other applications can be built on top – like the basic infrastructure of a city," concludes Chao.
To learn more, please visit https://www.esmetex.com/

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Introducing AutoCAD 2020: See What's New

27 March 2019

Announced on the Autodesk blog:

"We're thrilled to bring you AutoCAD 2020, packed with new features and enhancements to help you design, draft, and bring visions to life. **With a subscription to AutoCAD including specialized toolsets, you'll gain access to industry-specific specialized toolsets, flexibility with AutoCAD web and mobile apps, and the latest innovative features of AutoCAD 2020.**

"We're continuing to deliver unprecedented value to subscribers via a streamlined offering, new

features, and award-winning web and mobile apps," said Marcus O'Brien, director of AutoCAD product management. "With Autodesk's cloud capabilities and new AutoCAD partnerships, users can collaborate and make anything, anywhere."

Read on to learn about what's new in AutoCAD 2020, available starting today.

New dark theme brings clarity

AutoCAD 2020 and all the specialized toolsets have a fresh new look! The dark theme now has a modern dark blue interface that's easy on the eyes. The new dark theme is designed to work with recent contrast improvements and sharper icons.

"The interface is so crisp and clean. The automatic graphics configuration is incredible," said Casey Skelton, Planning/CAD design manager at IMEDCO America.

Performance improvements speed up work

Our mission is for AutoCAD to continue to be the high-performing, high-fidelity, powerful engine you trust. With AutoCAD 2020:

Each time you save your work now takes just half a second—one whole second faster on average. This could save you hours of time each year. (In just one year, all AutoCAD users would save 80 work years collectively!)

In addition, install time is 50% faster for solid state hard drives.

Quickly display measurements at a glance

In AutoCAD 2020, measuring distances is faster than ever with the new Quick Measure tool, which measures 2D drawings simply by hovering your mouse. Dimensions, distances, and angles are dynamically displayed as you move your mouse over and between objects.

"I love this tool for designing purposes. Site plans, floor plans, elevations—I can see using this tool constantly," said Sam Hernandez, residential designer at SHP Design and Drafting.

Insert blocks efficiently with Blocks palette

The new Blocks palette makes it easier to insert blocks with visual galleries and the ability to filter for the exact block you're looking for. You can simply drag and drop blocks into the drawing from Current Drawing, Recent, or Other Drawing tabs. The palette increases efficiency for finding and inserting multiple blocks and recently used blocks—including the addition of a Repeat Placement option to save steps.

Easily clean drawings with redesigned Purge

The Purge feature has been redesigned for easier drawing cleanup. Remove multiple unneeded objects at once with easy selection and a visual preview area. Check out the Find Non-Purgeable Items button with a Possible Reasons section, to understand why certain items can't be purged.

Compare drawing revisions in one window

A favorite from last year's release, the DWG Compare feature has been enhanced based on your feedback. You can now compare two versions of a drawing without leaving your current window and import desired changes into the current drawing in real time. Quickly toggle on and off the comparison with the new DWG Compare toolbar.

"The enhancements made are very helpful and make the Compare function a much clearer, easier to understand, and more useful tool when collaborating and comparing drawings that may have been updated by someone else. The insert and export to snapshot will be extremely useful," said Richard Hawley, consultant project manager.

AutoCAD partners with Microsoft and Box

AutoCAD is partnering with Microsoft and Box, so as of today, if you already store your files in Microsoft OneDrive or Box, you'll have streamlined workflows and can take advantage of anytime access to any DWG file with AutoCAD.

Boost productivity with Microsoft and Box integrations for AutoCAD

Partnering with Microsoft and Box paves the way for smooth and efficient workflows to achieve greater productivity. Your work can be done online in AutoCAD and stored directly in the cloud. Now, you can quickly open any DWG file stored in Microsoft OneDrive and Box with the AutoCAD web app, at the push of a button. The AutoCAD web app runs in the web browser on virtually any computer, so you don't even need AutoCAD installed on your machine to be able to open, review, and edit your drawings.

"In today's fast paced business environment, our customers want to accelerate business processes and power workplace collaboration, while working with a flexible, best-of-breed enterprise IT stack," said Jeetu Patel, chief product officer at Box. "We're excited that our customers can easily access their DWG files stored in Box directly in the AutoCAD web app to get their work done anytime, anywhere."

The integrations speed up getting into your files, as well as cut down collaboration time by allowing you to view and edit drawings in real time. You can save your updated files to OneDrive and Box without ever leaving the AutoCAD web app, letting you work without disruption.

Partnering with Microsoft and Box also provides flexibility. For example, if you have DWG files stored in Autodesk's cloud, you can open them, with their Xrefs, on any device with AutoCAD desktop, web, and mobile apps. The same is true if your DWG files are stored in Microsoft OneDrive, and Box, although Xrefs aren't packaged. With cloud capabilities, you can store your files where you like and conveniently access them in AutoCAD from the office, the jobsite, and on the go.

"We're thrilled to partner with Autodesk, a leader in the CAD industry, to give our customers more power and flexibility in their workflow," said Mike Ammerlaan, director of Microsoft 365 Ecosystem at Microsoft. "Our customers will be able to design and make anything, as they can now open their DWG files stored in OneDrive and SharePoint with AutoCAD on desktop and the AutoCAD web and mobile apps."

The integrations are now available for all AutoCAD subscribers using Microsoft, Box, and Dropbox. Learn more about the AutoCAD web app.

Download AutoCAD 2020 Today

Ready to explore these exciting new features? The innovations mentioned above are not only available with AutoCAD 2020, but also with AutoCAD LT 2020. If you're on a Subscription or Maintenance plan, head over to your Autodesk Account and download the latest release today. If not, download a 30-day free trial of AutoCAD2020 or AutoCAD LT 2020 to get started."

To view the full post with media and images, please visit:

https://blogs.autodesk.com/autocad/introducing-autocad-2020-autocad-lt-2020/

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NetSuite Brainyard Changes the Way the Tech Industry Shares Insights and Knowledge

3 April 2019

Oracle NetSuite is launching a new business research and benchmarking service that changes the way the technology industry shares insights and knowledge. Unlike expensive services provided by research firms or traditional vendor models that are built on proprietary data, NetSuite Brainyard is a free resource that gives everyone across the technology ecosystem equal access to the research, data and practical advice needed to grow and run a business. Brainyard is available today at NetSuite.com/Brainyard.

"We're giving away the source code for business growth by providing unparalleled insights into every single critical business process," said Jason Maynard, SVP of Global Field Operations, Oracle NetSuite. "Companies tell us they want to benchmark their businesses, and we're going to help them do that with Brainyard. Research firms and other vendors charge for this kind of resource, but we consider it part of our commitment to customer and partner success. We're not just delivering bits with NetSuite: It's not just about software; it's about helping businesses grow."

With the launch of Brainyard, NetSuite is taking the insights from its SuiteSuccess configurations, its value management team, its product management team and its solution consultants and making them quickly and easily accessible to everyone. Brainyard combines data, knowledge and expertise on growth and performance, including:

- **Business Research**: Includes state-of-the-industry reports and other qualitative and quantitative survey-based research conducted across seven industries by 20 industry principles and nearly 500 subject matter experts from across the global NetSuite team.

- **Benchmark Data**: Includes insights from 16,000 NetSuite customers and third-party business performance data from industry data provider FinListics, including detailed, industry-specific KPIs.

- Performance Analysis and Advice: Practical advice/guidance on organizational improvement through how-to resources, best-practice briefings and KPI analysis. Customers can also receive a business review with their NetSuite account manager.

Over the past 20 years, NetSuite has worked with some of the fastest growing companies in the world to help them successfully grow, scale and adapt to change.

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New features in 3ds Max 2020 for Revit

29 March 2019

Announced on the Autodesk Revit blog:

"New features in 3ds Max 2020 for Revit users that will allow for faster data import from Revit and better-organized and easier to manage scenes include:

- Combine By options let you combine by material more selectively by choosing:

- Combine by Revit Category and Revit Material

- Combine by Revit Family Type and Revit Material

- Filter dialog now displays the number of nodes that will be created in the scene's category or family type.

- You can import Revit 2017, 2018, and 2019 files into 2020 without the need to upgrade. Note that the Revit Compatibility pack (for each supported version) needs to be installed on your machine for functionality.

- IES lights imported from Revit are now converted more accurately

- Daylight System Update: We removed reliance on Mental Ray, resulting in a better translation. We now leverage the physical sun and sky, where the translation is done automatically without interruption.

Everything new in the release is detailed in this 3ds Max road map blog post, which explains how the 2020 version delivers the efficiency, performance, and stability that will speed up your content creation process. The post also gives a view into future development.

You can reference the 3ds Max 2020 Release notes for even more information about what's new and improved in this release, including performance and animation enhancements."

To view the original post, please visit https://blogs.autodesk.com/revit/2019/03/29/whats-new-in-3ds-max-2020-for-revit-users/

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Okta Launches New Advanced Server Access Product to Bring Secure Access to Critical Infrastructure

2 April 2019

Okta, Inc. announced Okta Advanced Server Access, a new product to bring continuous, contextual access management to secure cloud infrastructure, available today. For the first time through the Okta Identity Cloud, enterprises will be able to continuously manage and secure access to on-premises Windows and Linux servers and across leading Infrastructure as a Service vendors including Amazon Web Services, Google Cloud Platform, and Microsoft Azure. Using Okta Advanced Server Access, companies like Personal Capital and Workiva are centralizing access controls in a seamless manner that better mitigates the risk of credential theft, reuse, sprawl, and abandoned administrative accounts.

Organizations are grappling with how to secure a diverse and broad set of applications and infrastructure across a disparate, extended enterprise. Increasingly, organizations of all sizes are recognizing the need for a Zero Trust framework that limits excessive user permissions and access while requiring continuous authorization. However, the credentials traditionally used to access servers — Secure Shell (SSH) keys and Remote Desktop Protocol (RDP) passwords — are static, creating significant vulnerabilities across a company's network. Enterprises are struggling to keep track of who has the keys to access servers

running mission-critical workloads and storing valuable data, and are woefully limited when it comes to provisioning and deprovisioning powerful administrative accounts. With many organizations relying on multi-cloud infrastructure, technology leaders are left with limited visibility and agility when it comes to their critical, high risk infrastructure, and no central way to control and continuously secure their hybrid environments.

"Today's enterprises rely on cloud platforms and hybrid environments to build the products their customers rely on and engage with daily," said Todd McKinnon, Chief Executive Officer and co-founder of Okta. "It's the right approach for agile innovation, but server access has traditionally relied on shared credentials that may never change, and that creates significant vulnerabilities for any large or growing organization. Without a clear tie back to user identity, technology leaders lose visibility, agility, and ultimately security. Okta Advanced Server Access brings centralized identity security to organizations leveraging on-premises, hybrid, and cloud infrastructure to not only increase security, visibility, and control, but to create a significantly better experience for the teams building innovative products."

Taking Centralized Identity and Access Deeper

Designed with a revolutionary Zero Trust architecture from the ground up, the Okta Identity Cloud is capable of making smart access decisions based on dynamic user attributes and device conditions, where every login is independently authenticated and authorized. Okta Advanced Server Access gives organizations the ability to make granular access decisions about an individual login request continuously. Access controls are backed by a revolutionary one-time, short-lived credential mechanism that eliminates the common pain of tracking and protecting static keys. Whether an organization is securing its on-premises infrastructure, cloud infrastructure, or hybrid environments, Okta Advanced Server Access serves as a critical solution to a growing enterprise security problem — all while centralizing granular access control, lifecycle management, and administration through the Okta Identity Cloud.

Okta Advanced Server Access enables enterprises to:

- Mitigate the risk of credential theft: Okta Advanced Server Access replaces static keys and passwords commonly used to access servers with just-in-time, single-use client certificates.

- Centralize access controls to servers: Using Okta Advanced Server Access, customers can automate the end-to-end lifecycle of local server user and group accounts under a single directory. It delivers seamless SSO and MFA authentication to SSH and RDP workflows, inline to the protocols, while introducing contextual access controls based on dynamic user and device posture.

- Remove barriers to automation: With Okta Advanced Server Access, it is easy to automate server enrollment into the configuration management of choice, including Chef, Puppet, Ansible, and Terraform. Customers can support multi-cloud environments with a unified control plane that abstracts each provider's IAM functions, and makes every actionable event an API, allowing for custom workflows.

- Deliver a seamless end user experience: Okta Advanced Server Access works in line with the SSH and RDP protocols, integrated natively with CLI and GUI tools. As a SaaS-delivered product, Okta Advanced Server Access abstracts the complexities of credential management, account management, and more. Automation makes it easy to configure dynamic environments, eliminating redundant tasks without compromising security.

"Personal Capital brings clarity and confidence to people's financial lives through the combined power of technology and advice," said Maxime Rousseau, Chief Information Security Officer of Personal Capital, a leading digital wealth management company. "With more than 2 million users registered for our free personal finance tools and $9 billion in assets under management, trust is a core component of the Personal Capital brand. To maintain it, we've secured our cloud access in a highly efficient and frictionless way. Okta and Advanced Server Access has been a natural fit, and the benefits have been clear: our critical infrastructure is locked down from the traditional access control methods that would expose it to static credentials risks."

Availability

Okta Advanced Server Access is available starting today. For more information, visit: https://www.okta.com/products/advanced-server-access

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Oracle Blockchain Platform Now Available as Part of Everledger's Provenance Tracking Solution

26 March 2019

Oracle's enterprise-grade blockchain platform is now available as part of Everledger's blockchain-based solution following a rigorous development and scale evaluation process. As part of this, Everledger, a global emerging technology enterprise leading the way in real-world applications of blockchain, assessed Oracle's blockchain offering for its ability to provide extended product capabilities to support enhanced customer solutions.

In particular, the alignment will give Everledger users the ability to shadow blockchain transactions into a relational database, making it easier to run analytics on them. This will enable improved decision making, for example, being better able to determine how long it takes to transport gemstones from mine to the wholesaler and the retailer.

A pioneer in digital provenance tracking, Everledger's blockchain-based platform is trusted by many industries including diamonds, coloured gemstones, fine wine and art. The ability to transparently track the provenance and lifetime journey of assets as they move across global supply chains, is especially critical for high value goods. These industries are susceptible to increased potential for theft, fraud and counterfeit—in the diamond industry alone, fraud events cost the insurance industry millions of dollars a year.

Leanne Kemp, Founder & CEO Everledger says, "With an increasing consumer consciousness and a vocal demand for transparency, our work is focused on engaging entire business ecosystems to provide consumers the ability to make fully informed purchasing decisions. It is thus key for us to enable the ease of systems interaction and provide value add to our customers.

"The inclusion of Oracle Blockchain Platform in our offering enables us to deploy more innovative products and solutions for our customers globally, in particular with improved time to market for business intelligence reporting solutions. Oracle's comprehensive enterprise-grade offering will open our customers to realising more from our blockchain-based platform and crystalise value from the data in their own systems."

Key Elements

Some of the new capabilities of Oracle Blockchain Platform are deemed critical by Everledger in the integration of its blockchain-based platform with customers' existing business and IT systems. As blockchain becomes an important data store in the enterprise, the Oracle Blockchain Platform enables users to capture blockchain transaction history and current state data for analytics as well as integrate it with other data sources.

"Our longstanding goal has been to help customers to manage, protect, analyze and use the world's data for the benefit of all. Being able to work with innovative companies like Everledger is an amazing opportunity. We look forward to helping both the company itself further its innovations in tracking and tracing the authenticity of some of the world's most precious items, but also helping those in the ecosystem link key data sources for wider benefit," said Frank Xiong, group vice president, Blockchain Product Development, Oracle.

The key elements of note include:

- **Database access** – Data is an integral part of blockchain. With much of the world's data resident in Oracle systems, the use of Oracle Blockchain Platform to seamlessly link to those repositories will enable these same customers to leverage both their existing data stores and data on the Everledger blockchain.

- **Analytics** – Oracle Blockchain Platform's ability to connect to the rich histories stored in an organisation's existing database means that Everledger can seamlessly enable analytics integration for highly visual interactive dashboards and reports.

- **Monitoring** of network health, transaction rates, and other statistics, and other elements of blockchain administration/configuration, are made easier by enhanced REST APIs, which also simplify integration with existing enterprise IT tools.

- **Out of the box** plug and play capabilities from the Oracle Blockchain Platform makes it not only easy for Everledger to get off the ground, but will also easier for deployment.

- **Developer tools** – Additionally, the query tools for Oracle Blockchain Platform link into things like smart contract support standard SQL-based ledger queries, enabling organisations to leverage the skill sets their developers already have, thereby reducing the complexity of developing chaincode and boosting performance.

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PTC Improves Workforce Efficiency with Launch of Breakthrough Vuforia Expert Capture Augmented Reality Solution

1 April 2019

PTC announced from HANNOVER MESSE the release of its Vuforia® Expert Capture™ augmented reality (AR) solution, which is designed to improve workforce productivity, quality, safety, and compliance. Vuforia Expert Capture provides industrial enterprises with a faster, more efficient way to empower front-line workers with the relevant information they need to get the job done quickly and accurately the first time.

With a major skills gap threatening the manufacturing industry, more effective knowledge transfer from

existing subject matter experts (SMEs) is critical. Over the next decade, 10 million manufacturing jobs will likely be needed, yet millions are expected to go unfilled, according to a report from Deloitte and the Manufacturing Institute. An exodus of retiring workers, combined with increasing product complexity and customer demand, requires best-in-class manufacturers to take new approaches for delivering relevant information to front-line workers.

"We are excited to offer industrial enterprises a new way to use AR to leverage the tribal knowledge of SMEs and help alleviate the skills gap crisis threatening today's industrial enterprise," said Mike Campbell, EVP, augmented reality products, PTC. "Vuforia Expert Capture is a high-value, out-of-the-box solution that accelerates AR content creation that enables manufacturers to not only improve the accuracy and speed at which workers successfully complete new or unfamiliar tasks, but also to reduce training costs and time to productivity."

Vuforia Expert Capture provides up-to-date, relevant information when and where workers need it most – in the real-world context of their daily work environment. Knowledge can be captured on-the-fly as needs arise, without causing disruption to high-value workers. No advance preparation or development efforts are required to easily create step-by-step instructions for hands-on training and task guidance.

Captured procedures can be fine-tuned in a secure, SaaS-based environment and then dynamically delivered on RealWear HMT-1, Microsoft HoloLens, and mobile devices to front-line workers across the enterprise. Spatial intelligence from HoloLens' location-aware functionality can be leveraged to safely guide front-line workers through multi-step procedures at different locations without compromising speed and accuracy.

Vuforia Expert Capture is a valuable solution in manufacturing environments where existing service/maintenance/changeover procedures for equipment are unavailable. SMEs can easily record directions on how to perform these critical tasks, which can then be shared with new or redeployed workers for fast, efficient on-the-job guidance. Easy access to standardized instructions in the context of their work environment enables improved worker understanding and increased efficiency, uptime, and quality.

"Global Foundries has embraced augmented reality across its worldwide factories as one of the key levers of productivity improvements in a competitive marketplace," said DP Prakash, Head of Innovation in AI ML AR VR, from the CIO Office of Global Foundries. "With Vuforia Expert Capture, we are increasingly able to capture the wisdom of our workforce on the factory floors. This Vuforia capability speeds up the time to document Standard Operating Procedures (SOPs) by up to 10X, and helps reduce training time for employees in the classroom and factory by 50 percent."

To learn more and see a demo of Vuforia Expert Capture, visit PTC at HANNOVER MESSE. Vuforia Expert Capture is expected to be generally available at the end of May 2019.

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SAP Empowers the Intelligent Worker with Innovation to Make Factory Work Easier, Safer and More Productive

2 April 2019

SAP announced manufacturing technology innovations, including augmented reality, AI-powered management systems, 3D visualization and self-guided vehicles, from the SAP Manufacturing Suite and

the SAP Startup Accelerator for Digital Supply Chain program.

SAP will demonstrate these new "intelligent work" capabilities as part of its Design to Operate smart factory showcase at Hannover Messe, taking place April 1–5, 2019.

"Modern manufacturers want to attract the best talent, treat them well, and simultaneously exceed their own customers' expectations," said Hala Zeine, president, SAP Digital Supply Chain. "With these cutting-edge innovations, we can arm today's workers with the intelligent technology they need to get the job done faster and more effectively. Flawless manufacturing execution in the experience-driven economy is only possible with the right integration of people, assets and technology."

With SAP's manufacturing execution software, operators with any smart device can access 3D visual work instructions to help navigate complex assembly steps, raising output, reducing waste and improving on-time delivery. For an extra layer of workforce efficiency, the SAP Digital Manufacturing Cloud solution allows supervisors to assign operators to specific shifts and work centers, to ensure effective use of skills and time.

In addition, a new wave of startups in the SAP Startup Accelerator program has emerged to further modernize manufacturing and rethink the way work gets done. With 4tiitoo's eye-tracking and Kinemic's wristband gesture control technologies, employees can now execute tasks based on intent and work hands-free performing inspection and manufacturing duties. Arkite's unique combination of AR projection and 3D sensing makes complicated assembly simple, guiding operators in real time to minimize mistakes that lead to costly setbacks. Finally, Serva Transport Systems'automated guided vehicles improve the speed of information and materials, and ensure that products are in the right place at the right time, from warehouse to shop floor.

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Schneider Electric Launches New Digital Ecosystem to Drive Worldwide Economies of Scale for IoT Solutions

1 April 2019

Schneider Electric announced the launch of [Schneider Electric Exchange](#), the world's first cross-industry open ecosystem dedicated to solving real-world sustainability and efficiency challenges.

Schneider Electric Exchange is empowering a diverse community of solvers to create and scale business solutions and seize new market value. As digitization revolutionizes the way we work and interact, energy fundamentally becomes more distributed. With Schneider Electric Exchange, individuals gain entry to a vast network of technical tools and resources to develop, share, and sell digital and IoT innovations.

"What differentiates Schneider Electric Exchange is that it brings together people across industries and practice areas that share a passion for sustainability and efficiency, enabling collaboration and interaction across ecosystems. While all content, IoT applications, software, datasets, analytics, and tools are available to everyone, we have focused on specific capabilities that fit the needs and expectations of each community," says Hervé Coureil, Chief Digital Officer, Schneider Electric.

Tailored experiences to meet your digital needs

"Digitization continues to revolutionize the way we work and behave. The world can no longer work in

independent silos; the need for better integration and collaboration has unearthed new opportunities and solutions. Schneider Electric Exchange brings together a diverse ecosystem of digital innovators and experts, enabling the co-creation of solutions and enriching learning and speed through collective intelligence. Together this digital ecosystem creates, collaborates, and scales business growth," says Cyril Perducat, EVP IoT & Digital Offers, Schneider Electric.

With Schneider Electric Exchange anyone can:

- Reach a larger customer base in otherwise hard-to-reach new markets

- Gain access to a vast library of resources such as APIs, analytics, and data sets to improve digital offers

- Leverage digital tools and expertise to scale solutions and speed up time to market

- Collaborate through a powerful cloud-based platform to share insights and designs, and effectively manage and complete projects

The Minimum Viable Product (MVP) first released in private beta mode in April 2018, then opened to a broader customer base in November. The platform is poised for strong growth and already boosts a global footprint in Europe (35%), APAC (35%), and the Americas (20%).

An extended ecosystem approach to digital innovation

Schneider Electric Exchange draws on the company's ecosystem of digital partners to accelerate and scale innovation – and provide companies with the tools needed to operationalize AI for real-world problems. Accenture, a global management consulting and professional services firm, brings the ability to create customized solutions and develop digital business models. Another partner, Claroty, a security specialist for operational technology infrastructure, offers industrial cybersecurity expertise, working with companies to address the larger digital risk surface that comes with integrating IIoT solutions.

Schneider is using published datasets and SaaS from the Schneider Electric Exchange partner Senseye, a technology company in predictive maintenance (UK), in one of its Smart Factory manufacturing plants, Le Vaudreuil. Likewise, Schneider is co-innovating a digital service offer for the retail chain market in Italy with the company Predictive Layer, which specializes in energy forecasting. Through its network of communities, Schneider Electric Exchange can broaden the geographic and market reach or our partners.

Schneider Electric Exchange and EcoStruxure

Schneider Electric Exchange includes EcoStruxure™ solutions, which provide access to the company's open, interoperable, IoT-enabled system architecture and ecosystem of experts. EcoStruxure is deployed in almost 500,000 sites with the support of 20,000+ developers, 650,000 services providers and partners, 3,000 utilities and connects over 2 million assets under management. With the concepts of co-innovation and collaboration added to the benefits of EcoStruxure, Schneider Electric Exchange users can take their business to the next level, while benefiting from Schneider's strong market reach and expertise.

For more information, please visit: https://www.schneider-electric.com/en/partners/exchange/

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Siemens' MindSphere on Alibaba Cloud ready to power the Industrial Internet of Things in China

2 April 2019

Siemens announced today that MindSphere is now available on Alibaba Cloud to foster the industrial Internet of Things (IoT) in China. Today's announcement delivers on the promise made in last year's Memo of Understanding signed by Siemens and Alibaba Cloud leadership under the witness of German Chancellor Angela Merkel and Chinese Premier Li Keqiang.

MindSphere is Siemens' cloud-based, open IoT operating system that delivers a wide range of device and enterprise connectivity options, robust applications, advanced analytics, and closed-loop innovation with complete digital twin solutions. The implementation of MindSphere on Alibaba Cloud provides compelling solutions for manufacturers in China to realize innovation and support Industry 4.0 initiatives.

"Companies around the world have been able to take advantage of industry-leading IoT capabilities from MindSphere on Amazon Web Services and Microsoft Azure," said Tony Hemmelgarn, President and CEO at Siemens Digital Industries Software. "With MindSphere on Alibaba Cloud, companies now have options in Mainland China."

"Siemens, as the market leader in industrial automation and digitalization, is cooperating with customers in a variety of industries such as manufacturing, electrics, water and pharmaceuticals," said Wang Haibin, Executive Vice President, Siemens Ltd., China and General Manager, Digital Industries Siemens Greater China. "Working hand in hand with Chinese customers, Siemens is continuing to drive forward the expansion of MindSphere to more industries, creating a more extensive ecosystem."

For further information on MindSphere, please see www.siemens.cn/mindsphere or www.siemens.com/mindsphere.

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VMware Advances Hybrid Cloud Operations and Automation with Refreshed vRealize Cloud Management Platform

2 April 2019

VMware, Inc. announced advancements across its integrated VMware vRealize cloud management platform to help IT enable developers and IT admins to quickly build and deliver applications in hybrid cloud environments with more secure and consistent operations. The new product releases – vRealize Operations 7.5, vRealize Network Insight 4.1, vRealize Automation 7.6, and vRealize Suite Lifecycle Manager 2.1 – will combine to provide expanded self-driving operations and enhanced programmable provisioning capabilities across private and hybrid clouds.

VMware Introduces New Application Operations and Compliance Capabilities
VMware vRealize Operations delivers self-driving operations management from applications to infrastructure to optimize, plan and scale hybrid clouds including on-prem environments. It delivers continuous performance optimization based on operational and business intent, efficient capacity management, proactive planning, intelligent remediation and integrated compliance. VMware vRealize Operations 7.5 will extend self-driving capabilities to help customers achieve:

Continuous Performance Optimization: To further enhance application performance based on

operational and business intent, this release introduces hyperconverged infrastructure (HCI) performance optimization of VMware vSAN clusters via workload rebalancing that is resync-, slack space- and Storage Policy Based Management (SPBM)-aware. Additionally, the platform will introduce placement optimization for vSAN workloads using storage intent definition.

Efficient Capacity Management: To further reduce costs and risks through optimal utilization, proactive planning and procurement, this new release will add allocation-based capacity management alongside existing demand-based modelling. This release will also include updated vSAN capacity management capabilities including new HCI cost drivers and "what-if" scenarios to model the impact of increasing the capacity of vSAN clusters. In addition, it will provide expanded "what-if" scenarios for comparing costs of VMware vSphere-based private clouds with VMware Cloud on AWS, AWS, Azure, Google Cloud, IBM Cloud, and other VMware Cloud Provider Program partner clouds. To help customers succeed in their multi-cloud journey, this integrated portfolio combines with CloudHealth by VMware to deliver complete visibility, optimization and governance for a multi-cloud environment.

Intelligent Remediation: To predict, prevent and quickly troubleshoot application and infrastructure issues, this new release will introduce Telegraf agent-based application and OS monitoring with agent lifecycle management and out-of-the-box (OOTB) application troubleshooting dashboard. It will also provide enhanced capabilities mapping the relationships between applications and infrastructure to decrease time-to-identify root cause of performance and availability issues.

Integrated Compliance Capabilities for VMware vSphere: To reduce risk and enforce IT and regulatory standards, this new release will introduce integrated compliance and automated drift remediation capabilities for VMware vSphere. Customers will be able to measure vSphere compliance stature against critical public standards, extend into custom compliance standards as well as automate configuration management with OOTB workflows and vRealize Orchestrator integration. (Read the what's new in vSphere 6.7 Update 2 blog post).

Emirates Airline uses vRealize Operations for capacity management and planning as well as monitoring and alerting of its private cloud environment. "From day one, VMware vRealize Operations has had a positive impact on our private cloud. It has helped us to improve our operational efficiency as well as enable us to achieve significant cost savings by pinpointing and reclaiming wasted compute, memory and storage resources—equal to 300 virtual machines each averaging 4 vCPUs, 8 Gigabytes of RAM and 200 Gigabytes of disk space," said Fabian Thomas, Datacenter Manager at Emirates Airline. "The reclaimed resources and cost savings we achieved helped fund additional IT projects."

Introducing Application-Centric Security and Network Analytics for Kubernetes
VMware vRealize Network Insight, which is also available as a VMware Cloud Service, will extend visibility for application-centric security and networking in Kubernetes environments. vRealize Network Insight 4.1 will enable organizations running Kubernetes or VMware Enterprise PKS environments to plan security, troubleshoot networking and use advanced analytics for containerized applications. The new release will further help organizations plan and troubleshoot security and networking in an application-centric manner by connecting with ServiceNow and adding application specific dashboards. Additionally, vRealize Network Insight 4.1 will deliver increased visibility across network overlay and underlay by introducing flow latency and F5 load balancer support.

Automation and Lifecycle Management Enhancements Ease Hybrid Cloud Adoption
VMware vRealize Automation 7.6 will introduce enhanced integrations with VMware's software defined data center stack and management capabilities to make it easier and simpler for customers to automate their hybrid cloud environments. The new release will further extend its integration

with [VMware NSX Data Center](#) with new on-demand support for private networks as well as VMware NSX-T and NSX for vSphere configuration for different clusters within a single VMware vCenter Server. To simplify building customized and enhanced request forms for catalog items, VMware vRealize Automation 7.6 will deliver enhancements to Custom Forms including API validation and Regular Expression support for DataGrid. Additionally, the release will provide an improved user experiences and support multi-tenancy in VMware vRealize Orchestrator.

VMware vRealize Suite Lifecycle Manager 2.1 will further help customers to manage and automate their environments via enhanced integration with [VMware Cloud Foundation](#), improved user experiences, more granular deployment options, and expanded content management capabilities including multi-content capture and support for Bitbucket endpoints.

New Study Highlights vRealize Operations Customer Cost Savings and Efficiency Gains
VMware commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may achieve by deploying VMware vRealize Operations. (1) The study provides readers with a framework to evaluate the potential financial impact of vRealize Operations.

To better understand the benefits, costs, and risks, Forrester interviewed five organizations, each with years of experience using vRealize Operations. Prior to deploying vRealize Operations, these organizations struggled with limited performance, inefficiencies in troubleshooting, and wasted capacity. Their deployments delivered improved visibility, performance and capacity optimization, and faster remediation. According to the study, organizations achieved the following benefits:

- **A 30 percent productivity improvement from intelligent remediation, improved visibility, and faster reporting** using advanced analytics to correlate metrics and log data to predict, prevent, and troubleshoot virtual environments.

- **A 20 percent reduction in hardware cost savings plus 10 percent reduction in storage costs** via capacity optimization that uses predictive analytics to automatically balance workloads and avoid contention.

- **A 50 percent reduction in database software licensing costs** via continuous performance optimization functionality that enables customers to automate workload balancing and host-based workload placement based on business intent leading to consolidation and separation of software licenses.

- **A 93 percent reduction in unplanned downtime** by applying continuous performance optimization based on operational and business intent, optimizing resource usage, detecting capacity shortfalls, and proactively resolving issues—helping to optimize their environments and improve availability.

"Organizations are using VMware's self-driving operations and programmable provisioning to radically simplify application and infrastructure management," said Ajay Singh, senior vice president and general manager, Cloud Management Business Unit, VMware. "Customers look to VMware and our vRealize Cloud Management Platform to operate and automate their hybrid cloud environments with a 'hands-off' and 'hassle-free' approach to focus on transforming their business."

Product Availability
VMware vRealize Operations 7.5, VMware vRealize Automation 7.6, VMware vRealize Network

Insight 4.1, VMware vRealize Suite Lifecycle Manager 2.1 are expected to become available in VMware's Q1 FY20.

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What's New in Autodesk Inventor 2020

27 March 2019

Announced on the Autodesk blog:

"Over the next few weeks, customers across the globe will start to see Inventor 2020 available for download in their Autodesk Accounts and the Autodesk Desktop App. Calendar year 2019 marks 20 years of Inventor in the market, and Inventor 2020 delivers enhanced user interface and workflows, more professional grade functionality and even more customer-driven improvements. We wanted to get you ready for what you will see after installing Inventor 2020.

The Inventor 2020 User Experience

Inventor 2020 delivers a new light theme interface that adds additional functionality and improves your productivity right from the start. We enhanced lighting styles, command icons, and added graphic presets so you can change multiple view settings based on Performance, Quality, or Balanced. Inventor 2020 also supports multi-monitor workflows so you can dock multiple Inventor files on different screens while working in a single Inventor session.

The Extrude, Sweep, Revolve and Thread commands have all been refreshed with the new property panel experience. Not only did we move these commands to panels (similar to Measure and Hole in Inventor 2018 & 2019), but we added functionality that you have been asking for. Sketching was also enhanced to allow for more complex region and loop selection for your designs.

All of these improvements were driven by countless hours of research and analysis from our user experience team. There are a lot of details on how we are continuing to improve the overall Inventor Experience and we will have another blog post dedicated to that in the upcoming weeks.

Professional Grade Enhancements

Enhancements were made from sketching to complex modeling to give you new functionality to your core design tools and workflows. The Sweep command was enhanced to add the ability to sweep a tool body. We worked with many of you to ensure we implemented this in a way that addressed your modeling needs. The tool body itself can be any shape, and the sweep can both remove and add geometry.

Brand new commands like Unwrap have been added. With Inventor 2020, you can use Unwrap to flatten nearly any set of faces into a flat surface. You can show this surface in a drawing or export it if needed. Many of you designing soft goods and stamped parts have been asking for this type of functionality.

Inventor 2020 continues to improve Frame Generator. You may have noticed we started improving Frame Generator quite a bit with the [Inventor 2019 updates](). This latest release moves many of the Frame Generator commands to the property panels. End Cap functionality was added and your Notch, Miter, and Insert Frame workflows have all been improved.

User-Driven Enhancements with Inventor Ideas

Many of the user-driven enhancements to Inventor 2020 come from your submissions through the [Inventor Ideas page](#) . This is a great way for you to see what your fellow users are asking for, vote for their ideas, or submit one of your own. In addition to the Ideas page, the Inventor team has direct customer engagements throughout the year. We visit customers at their location and have sessions where we invite customers to come to Autodesk offices. This type of engagement with you, Inventor users, helped define over 35 customer-driven enhancements into this release.

These enhancements vary from many of the Frame Generator improvements to Tube & Pipe file naming and performance to showing Sketch Blocks in the Relationships search.

Here is a great video showing many of the customer-driven enhancements in Inventor 2020

Over the next few weeks, the Inventor team will be posting more detailed articles on the Product Design and Manufacturing Collection, Factory Design Utilities, and more.

A huge "Thank you" to all of you who use Inventor and continue to provide feedback. Be sure to keep an eye on the Inventor blog for a lot of new topics on Inventor 2020."

To see the full post with full media and images, please visit:
https://blogs.autodesk.com/inventor/2019/03/27/inventor-2020-whats-new-a-fresh-new-look-and-feel-continued-customer-driven-enhancements-and-professional-grade-functionality/

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