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CIMdata News

Aerospace & Defense PLM Action Group Publishes Report on Digital Twin/Digital Thread Solution Definition

2 August 2022

This position paper offers an industry baseline definition and understanding of the current capabilities of the digital twin/thread in the A&D industry.



Representatives of the Aerospace & Defense PLM Action Group (AD PAG) have published a position paper, Digital Twin/Digital Thread Solution Definition for A&D, for review and consideration within the A&D industry. The purpose is to facilitate consensus on an industry baseline definition and understanding of the current capabilities of the digital twin/thread in the industry. The position paper is the

culmination of a year of research and analysis of technical writings on the subject by a project team comprising domain experts from the seven AD PAG member companies – Airbus, Boeing, GE Aviation, Gulfstream, Pratt & Whitney, Rolls-Royce, and Safran.

Many digital twin/thread position papers and associated definitions exist within the A&D industry. This position paper attempts to reconcile definitions, unify differences, and construct a formal framework of industry definitions. An explanation of the need that digital twins and digital threads are intended to fulfill is offered. The variability of the need is the key to understanding why several acceptable definitions for digital twin and digital thread exist.

According to Robert Rencher, Senior Business Engineer, Associate Technical Fellow, Boeing, who leads the project team, “The aerospace and defense industry seeks to understand the purposeful need for digital twins and digital threads. The plethora of definitions is best understood by appreciating how digital twins and threads are envisioned by various communities across the product lifecycle. This cumulative effort provides an organizing framework and consolidation of digital twin and digital thread definitions to support the range of product lifecycle perspectives.”

This position paper is the first in a series of papers that will be released as the project team progresses in their work. Future papers will address digital twin/digital thread business architecture and methodologies, comparative analysis of industry standards, value proposition, and strategy and roadmap.

To download the paper, visit <https://www.cimdata.com/en/aerospace-and-defense/publications/digitaltwin-digitalthread>

About the Aerospace & Defense PLM Action Group

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

For more information about the A&D PLM Action Group, contact CIMdata at info@cimdata.com.

Continuous Virtual Verification and Validation Streamlines Automotive Development Processes - a CIMdata Commentary

5 August 2022

Siemens solutions foster continuous verification and validation

Key takeaways:

- Continuous virtual verification and validation through all phases of the product lifecycle—throughout design, manufacturing, and operations—is critical so that an automaker can assure intended functions from their inception.
- Only a fully integrated solution, that includes virtual integration and simulation capabilities, can enable the process revolutions keeping automakers competitive.
- Digital twins correlated with physical performance test results and virtual evaluations enable continuous collaboration and optimization helping stakeholders across different disciplines concurrently work together as a product evolves.
- Reducing or eliminating early physical prototypes through simulation and linking requirements with test results yields time savings and shortens verification cycles from months to weeks, and in some cases hours. Continuous, visual product assembly and performance motion studies of subassemblies as they are designed provide insights earlier in product development.
- Siemens Digital Industries Software Systems Digitalization solution is designed to keep product development teams integrated, improve decision-making across the lifecycle, and keep relevant requirements visible all the time.

Automakers' product development is constrained by the time it takes to build physical mockups and samples for development testing, often called learning loops. The challenges associated with evaluating a design using physical prototypes include months of construction and then testing in a laboratory or on a test track. Sometimes prototypes are ideal product representations and do not reflect typical mass manufacturing realities. Time to market and improving quality while introducing new features faster drives the automotive marketplace as summarized in a recent CIMdata whitepaper[1] covering accelerated product development (APD).[2]

CIMdata's definition of product lifecycle management (PLM) emphasizes the complete lifecycle of a product and all its related data and processes, from requirements to, to planning and supply chain participation, then mass production, actual in-use performance, product service and upgrades, and finally decommissioning and recycling. Systems Engineering accelerates automotive product development and operations by considering this broader context—one that includes the operational environment of the vehicles.

Automotive product development process reengineering must address scheduling, critical path, and material constraints. Systems engineering and advances in inexpensive computing and the use of virtual engineering are challenging the legacy processes automakers use. Collecting and using customer usage patterns to influence product development and upgrades is becoming required to staying competitive. In the APD whitepaper, CIMdata introduced the notion of continuous product performance engineering where test sets can be used to perform verification and validation evaluations on demand. Using virtual integrations enables the reduction of physical prototypes, which in turn allows for faster learning cycles—and likely more of them (the ability to perform more and better design/performance optimization).

Many product development issues are better found through simulation, which only needs a coordinated

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release of component designs and not the complexity of scheduling and waiting on physical samples. Using simulation to continually evaluate a design, especially the integration of key components and subsystems, without waiting on physical prototypes significantly streamlines critical path activities in automotive product development. Removing this constraint, especially during earlier development phases, allows more features to be introduced faster. Software systems can be evaluated with virtual product models earlier, and then integrated with electronics, wiring, and the rest of the vehicle for final validation testing. Continuous verification and validation of designs, test/simulation results, and product complexity using comprehensive digital twins is possible and essential to stay competitive.

Continuous Learning Drives Constant Verification and Validation

Constant learning during development is key to incorporating new technologies and bringing new features to market. Learning is continuous when the next feature can be evaluated as it is developed rather than months later using a physical prototype. Over the past few decades, virtual mockups have replaced physical bucks for exterior shape and interior ergonomics reviews and software developers have relied on computer-based test environments to evaluate their software behavior and performance. Today, using representative models of physical systems, integration-based evaluations, motion-studies, and even destructive virtual testing to find the limits of a design can be done cost effectively.

Each loop within the automotive ecosystem collects empirical measurements needed to train models and make them trusted. Sensor and actuator models for each subsystem under test provide stimulus and response as if the subsystem were in an actual driving scenario. With trusted models, teams collaborate faster making virtual verification and validation desirable.

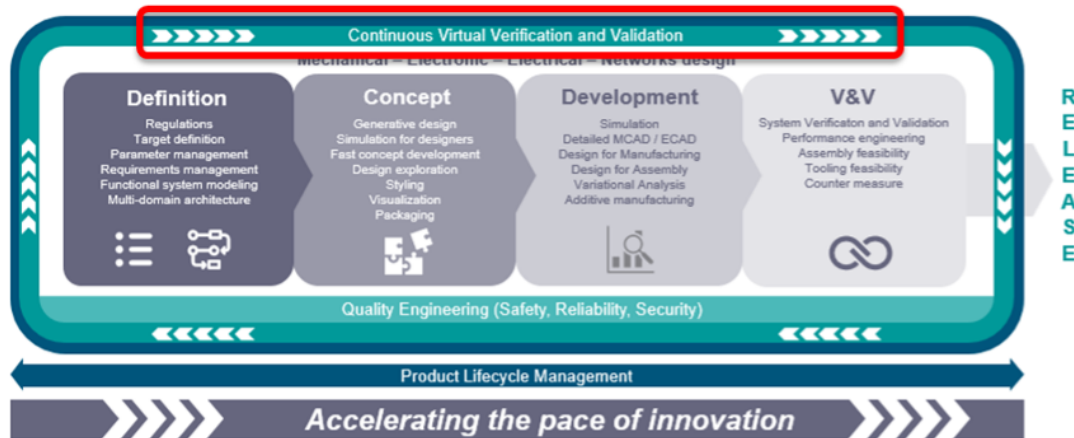


Figure 1—Continuous Virtual Verification and Validation Accelerates the Pace of Innovation
(Courtesy of Siemens)

Siemens has identified their solution set for advancing virtual engineering as Continuous Virtual Verification and Validation (CVVV). Figure 1 shows how CVVV encompasses all phases of product development. Depicting it as a cycle of learning that is constantly evaluating designs, emphasizes the continuous nature of learning—best achieved without delays waiting on physical prototypes.

With modern communications and in-vehicle electronics, continuous improvement of automobiles during operations is occurring. Validation of an upgrade must be managed, even as upgrades are occurring more frequently. Assuring safety by applying trusted, shared models that learn from expansive sensing of the vehicle's operation is now possible. Building trust in virtual models of an operational environment requires constant evaluation of customer real-world scenarios. Automakers rely on learned, complex operational scenarios. This means building models at every layer of abstraction from diverse

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data silos each containing different empirical insights. Leveraging real-world measurements to correlate virtual model-based scenarios using digital twins to help assess complex operational anomalies will make automotive upgrades safer and more reliable, thereby fostering societal trust. Constant learning and adaptation keep models trustworthy. Doing this in near real-time keeps them well correlated. With correlated models and real-world scenarios, continuous verification and validation is possible.

Performance engineers conduct product level validation tests as one of the final steps before a product is released for mass production. Performance engineering goes beyond verification test suites and includes an assessment of varying operational conditions like weather, velocities, road conditions, friction, and many more. Select validation test cases must be repeated when a vehicle upgrade is made. The event triggering a validation test is different than the mass production launch.

Automating the execution and evaluation of test suites as often as a new feature set is ready will become a competitive advantage over manual and open loop hardware-in-the-loop testing. Orchestrating tests across a wide variety of systems for each incremental change needs effective incremental verification and validation scenario management. Coordination between the levels of testing, from component verification to subsystem and system validation, will benefit automotive product development, likely shortening time to market while improving the quality of design and upgrades.

One last point, teams working collaboratively in parallel while using the same trustworthy models will develop enhancements and/or investigations from different expert contexts. Contexts for decision-making will be improved with automated, continuous verification and validation derived from actual usage patterns, likely derived from real customer experiences. Validation engineering is becoming continuous for automakers, performed whenever a new release is to be provided to the customer.

How Siemens Enables Continuous Virtual Verification and Validation

Siemens recognizes that all core business processes for all product disciplines must perform verification and validation, from components to final systems. Software systems with millions of lines of code rely on automated, daily test suites where anomalies are detected automatically. Quality teams then assess and often adjust the next release, which is provided in a few days, not years. Siemens has embraced the need for continuous collaborative engineering driven by faster product releases and upgrades. Their CVVV suite has capabilities used across the development phases and cycles depicted in Figure 1. By combining capabilities from their broad solution set, Siemens has incorporated testing automation capabilities that span the major engineering domains. Functions from systems engineering to systems interaction to verification and validation are all supported by managing simulation scenarios across the tool suites. Figure 2 summarizes these domains and the broad design & simulation tool suites that support them: Thermal, Topology, Motion, Vibration, and more.

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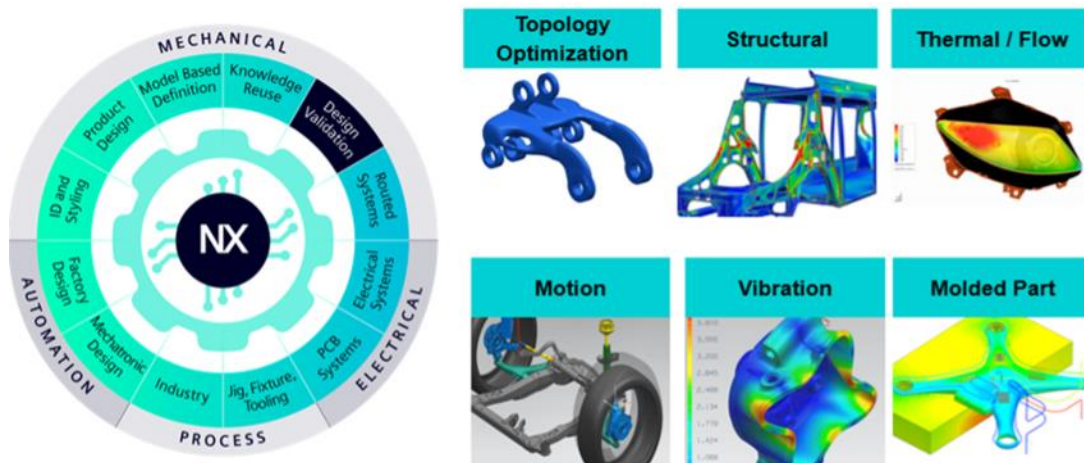


Figure 2—Empowering Designers & Engineers with NX Integrated Simulation Tools
(Courtesy of Siemens)

By combining simulation capabilities within its NX CAD suite, Siemens helps bridge the disciplines noted in Figure 2. Earlier discovery helps accelerate concurrent engineering. CIMdata believes that Siemens concept of Continuous Virtual Verification and Validation executed continuously from Definition to Concept, then Development, and finally Validation, as illustrated in Figure 1, is excellent. By combining key tools from their broad solutions set, including executable, comprehensive digital twins, Siemens is enabling virtual engineering, moving integration and discovery at all levels earlier in the development process. No more waiting on development physical prototypes.

Designers and engineers can now discuss and decide how vibration effects heat transfer and even how structural dynamics effects durability, earlier in the development process, lowering new product risks. Adjusting the automobile controls to manage a post-production discovery helps improve long term product life, keeping it operational. Combined with Auditable Requirements Traceability,^[3] these capabilities assure product developers are always using and evaluating the correct set of requirements—even as requirements change during development and use.

Simulations need load cases and related environmental conditions. Siemens has tools for discovering and managing test scenarios as they are experienced—these include Prescan 360 and Simcenter SCAPTOR, summarized in a commentary by CIMdata.^[4] Siemens Prescan 360 supports performance testing by synthesizing and running repeatable scenario tests with varying boundary conditions. By using models of sensors and vehicle dynamics, the signals a control system would monitor can be emulated, making the control system react as it would in the final product. This enables control system development independent of physical vehicle integration and evaluation. This means re-validation after mass production becomes affordable, which in turn encourages more post mass production feature introductions.

Simcenter SCAPTOR helps orchestrate newly discovered scenarios which spur expansion of verification and validation criterion. By managing the scenarios needed to cover sufficient verification and validation testing, Simcenter SCAPTOR helps automakers achieve product validation without billions of miles of physical testing—which is a forecast from some automaker executives based on the historical practice with build and break test cycles.

Concluding Remarks

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Product engineering has always focused on what customers value—safety, fun, luxury, and lifestyles. The accelerating pace of changing consumer tastes, thus the need to adjust performance measures, will occur at a faster and faster pace. CIMdata forecasts that automakers using Siemens' CVVV solution set can realize the expansion of virtual, continuous engineering. This virtual engineering growth cannot slow down product development, and with Siemens continuous verification and validation capabilities it will not. Rather the development processes will evolve and the interaction of performance engineering with the other disciplines will accelerate. Comprehensive, efficient product engineering remains a competitive advantage and process innovations will be revolutionary with continuous verification and validation.

Siemens' CVVV solutions provide test creation and management capabilities for execution and correlation studies at all levels of automotive design and operations, utilizing a combination of local and cloud-based technologies. Continuous verification and validation becomes cost effective when most of it is done virtually. When required, hardware subsystem and integration testing will be done with the same scenarios as those used in the virtual simulations. Siemens' multi-domain information model has been designed to continuously provide an accurate digital twin of the vehicle throughout its use. Siemens provides a solution set ready for future automotive development and operations—supporting all product upgrades with their SSE, Capital, and now CVVV solutions.

CIMdata recommends that companies evaluating their need for verification and validation consider Siemens' portfolio of solutions. With computers and their associated electronics being pervasive, a comprehensive, integrated yet heterogeneous, multi-disciplinary product development environment connected to all stakeholders is essential. Siemens' ongoing advances in Quality Management,^[5] Systems Engineering,^[6] Simulation with Executable Digital Twins,^[7] Connected Engineering,^[8] Systems of Systems Frameworks,^[9] and future concepts in the works provide a rich set of capabilities. Finally, Siemens is providing engineering tools that can be used to explore operational conditions as they are experienced. This is what happens when a leading solution provider builds on their strengths.

[1] See: Accelerating Product Development (Faster Decisions While Reducing Physical Prototypes). January 2022. <https://www.cimdata.com/en/resources/complimentary-reports-research/white-papers>

[2] Research for this commentary was partially supported by Siemens Digital Industries Software.

[3] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/18101-siemens-provides-interactive-auditable-requirements-traceability-accelerating-development-of-complex-automobiles-commentary>

[4] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/18008-siemens-fosters-connectedness-bringing-products-and-cities-together-commentary>

[5] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/16341-a-broad-approach-to-quality-management-commentary>

[6] See: Driving the Change for the Future of Automotive Development. 24 November 2020. <https://www.cimdata.com/en/resources/complimentary-reports-research/white-papers>

[7] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/16725-siemens-making-the-digital-twin-executable-predictively-aligning-its-real-world-counterpart-highlight>

[8] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/14887-connected-engineering-accelerates-innovation-commentary>

[9] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/17304-siemens-broadens-mbse-to-engineer-beyond-individual-autonomous-vehicles-commentary>

Acquisitions

Accenture Acquires Tenbu to Expand Data and AI Capabilities and Unlock Business Value Across the Cloud Continuum

1 August 2022

Accenture has acquired Tenbu, a cloud data firm that specializes in solutions for intelligent decision-making and planning through areas such as analytics, big data and machine learning. With more than 150 certifications, Tenbu's team of 170 data specialists will join the Data & AI team within Accenture Cloud First. Terms of the acquisition were not disclosed.

"Our goal is to help clients with total enterprise reinvention by building their digital core, optimizing operations and accelerating growth – and cloud data and AI are fundamental to a strong digital core," said Karthik Narain, global lead for Accenture Cloud First. "Adding the Tenbu team will expand our capabilities to help companies drive new services, growth and resilience using data from across the cloud continuum for intelligent decision-making."

"With changing business and operating models, evolving architectures, applications and data, clients are looking for help to understand how they can monetize across the cloud continuum," said Paulo Ossamu, who leads Accenture Technology in Latin America. "The Tenbu team brings vast data and AI specialists to draw up clear priorities and help keep different parts of our clients' organizations aligned to achieve specific business outcomes."

The acquisition expands Accenture's Cloud First capabilities through Latin America and globally to bring the company's data and AI expertise, industry depth and repeatable innovation with the cloud ecosystem to help clients unleash the business value of data. Tenbu is the 11th acquisition with headquarters in Latin America that Accenture has made in the past five years, including Organize Cloud Labs in Brazil as well as Wolox and Ergo in Argentina, among others.

With headquarters in Sao Paulo, Tenbu focuses on minimizing complexity with a mission of inspiring people to creatively use data, supported by disruptive technology and talent transformation. Using a 360-degree approach, Tenbu guides its clients through the entire cloud data journey utilizing talent, technology and data to drive business transformation.

Carlos Pinto, Tenbu's CEO said, "Joining the Accenture Cloud First team will enable us to bring our specialized skills to help clients make smart, well-informed decisions that generate value. It's also a massive growth opportunity for our people to be integrated with Accenture Cloud First and to team up on business opportunities across the Accenture business."

Accenture to Acquire Sentia in the Netherlands, Belgium and Bulgaria to Bolster Infrastructure Engineering Capabilities Across the Cloud Continuum

2 August 2022

Accenture has agreed to acquire Sentia's businesses in the Netherlands, Belgium and Bulgaria. With headquarters in the Netherlands, the Sentia group is a leading cloud consulting company that manages private and public cloud migrations and provides digital-experience monitoring services.

With more than 500 certifications, Sentia's team of approximately 310 cloud specialists in the

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Netherlands, Belgium and Bulgaria will join Accenture Cloud First. Terms of the acquisition were not disclosed.

The acquisition expands Accenture's Cloud First capabilities to provide end-to-end cloud infrastructure services across the cloud continuum of public, private and sovereign clouds. Today's news arrives as the plethora of cloud options create more complexity for organizations as they navigate different architectures, burgeoning innovations and changing regulations.

"Total enterprise reinvention starts with a solid digital core. To activate this digital core, organizations need to build a scalable, fit-for-purpose cloud foundation that provides the strategic agility they need to ensure their resilience and future competitiveness," said Karthik Narain, global lead for Accenture Cloud First. "Adding Sentia's specialists will enhance Accenture Cloud First's migration and modernization services aimed at getting clients' workloads to their optimal location on the cloud continuum — from public to edge and everything in between."

"With Sentia, we are expanding our strategic infrastructure engineering and emerging technologies capabilities across Europe, especially in the Netherlands and Belgium," said Roy Ikink, lead for Accenture Cloud First Netherlands. "The Sentia team brings valuable experience with sovereign cloud strategies designed to help clients address local regulations and requirements around data privacy, access and control."

Sentia currently provides cloud advisory and delivery services spanning hybrid and multi cloud strategy; cloud transformation; and migration, among others. The company's main cloud control and optimization services include cloud managed services, cloud security services, and cloud infrastructure migration. Sentia also offers unique digital experience monitoring services that analyze, track and predict enterprise applications and cloud services from an end user's perspective.

Ian Zein, Sentia's CEO said, "We've built Sentia into a leading managed cloud infrastructure transformation provider known for our 'extreme ownership,' customer intimacy and operational excellence in complex (often regulated) environments. Now we can take our deep experience in both public and private cloud transformation to help Accenture clients operate with greater speed and achieve stronger business outcomes at scale."

Note: Sentia's Danish business is not part of the acquisition and will continue as an independent business under the Sentia brand, supported by Waterland Private Equity as main shareholder. Completion of the acquisition is subject to customary closing conditions, including receipt of applicable regulatory approvals.

ACQUISITION EXPANDS VERTEX'S SUITE OF CONSTRUCTION CONSULTING SOLUTIONS AND AUGMENTS NORTH AMERICAN PRESENCE

28 July 2022

VERTEX, a portfolio company of Wind Point Partners, ("Wind Point") is pleased to announce the acquisition of Fulcrum, LLC ("Fulcrum" or the "Company"), a premier construction management consulting services firm that is well-positioned to serve its clients throughout the life of their project by providing due diligence, pre-construction, construction and operations support, and serving clients across North America.

"The addition of Fulcrum to our team will not only enhance our project advisory practice, but also expand our resources in key markets," said Bill McConnell PE, CEO of VERTEX. "This partnership was a fit from the start based on the alignment of our respective cultures. Moreover, Fulcrum's staff members will have an opportunity for further growth by adding expert support for our surety work and

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other service areas where we have regional staffing gaps.”

Nathan Brown, Managing Director at Wind Point, commented, “Fulcrum’s core competencies in construction and project risk management bolster the broader VERTEX platform, while also expanding geographic coverage and adding strong technical talent to our employee base. Expanding our capabilities to help drive cross-selling opportunities is a core piece of VERTEX’s value creation plan and this partnership with Fulcrum aligns with our continued efforts to deliver outstanding service to our customers.”

Mark Degenars, the President of VERTEX’s Construction Consulting Services said, “The strength of the Fulcrum team and synergies were obvious from the onset. Our combined team of construction project advisory experts will enhance both the employee and client experience. This partnership provides our clients with additional expert resources and stronger geographic coverage, while also providing our employees more exciting career opportunities.”

VERTEX’s multidisciplinary professional services, national office footprint, and commitment to quality, value and continuous growth opportunities for all team members make it an excellent fit for Fulcrum. “The synergy created by the VERTEX/Fulcrum combination will provide seamless opportunities for current and future clients to enjoy the convenience of one-stop shopping together with the customized benefits of specialized attention on an impressive list of Professional Services,” said Hugh Coyle, CEO and Manager of Fulcrum. “Fulcrum staff are always energized by the ability to better serve our expansive client base, which coupled with increased career and academic opportunities afforded by this new VERTEX/Fulcrum combination, makes this an exciting time to be part of an expanded group.”

Fulcrum is VERTEX’s second acquisition since partnering with Wind Point in August of 2021. EFCG served as the financial advisor to VERTEX on this recent acquisition.

Sandvik acquires US based tap manufacturer Balax

2 August 2022

Sandvik has completed the acquisition of the assets of US based company Balax, Inc. (“Balax”), a leading supplier of carbide and HSS cut taps and roll forming taps, primarily within the general engineering and automotive segments. The company will be reported in Walter, a division within the business area Sandvik Manufacturing and Machining Solutions.

“The acquisition of Balax is the second acquisition by GWS during Sandvik’s ownership and is well aligned with the shift to growth strategy. Balax will strengthen our tap offering on the North American market”, says Stefan Widing, CEO and President of Sandvik.

Balax is headquartered in North Lake, USA, and has 66 employees. In 2021 the company had revenues of 10 million USD, and the impact on Sandvik’s EBITA margin and earnings per share will be limited.

Company News

3D Systems Names Michael Turner as Chief Financial Officer

4 August 2022

3D Systems announced that Michael Turner will join the company as Executive Vice President and Chief Financial Officer, effective August 29, 2022. He will report to President and CEO, Dr. Jeffrey Graves, and will lead the company’s global finance organization, including accounting and controllership, financial planning, tax, treasury, and investor relations.

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Michael brings an exemplary technical background to the CFO role that includes public accounting experience as well as financial leadership roles of increasing responsibility at both public and private companies. Currently, Michael is Chief Financial Officer of Innovative Chemical Products (ICP), a leading developer and manufacturer of specialty coatings, adhesives, and sealants serving major industrial and construction end markets. Prior to that, Michael was a finance executive at the publicly traded chemical company Albemarle Corporation, where his roles included business unit Chief Financial Officer, Vice President of Corporate FP&A, and Finance Leader for the company's global Enterprise Resource Planning (ERP) technology implementation. Michael's 20-plus-year finance career also includes financial leadership positions as divisional and corporate controller at FMC Corporation and Polypore International, respectively.

"I am delighted to have a well-rounded and seasoned financial leader such as Michael join 3D Systems," said Dr. Graves. "Michael possesses deep expertise in driving strong financial controls and governance and in implementing technology-based strategies to transform finance organizations. His background will prove invaluable as we continue to invest in our corporate infrastructure to support the attractive growth trajectory we envision both for our company and the additive manufacturing industry as a whole."

"In addition," noted Dr. Graves, "I want to express my sincere gratitude to Wayne Pensky for his service as our interim CFO. I greatly appreciate Wayne's leadership during this period of transition, as well as the support that he will provide to Michael to ensure a seamless transition in the weeks ahead."

Altair Announces Winners of 10th Annual Enlighten Award

2 August 2022

Altair, a global leader in computational science and artificial intelligence (AI), has named the winners of the 10th annual Altair Enlighten Award. Presented in association with the Center for Automotive Research (CAR), the Altair Enlighten Award honors the greatest sustainability and lightweighting advancements that successfully reduce carbon footprint, mitigate water and energy consumption, and leverage material reuse and recycling efforts.

"The caliber of nominees for this year's Enlighten Award was unparalleled and is a true testament to the investments the automotive industry is making to reach – and even exceed – global sustainability targets," said Richard Yen, senior vice president, product and strategy, Altair. "As we celebrate our tenth year and have evaluated hundreds of worthy entries over the years, we have seen this award evolve from showcasing vehicle lightweighting initiatives to companies now fully embracing sustainability and the commitment to building a net-zero environment and circular economy."

"The winners of the 2022 Enlighten Award have demonstrated the great strides the automotive industry has made in creating more sustainable products," said Carla Bailo, president and CEO, Center for Automotive Research. "Collaborating with Altair over the past ten years has allowed us to showcase on a global stage the automotive sector's most unique and proven approaches to meet weight reduction and sustainability goals."

The complete list of all winning organizations, runners-up, and honorable mentions are below.

Sustainable Product

Winner: Ford Motor Company – 2022 F-150 Lightning

- The 2022 Ford F-150 Lightning with an extended range battery delivers up to 580 horsepower and 775 lb.-ft. of torque – the most torque of any F-150 ever – as well as a high-tech front trunk and

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the ability to power your home if needed. The F-150 Lightning is powered by dual in-board motors with up to 320 miles of range on select models and is built on an all-new steel frame that supports a maximum 2,235-pound payload and up to 10,000-pounds of towing capacity.

Runner-up: Lack Enterprises – Composite Wheel Technology

- Lack Enterprises' innovative, weight-saving composite wheel technology is recognized in a joint Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) report titled "Midterm Evaluation of Light-duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy (CAFE) standards for Model Years 2022-2025." The patented wheel design allows for multiple finishes and designs on the same wheel backbone offering increased trim level differentiation, while saving costs and optimizing aerodynamics and fuel efficiency.

Sustainable Process

Winner: Nemak – Recycled Materials for Sustainable Manufacturing & Product

- Nemak's Melting Center specializes in the production of aluminum-silicon alloys for the automotive industry. Recycling 2.5 billion aluminum cans per year, Nemak contributes to a more sustainable manufacturing. With a recycling capacity of more than 400k tons per year, the process decreases the amount of energy needed to extract primary aluminum by 95%, thus eliminating 4.8 million tons of carbon dioxide per year.

Runner-up: ArcelorMittal – First Industrial Large Scale Hydrogen Direct Reduced Iron Test (H2 DRI Test)

- ArcelorMittal has launched the first large-scale green trial of hydrogen-based injection in a DRI plant. Through a \$10 billion investment plan, this milestone will propel the future large-scale supply of green steel to automotive original equipment manufacturers.

Sustainable Material

Winner: Ford Motor Company – 100% Post-Consumer Recycled (PCR) Ocean Plastic (PA6) Wiring Harness Clips

- Ford has implemented an industry-first application of 100% PCR ocean plastic into vehicle parts. The material composition of these parts is collected by workers from plastic waste in the Indian Ocean and the Arabian Sea, promoting healthier marine life, reducing landfill waste and energy use, and providing jobs.

Runner-up: Nucor Corporation – Econiq™, the World's First Net Zero Carbon Steel at Scale

- As the world's first net-zero steel produced at scale, Nucor Corporation is pioneering the reduction of a vehicle's carbon footprint without changing the design or grade selection. Econiq is available to all automotive companies today, has a very high percentage of recycled content, and is the only net-zero steel produced at scale in North America.

Enabling Technology

Winner: Shiloh Industries, General Motors – ShilohCore Acoustic Patch Laminate (APL)

- Its noise, vibration, and harshness (NVH) damping performance functions comparably to a fully laminated vehicle material, but lowers weight, carbon emissions, and costs. Patented ShilohCore NVH damping performance can be tailored to achieve required temperature ranges and target frequencies, while maintaining vehicle fuel efficiency and reducing raw material usage.

Runner-up: Bionic Mesh Design GmbH – Bionic Mesh Design

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- Bionic Mesh Design GmbH has refined and redefined lightweight design for mass casting and forging productions. These lightweight designs are achieved through the direct transformation of topology in CAD models and an emphasis on production processes. By requiring 90% less design time than standard solid modeling processes, Bionic Mesh Design helps automotive OEMs and suppliers get products to market faster.

Runner-up: Human Horizons – Integrated High Pressure Die Casting (HPDC) Rear Cabin

- Human Horizons has incorporated high pressure die casting and heat-free treatment material into the manufacturing of their rear cabin, resulting in up to 20% weight reduction. The HPDC Rear Cabin has integrated 40 parts of the rear floor into a single part, thereby cutting manufacturing and mold development time by a third.

Future of Lightweighting

Winner: McMaster University and NemaK – NemAlloy™, Novel Lightweight Automotive Aluminum Alloys

- A brand-new, high strength aluminum die casting alloy that serves the needs of automotive structural components without requiring heat treatment. Due to its lightweighting advantages and heat treatment elimination, NemaAlloy™ is a fully recyclable solution that can help companies transform the way they manufacture and forge a path to net zero emissions.

Runner-up: Adient – UltraThin Seating

- Adient has constructed ultra-thin, reinforced automotive seats made of comfortable, thermoplastic elastomers panels. UltraThin's design not only saves space and mass, but it also saves labor, time spent in assembly, and materials and part count.

Runner-up: Yanfeng – Instrument Panel and Passenger Air Bag (IP PAB) Integration

- The IP PAB integration combines the chute and airbag module housing into one part to lower costs and creates synergies in the development process. Through material substitution and weight savings by 23%, the system reduces the product's carbon footprint by 50%.

Honorable mention: AMC, csi entwicklungstechnik, DITF, BMW M – NaMiKo Biobased Automotive Center Console

- With the goal of a lightweighting and zero-footprint product, the NaMiKo-Project team combined sustainability, methodical lifecycle analysis, and lightweight design to develop an automotive center console using the "NFK in 3D" filament winding process covered with circular "smart textiles," and bio-based natural fiber composites.

Module Lightweighting

Winner: BASF Corp., Toyota, and L&L Products – Toyota Tundra Second Row Seat Structure

- By replacing more than 60 stamped and welded steel pieces with only four composite pieces in the seat assembly, the Toyota Tundra lightweights its second-row rear seat structure exponentially. These changes in production have resulted in 20% mass reductions over previous generations' steel seat structure and achieved 20% cost savings over previous generations' steel seat structure.

Runner-up: Bocar Group – Toyota Tundra Rear End Post

- The Toyota Tundra Rear End Post – Bocar Lightweight Design is the first of its kind visual class "A" exterior structural die-cast application. It achieves a more sustainable mobility by saving 4.4 kg (9.7 lbs.) in vehicle mass and 78.9 kg (173.9 lbs.) in CO2 emissions per vehicle per year.

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The Enlighten Award winners were announced in an awards ceremony at the CAR Management Briefing Seminars on August 2, 2022 at 8 a.m. ET. To attend the event, visit <https://www.cargroup.org/mbs/>. For more information about the Enlighten Award, visit <https://www.altair.com/enlighten-award/>.

Media partners for the 2022 Altair Enlighten Award include SAE, Automotive Engineering, Tech Briefs, and Automobil Industrie.

Ansys Targets a 15% Carbon Reduction by 2027

3 August 2022

Ansys plans to reduce the environmental and climate impacts of its operations by measuring, analyzing, and reducing resource use. The simulation software provider's goal is to reduce scope 1 and scope 2 emissions by 15% by 2027, compared with its current 2019 baseline. The company also extends its commitment through simulation solutions that help users minimize materials waste, improve circularity, accelerate product development processes, and minimize physical prototyping.

Ansys' environmental strategy focuses on reducing overall emissions and continuing to implement projects coming out of energy audits, including lighting enhancements and on-site renewable energy. It's part of a larger effort to simultaneously lower emissions, reduce environmental impacts, and optimize operations.

The company continues to progress its product handprint initiative—reporting how Ansys enables customers to reduce their impact on the planet. Each product handprint, or use case, illuminates Ansys' work in specific areas, including semiconductors, energy, digital twins and aerospace. Through its online documentary series—Earth Rescue—Ansys showcases the efforts of visionary customers that are innovating new solutions in the fight against climate change. New episodes of Earth Rescue will be released this fall.

“Through our environmental, social and governance (ESG) initiatives, Ansys is committed to driving positive change for our investors, customers, employees and partners,” said Janet Lee, vice president, general counsel and secretary at Ansys and head of its ESG program. “The pillars of our ESG program — advancing sustainability through products, investing in our people, operating responsibly and collaborating with stakeholders — ensure we can deliver long-term value for our business and our communities as we build a better future, together.”

Bechtle consortium introduces prototype for national education platform

2 August 2022

A Bechtle-led consortium has completed a prototype of the technical infrastructure for a national education platform. The development is part of Germany's digital education initiative, “Initiative Digitale Bildung”, by the Federal Ministry of Education and Research. The prototype, dubbed KOLIBRI, serves as a proof of concept for a simple and secure consolidation of all offerings across the country's education landscape.

KOLIBRI (a backronym for German “Kommunikation, Open Source, lebenslanges Lernen in Bildungseinrichtungen durch rechtssichere Integration”, or “communication, open source, lifelong learning in educational institutions through audit-proof integration”) has been designed to consolidate solutions by a variety of identity and platform services across Germany's education landscape and make them accessible via single-sign on. Simple self-service password and account management enables learners and educators alike to organise their digital education journey, including access to online

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courses; documents related to internships, school and university courses; and even job applications and professional education opportunities. The solution also spans applications for student loans known as BAFöG, services offered by Germany's federal employment agency, and proofs of semesters completed abroad. As it builds on an open-source foundation, the architecture is also easy to expand.

Bundled competence

“The project is so important because there's never been a comparable effort in Germany,” says Manuel Liesenfeld, head of Bechtle AG's Public Sector Division. “Now, the magnificent collaboration with our partners, Dataport, Univention and the Harz University, has produced an extensive and functional prototype.” As the consortium's lead, Germany's largest IT system house orchestrated all essential processes in developing the platform.

Germany's state-owned IT service provider, Dataport injected its know-how in the development and provision of digital, sovereign and open-source-based software solutions for public bodies and schools. Kerstin Bootsman, head of Solutions HR Management & Education at Dataport: “Digital education goes far beyond technology. Of course, a modern learning experience requires capable staff and concepts that manage to mesh our offline and online worlds. But digital education also takes technological solutions that can seamlessly connect diverse offerings and learning materials and make them accessible without a complicated authentication procedure.”

User friendliness and extensive compatibility

Nancy Buntfuß, project manager at open-source specialist Univention: “We are very pleased that, by developing the KOLIBRI prototype, we were able to demonstrate a smart, centralised and user-friendly gateway to the full breadth of education offerings is in fact possible, even in a hugely diverse, federal environment that caters to people in a great variety of circumstances. We are very excited to see where the platform is going from here.”

The Harz University of Applied Sciences has contributed the digitalisation of university processes complete with highly secure electronic identification using Germany's eID system. “This enables users to submit signed forms and documents to schools, universities and other institutions, or to digitally authenticate certificates, work experience documentation or related identities, and to share everything in a way that is tamper-proof and complies with applicable data protection legislation,” says Prof. Dr Hermann Strack of the university's Automation & Informatics department. Also, KOLIBRI connectivity does not end at Germany's national borders, as it complies with European security standards such as eIDAS or data exchange standards such as EMREX, as well.

Germany's national education platform initiative can now use the KOLIBRI meta platform, along with other sponsored projects, to prepare the next development steps and eventual operation.

FARO Appoints Rajani Ramanathan to its Board of Directors

29 July 2022

FARO®, a global leader in 4D digital reality, announced the expansion of its Board of Directors to nine members and the appointment of Rajani Ramanathan to its Board of Directors.

Ms. Ramanathan has held numerous senior executive leadership positions at Salesforce.com, concluding her nearly 14-year tenure as Salesforce's Executive Vice President and Chief Operating Officer of Technology & Products.

"Rajani's experience in building one of the pioneers of the SaaS industry at Salesforce.com, will be invaluable as FARO seeks to capitalize on the digitalization of the physical world. Our recent FARO

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Sphere launch has laid the foundation for accelerated SaaS growth, and we're pleased to have Rajani join us as we continue the transformation of FARO," commented Yuval Wasserman, Chairman of FARO's Board of Directors.

"Innovation for sustainable smart city development and solving urban challenges is an area of focus for me. I am excited to join FARO's Board and have the opportunity to work with the management team as the company increases its focus on SaaS offerings that target eliminating waste and improving process efficiencies for builders, owners and operators of the world's buildings," said Ms. Ramanathan.

Ms. Ramanathan's appointment became effective on July 25, 2022. She will be included in the slate of nominees for election to the Board of Directors at FARO's 2023 annual shareholders meeting.

Flow Science Receives the 2022 Flying 40

29 July 2022

Flow Science has been named one of New Mexico Technology's Flying 40 recipients for the last seven consecutive years. The New Mexico Technology Flying 40 awards recognize the 40 fastest growing technology companies in New Mexico each year, highlighting the positive impact the tech sector has on growing and diversifying New Mexico's economy.

Flow Science continues to deliver best-in-class CFD products and service to our customers at top engineering companies worldwide. The strength of our business model has allowed us to not simply weather the economic storm brought on by the pandemic and other world events, but to grow in both revenue and workforce. We're very proud to be recognized by New Mexico Flying 40 yet again and look forward to continuing our success and contributing to New Mexico's economic growth, said Dr. Amir Isfahani, President & CEO of Flow Science.

The Flying 40 awards are based on three revenue categories: the top revenue growth companies with revenues between \$1 million and \$10 million, the top revenue growth companies with revenues of more than \$10 million, and the top revenue-producing technology companies irrespective of revenue growth. Growth is measured over five years, from 2017-2021.

"In the midst of the worst pandemic of the past century these employers not only stayed open and provided thousands of jobs, they were able to grow their employee base. All of New Mexico should join us in celebrating these accomplishments," said Sherman McCorkle, President and CEO of the Sandia Science & Technology Park Development Corp. and host of this year's event.

Infosys opens Sydney Living Lab to accelerate innovation in NSW

1 August 2022

Infosys a global leader in next-generation digital services and consulting, has announced the opening of its Sydney Living Lab, a high-tech co-creation space for digital innovation, part of a network of over 20 established globally, including Melbourne.

The announcement was made during the Premier of New South Wales, Dominic Perrottet's visit to Infosys headquarters in Bengaluru, India. The Premier toured the expansive 81-acre Infosys Bengaluru Campus, and immersed in digital experiences in the Infosys Bengaluru Living Lab. This included the Cybersecurity Command Centre, SUPRAP, Metaverse Foundry and Digital Twin experiences.

This NSW Living Lab is a 160 sqm co-creation space in Infosys' new Sydney office, which spans 2,030 sqm over two storeys at 100 Arthur Street in North Sydney. It will bring together Infosys' digital ecosystem including clients, partners, start-ups, academia and government to inspire and nurture

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innovative digital solutions. The launch of the Sydney Living Lab closely follows that of the Melbourne Living Lab, which was unveiled in April this year.

There are over 100 digital experiences to draw from, solution accelerators and services, which include Infosys Metaverse Foundry, Cloud services via Infosys Cobalt, Cyber Security, Sustainability, Edu Tech (Digital Learning), and co-creation workshops with Infosys Consulting's product and portfolio development offerings. It will also feature WONGDOODY's human experience design expertise to elevate brand and business interactions.

“Sydney is an important digital hub in Australia, being home to many of the nation's largest enterprises, start-ups and leading universities. We believe our local Living Lab will support the state's world-class digital innovation sector through the introduction of a digital co-creation space where ideas can spark and incubate and collaboration can take place.” **Executive Vice President Infosys and Region Head, Infosys Australia and New Zealand Andrew Groth**

“Infosys' further investment into New South Wales signifies its commitment to driving innovation and collaboration in the state to help us further strengthen our digital economy and drive jobs.” **NSW Premier Dominic Perrottet**

Introducing the Kinetic Vision Innovation Center

2 August 2022

When we say we're built to solve your toughest challenges, we mean it. This month, we're moving into our new home, which combines all the resources of our current three-building campus into one state-of-the-art, 51,400 sf facility that is designed to foster innovation at unprecedented speeds.

“From the moment you walk into the Innovation Center, you'll sense that something powerful is going on. Our customers bring us complex problems in all phases of the product life cycle, and Kinetic Vision is unique in our ability to deploy collaborative, multidisciplinary development teams to tackle them. This facility will supercharge those synergies and enable us to rapidly develop both digital and physical solutions utilizing our industry-leading Digital Twin technology,” said Rick Schweet, Founder and Board Chairperson of Kinetic Vision.

Built in collaboration with the Village of Evendale, the facility is part of the AeroHub Innovation District, a new industry/education partnership for Industry 4.0 workforce development in additive manufacturing, robotics, industrial scanning, and artificial intelligence.

With ample space for both digital and physical development, Kinetic Vision's Innovation Center optimizes synergies between the company's eight areas of expertise: Industrial Design, Engineering, Simulation, Metrology, Artificial Intelligence, Software, Interactive, and Visualization. In addition, the facility will also bring new upgrades to the company's rapid prototyping capabilities, which include CNC machining, injection molding, laser cutting, advanced 3D printing, vacuum forming, blow molding, in-house PCB production, and more.

“We've invested in the tools and technologies to give our clients an edge over their competition. But what really sets us apart is our people, and this facility empowers them to do their best work,” said Jeremy Jarrett, President of Kinetic Vision.

LTI Partners with Saviynt to Deliver Intelligent Identity Solutions to Enterprises Worldwide

4 August 2022

Larsen & Toubro Infotech, a global technology consulting and digital solutions company, has partnered with Saviynt, a leading provider of enterprise cloud identity solutions. The partnership combines Saviynt Enterprise Identity Cloud with LTI's Active XDR (eXtended Detection & Response) capabilities to provide organizations with improved identity management and security threat protection during digital transformation.

Accelerated cloud adoption and the proliferation of critical applications have transformed today's business environment. As companies attempt to innovate at the speed of business and gain a competitive edge, digital advancements through cloud-first initiatives have created significant IT and security risk challenges.

Nachiket Deshpande, Chief Operating Officer, LTI, said, "LTI has partnered with Saviynt to assist our clients to manage evolving cyber risks where identity plays a crucial role. Saviynt brings proven leadership delivering next-generation identity governance and privileged access management solutions to enterprises. This partnership will augment our Active XDR offering and deliver unmatched agility, compliance, and control to our customers as they transform identity operations."

Identity plays a vital role in improving overall security posture and enabling better cyber controls for modern enterprises. LTI and Saviynt will deliver integrated solutions seamlessly across cloud and hybrid environments. The integrated solution will address new identity security challenges emerging from remote and hybrid workforces, cloud adoption, and changing regulatory compliance requirements around the globe.

Amit Saha, CEO, Saviynt, said, "At Saviynt, we're helping the world's largest companies transform their cloud security posture and deliver better cyber controls through identity access and governance. We are thrilled to be working with LTI to help customers better manage security risks at a time when the threat landscape is changing daily. Saviynt's cloud-native approach to identity, coupled with LTI's experience and XDR services, will provide organizations with an unparalleled solution to improve security posture in the cloud era".

LTI Strengthens Strategic Collaboration with Microsoft

2 August 2022

Larsen & Toubro Infotech, a global technology consulting and digital solutions company has announced the expansion of its collaboration with Microsoft to focus on developing high-value cloud solutions for enterprises. As a part of this multi-year collaboration, LTI has launched a dedicated Microsoft business unit that develops and offers end-to-end digital transformation solutions.

Through this association, LTI will also train 12,000 professionals from its existing workforce on various Microsoft technologies by 2024. The main objective of this effort is to enable skill development of LTI employees that are a part of Microsoft unit and enhance their competencies across technologies like cloud, data, IoT and security.

Nachiket Deshpande, Chief Operating Officer, LTI, said, "LTI has a long-standing relationship with Microsoft as a strategic partner, service provider, and customer. Our reaffirmed partnership with Microsoft will enable us to innovate and offer 170+ distinct services to our joint customers. Additionally, we will also focus on training and upskilling of our talent pool that is a part of the

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dedicated Microsoft business unit, to empower them to meet changing business and market requirements.”

Siddharth Bohra, Chief Business Officer & Head of Cloud Business Unit, LTI, said, “Enterprises across the globe are increasingly embracing cloud, and LTI has made impressive strides in developing a multi-dimensional capability on Azure, to meet this demand. As part of this collaboration, LTI and Microsoft will jointly innovate, develop, and sell solutions to assist enterprises in acceleration of their digital transformation journeys.”

Julie Sanford, Vice President, Partner GTM, Programs & Experiences, Microsoft, said, “Through their new Microsoft Business Unit, LTI will be able to help customers implement cloud strategies and drive business transformation across industries and geographies,” said. “We look forward to working with LTI as they build new capabilities and deliver innovative solutions on the Microsoft Cloud.”

Through this association, LTI will attain the Solution Partner designation across all the Microsoft Solution Areas. LTI also has the following advanced specializations on Azure:

- SAP on Azure: Validating the capability of implementing SAP solutions on Azure
- Analytics on Azure: Demonstrating the expertise in delivering analytics solutions in Microsoft Azure
- Windows Server and SQL Server: Expertise in migrating production workloads to Microsoft Azure
- Modernization of Web Applications: Validating expertise in migrating and deploying production web application workloads, applying DevOps, and managing app services in Microsoft Azure
- Kubernetes on Azure: validating capabilities in deploying and managing production workloads in the cloud using containers and managing hosted Kubernetes environments in Azure
- Low Code Application Development: Expertise in building solutions using Power Apps.
- The Data Warehouse Migration to Microsoft Azure: Validating expertise in analyzing existing workloads and performing ETL operations to migrate data to cloud-based data warehouses.
- Cloud Security: Validates a means for your company to showcase capabilities to implement comprehensive security solutions across Azure, hybrid, and multi-cloud environments
- Threat Protection: provides a means for your company to showcase proven, verifiable expertise in deploying Microsoft Threat Protection or Microsoft Cloud App Security workloads
- AI and Machine Learning in Microsoft Azure: Validates capabilities on enabling customer adoption of AI and implementing Azure solutions for AI-powered apps.

LTI is an Azure Expert MSP Partner which demonstrates deep knowledge, extensive experience, and proven success in implementing specialized workloads such as Migration and Modernization, SAP on Azure, Data Analytics, Internet of things (IoT), Security, and Microsoft Dynamics 365.

RISE with SAP Gains Strong Momentum Across North America

28 July 2022

SAP announced that the RISE with SAP solution continued its strong rate of adoption across businesses in North America, as organizations of all sizes selected SAP in the second quarter of 2022 to help drive their cloud transformations.

Hundreds of companies selected RISE with SAP in the first half of the year, with public cloud gaining

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traction as the deployment of choice with many customers.

- **Pitney Bowes Inc.**, a global shipping and mailing company that provides technology, logistics and financial services to more than 90% of Fortune 500 organizations, selected RISE with SAP to transform and modernize its EMEA business By transitioning to SAP S/4HANA Cloud, SAP’s public cloud offering, and leveraging SAP Business Technology Platform, Pitney Bowes expects benefits such as business process simplification, standardization, increased agility and an ability to meet its future growth ambitions.
- In Q2, **EisnerAmper LLP**, one of the largest accounting, tax and business advisory firms in the United States, selected RISE with SAP. Infosys Ltd. is implementing the flexible and scalable SAP S/4HANA Cloud suite, SAP’s public cloud offering, to help EisnerAmper meet its growth ambitions over the coming years.
- **Moderna Inc.** is delivering on the promise of mRNA as the key to a new class of vaccines and innovative therapies. The Spikevax vaccine has been a breakthrough and is helping the world to overcome the COVID-19 pandemic. Moderna has ambitious growth targets based on its rapidly expanding pipeline of 40-plus mRNA-based vaccines and therapies. That’s why Moderna has selected RISE with SAP to get the cloud flexibility and scale to support its growth. The new agreement includes an upgrade of its current ERP system while leveraging SAP Business Technology Platform for customer-specific applications. RISE with SAP will provide Moderna scalable and automated end-to-end processes across research and development, sourcing, distribution, regulatory control and finance – helping Moderna enhance its global leadership position as an mRNA focused innovator.
- **GlobalFoundries Inc.**, one of the world’s leading semiconductor manufacturers, selected SAP in a competitive win over the incumbent. RISE with SAP will be playing a critical role in GlobalFoundries’ path forward, as it continues to modernize, standardize and transform its business. By using solutions such as SAP S/4HANA and SAP Ariba, SAP Concur and SAP Signavio solutions, among others, GlobalFoundries expects SAP software to deliver significant value across the entirety of its organization.

Others that selected RISE with SAP include **American Equity Investment Life Insurance Company**, **STEMCELL Technologies Inc.**, and **Align Technology Inc.**, the maker of Invisalign clear aligners. Additional organizations that chose SAP in the second quarter include **Analog Devices Inc.**, **Tennant Company** and **Microsoft. PGA Tour, M&T Bank Corp., The PNC Financial Services Group Inc.** and **The New York City Department of Education** selected Experience Management solutions from SAP and Qualtrics. SAP Signavio solutions gained traction as well.

Corning Incorporated, one of the world’s leading innovators in materials science and a customer of SAP S/4HANA, last quarter selected the full SAP Signavio portfolio. The portfolio will play a crucial role in driving collaborative process management excellence and governance supporting Corning’s company-wide business ERP transformation initiatives. Expected benefits include increased transparency for harmonizing and optimizing processes.

“SAP North America continued to experience double-digit cloud revenue growth, a stable support business and strong bookings performance driven by a good balance of existing and new customers this quarter,” said John DiPlacido, Chief Financial Officer, SAP North America. “We also saw SAP S/4HANA, our business process transformation portfolio, SAP SuccessFactors Human Experience Management Suite and SAP Concur solutions continue to play a significant role in our customer’s transformation efforts.”

Schneider Electric Makes Steady Progress Toward 2025 Sustainability Targets

28 July 2022

Schneider Electric, the leader in the digital transformation of energy management and automation, announced the results of its sustainable impact program for the second quarter of 2022.

Schneider's Sustainability Impact (SSI) scored 4.17 out of ten, relative to its 4.70 year-end target. The SSI dashboard measures Schneider's Environmental, Social and Governance (ESG) performance. It details the progress made on each of the company's global and local sustainability goals relative to long-term commitments on climate, resources, trust, equal opportunities, generations, and local communities.

The publication of Schneider's latest SSI scores coincides with Earth Overshoot Day, the date at which more of the Earth's resources have been consumed than can be replenished. As Earth Overshoot Day in 2022 has occurred one day earlier than last year, it serves as a stark reminder of the need to urgently address humanity's adverse impact on the planet.

"Our planet is burning, literally. We have to face the reality in front of us and keep accelerating our sustainability efforts," said Gwenaëlle Avice-Huet, Schneider Electricity's Chief Strategy and Sustainability Officer. "As an Impact company, we are convinced that we can help each other with technology, collaboration, and trust. Advancing on our Sustainability Impact program is not about ESG compliance. It's about embarking and working with our entire ecosystem of employees, clients, suppliers, and partners to progress together."

Second quarter 2022 sustainability highlights

- Schneider Electric's EcoStruxure™ solutions helped customers and suppliers make significant decarbonization progress and reduce their CO2 emissions by 381 million tonnes since 2018. In June, Schneider Electric and Hitachi Energy agreed to collaborate on green electricity solutions for renewables, data centers, mining and other sectors of industry.
- Schneider Electric just expanded its biodiversity pledge to use only deforestation-free wood across its supply chain and operations by 2030.
- Schneider Electric provided +1.1 million people with access to green electricity in Q2 2022, bringing it to +6.4 million since January 2021.
- In 2022, 82% of Schneider employees feel confident to report an unethical conduct. A good progress since last year (+1pt) in its commitment to provide a trusted environment and Speak Up culture.
- Schneider Electric launched its Sustainability School to educate employees on climate and social issues and encourage them to take action and deliver impact in every aspect of their lives.
- Schneider Electric's teams in countries and regions continue to play a specific role in ensuring the maximum impact of their locally-led sustainability initiatives, including projects in France, USA, China and India.

Detailed results and highlights of the SSI program are presented in the Q2 2022 report, which includes the attached graphic.

Because of its robust sustainability programs with concrete and measurable progress, Schneider Electric continues to link its financing instruments to the Group sustainability trajectory. During the first half of the year, the Group set up a €2,7 Billion euros bank facilities with a pricing indexed on the annual performance of the Schneider Sustainability Impact (SSI).

TCS Becomes AWS Security Competency Partner

1 August 2022

Tata Consultancy Services (TCS) announced that it has achieved the Compliance and Privacy distinction in Amazon Web Services (AWS)' newly launched Security Competency. This designation recognizes that TCS has demonstrated and successfully met AWS' technical and quality requirements for providing customers with a deep level of consulting services expertise in Compliance and Privacy to help them achieve their cloud security goals.

Achieving the Compliance and Privacy distinction in the AWS Security Competency differentiates TCS as an AWS Partner that provides specialized consulting services designed to help the largest global enterprises adopt, develop and deploy security into their AWS environments increasing their overall security posture on AWS. To receive the designation, partners must possess deep AWS expertise and deliver solutions seamlessly on AWS.

“TCS is proud to become an early AWS Security Competency Partner to achieve the Compliance and Privacy distinction,” said Krishna Mohan, Global Head, AWS Business Unit, TCS. “TCS helps customers achieve their security goals using our deep contextual and industry knowledge, consulting expertise, automation skills and our AWS security capabilities. Our capabilities in implementing compliance as code, augmenting AWS environment with automated internal audits, and leveraging our posture management solutions enable customers to stay compliant with regulatory controls and data privacy norms dictated by their geography.”

TCS empowers enterprises to lead with confidence by securing their entire digital estate. As the threat surface expands and cyber-attacks become more sophisticated, TCS partners with enterprises to quantify their risks and strengthen their security posture by embedding security at design, implementing a zero trust framework, and providing them 360-degree visibility and predictive intelligence to proactively defend against and respond to evolving risks, with its Cyber Defense Suite.

TCS offers a comprehensive portfolio of cybersecurity services including consulting and advisory, security-as-a-service, industry-nuanced solutions, and managed security services across areas including cloud security, detection and response, identity and access management, vulnerability management, governance, risk and compliance, data privacy and protection, digital forensics and incident response, data security, and IT/OT security services.

TCS equips enterprises to automate manual security tasks and elevate the cloud security posture to help them gain visibility and control of the digital landscape, providing measures to address emerging cybersecurity threats. It enables enterprises to avoid regulatory penalties by automating compliance checks, and identifying pockets of security automation across clouds, helping detect advanced cyber-attacks in real-time.

TCS' global network of 12 Threat Management Centers provide localized expert security services rapidly to help clients meet their unique business and regulatory requirements.

TCS' AWS Business Unit is a full-stack, multidisciplinary group that offers enterprise customers end-to-end services and solutions around cloud migration, application and data modernization, managed services, and industry-specific innovation leveraging AWS. TCS' large pool of AWS cloud-ready professionals leverage their domain knowledge and AWS technology building blocks to create transformational solutions contextualized to specific industry sub-verticals. TCS is an AWS Premier Consulting Partner, AWS Managed Service Provider, AWS Public Sector Partner, AWS Solution Provider Partner and AWS Public Sector Solution Provider. It holds 9 AWS Competencies and 9 AWS Service Validations.

Event News

Blackline Safety to Present at the 42nd Annual Canaccord Growth Conference

3 August 2022

Blackline Safety Corp., a global leader in connected safety technology, announced its upcoming participation in the 42nd Annual Canaccord Genuity Growth Conference being held August 8-11, 2022, in Boston, Massachusetts.

The Company is scheduled to present on Wednesday, August 10, 2022, at 4:00pm Eastern Time and will be hosting one-on-one meetings with investors. The presentation will be broadcast live and available for replay [here](#) and via the investor relations section of the Company's website at investors.blacklinesafety.com.

To receive additional information, request an invitation or to schedule a one-on-one meeting, please contact Blackline Safety's investor relations team at BLN@GatewayIR.com.

Contract Lifecycle Management Leader Agiloft Aims Digital Transformation Lens On The Automotive Industry

2 August 2022

Agiloft announced it's heading to Traverse City, Michigan with a challenge to the automotive industry; "Look for your next significant increase in profitability – in your filing cabinets, emails, and shared file sites – where it's likely to be buried in your contracts." Agiloft is attending the 2022 Center for Automotive Research (CAR)'s flagship Management Briefing Seminar (MBS), CARMBS, to outline how CLM technologies are white hot in today's market, given how they not only automate the contract process, but also unleash contract data critical to powering business results, managing risk, and optimizing profits.

"The automotive industry is one of the most contract heavy. And yet, while innovation has transformed vehicles themselves, many old-line business processes in this enormous industry have failed to transform digitally as quickly as other industries and the time is now to better face market headwinds," said Agiloft Regional Sales Vice President Andy Drake. "In high-volume manufacturing, pennies matter. Don't be left behind by other top manufactures who are turning to Agiloft and CLM, and the contract nimbleness we provide to help save millions."

Heading into the show, Drake highlights four key trends making digital transformation existential for automakers to not only survive, but thrive, scale, and prosper in challenging market headwinds:

1. "Companies using CLM have a Competitive Advantage Over Those that Don't:"

According to World Commerce & Contracting, companies, who manage their contracts effectively using CLM, save an average of 9.2% a year in annual revenue that is typically lost to slow negotiations, missed milestones, and non-compliance. For larger organizations, that percentage can be much higher (15%). Companies who fail to embrace proven technology that plugs revenue leaks and enables cost savings will fall behind.

2. "CLM Revenue Savings Offset a Slowing World Economy:"

Global forces like the pandemic, war, supply chain disruption, inflation, and rising fuel costs are expected to decelerate global growth from 5.5% to 4.1% in 2022, according to the World Bank. The automotive industry can ensure its survival, mitigate risk, and compete at scale by using a unified

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solution to manage contract sustainability, consistency, completeness, searchability, ownership, and risk management, in one place. Thriving businesses will then share that data across the relevant teams and departments within their organization to drive business-critical decisions. Contract metadata, including part numbers, retention times, effective expiration dates, per region and per category, all need to be managed from one centralized CLM platform, so businesses can effectively manage their business relationships and realize the savings effective contract management offers.

3. ‘The World can Shift on a Tweet – CLM Provides that Nimbleness;’

Pandemics and wars can swing world economies instantly. Getting out of a country and finding other vendors instantly is a reality and companies need to have instant visibility to understand and manage their risks and obligations. In a single tweet, markets can change, unrest can happen, longstanding terms that could impact your precious margin can change. Nimbleness and agility have taken on a new dimension. In 2022, businesses need to be able to shift in an instant.

4. Unlocking Data Trapped in Contracts is a Strategic Competitive Advantage:’

Data that’s trapped in contracts and stored in files, holds unbelievable value for organizations. Having a line of sight to risk and business obligations lets every department make better, more nimble business decisions that help companies grow, survive, and negotiate from an informed position, sending resources in new directions and holding back in others. Without a CLM to unlock that data, and more importantly, to be able to share that data with other solutions in its network ecosystem, it’s difficult to put that information into action. CLM systems that can integrate not only seamlessly, but widely, with today’s common enterprise solutions and let data sluice easily into other technologies are the most powerful. Sure, integration speed is important—but that’s table stakes. Today’s most powerful CLM systems need to connect into business systems that are driving key business process, and easily let data flow throughout the organization where it can truly help the business grow, enhance performance, respond with agility, and out maneuver the competition. Contract data drives the business, why isn’t it integrated?

Mark Ross, Principal and Co-leader of Legal Business Services, Deloitte Tax LLP, states: “Innovation in business processes is as critical to the success of automakers as innovation in the cars themselves. Worldwide, our conversations with key industry players are focused on digital transformation to drive profitability, and the benefits of CLM make it a critical technology investment to ensure their contracts work harder for them and improve profitability.”

PROS Announces Investment Conference Schedule for August 2022

1 August 2022

PROS Holdings, Inc., a market-leading provider of SaaS solutions optimizing shopping and selling experiences, announced that company management will participate in the following investment conferences in August 2022.

[KeyBanc Technology Leadership Forum | Vail, CO](#)

Andres Reiner, President and CEO, and Belinda Overdeput, Director, Investor Relations
Monday, August 8, 2022|Fireside Chat at 1:00 - 1:25 PM EDT

[Oppenheimer Annual Technology, Internet & Communications Conference | Virtual Format](#)

Stefan Schulz, CFO, and Belinda Overdeput, Director, Investor Relations
Wednesday, August 10, 2022|Fireside Chat at 2:05-2:45PM EDT

A live webcast and archive of the events will be available at <http://pros.com>.

Financial News

Altair Announces Second Quarter 2022 Financial Results

4 August 2022

Altair, a global leader in computational science and artificial intelligence (AI) that provides software and cloud solutions in simulation, high-performance computing (HPC), data analytics and AI, released its financial results for the second quarter ended June 30, 2022.

“Altair had a strong second quarter, driven by high double-digit software revenue growth, with all our key metrics coming in above our guidance ranges,” said James Scapa, founder, chairman and chief executive officer of Altair. “While we are in a period of geopolitical and economic uncertainty, I am confident Altair’s culture, customer relationships, high recurring revenue and utilization, high-value business model, and exceptional technology leaves us well-positioned for the remainder of the year.”

“The second quarter was another big success, achieving revenue and profit ahead of expectations,” said Matt Brown, chief financial officer of Altair. “Led by our year-over-year software product revenue growth of over 17% in the second quarter, we continued to deliver on our commitment to software product revenue growth and margin expansion. While we are encouraged by our strong first half of 2022, we are reducing our full year guidance ranges for revenue and profit due to the impact foreign exchange rates are having on our results in reported currency.”

Second Quarter 2022 Financial Highlights

- Software product revenue was \$116.9 million compared to \$99.6 million for the second quarter of 2021, an increase of 17.4%
- Total revenue was \$132.7 million compared to \$119.9 million for the second quarter of 2021, an increase of 10.6%
- Net loss was \$(33.8) million compared to \$(13.6) million for the second quarter of 2021. Diluted net loss per share was \$(0.43) based on 78.9 million diluted weighted average common shares outstanding, compared to diluted net loss per share of \$(0.18) for the second quarter of 2021, based on 75.3 million diluted weighted average common shares outstanding. Net loss margin was (25.5%) compared to (11.4%) for the second quarter of 2021
- Non-GAAP net income was \$10.9 million, compared to non-GAAP net income of \$5.6 million for the second quarter of 2021, an increase of 94.7%. Non-GAAP diluted net income per share was \$0.13 based on 86.3 million non-GAAP diluted common shares outstanding, compared to non-GAAP diluted net income per share of \$0.07 for the second quarter of 2021, based on 80.3 million non-GAAP diluted common shares outstanding
- Adjusted EBITDA was \$16.4 million compared to \$9.5 million for the second quarter of 2021, an increase of 73.1%. Adjusted EBITDA margin was 12.4% compared to 7.9% for the second quarter of 2021
- Cash provided by operating activities was 12.3 million, compared to 18.2 million for the second quarter of 2021
- Free cash flow was \$11.0 million, compared to \$15.8 million for the second quarter of 2021.

Business Outlook

Based on information available as of today, Altair is issuing the following guidance for the third quarter and full year 2022:

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<i>(in millions)</i>	Third Quarter 2022		Full Year 2022
<i>Software Product Revenue</i>	\$ 99.0	to \$ 104.0	\$ 487.0
<i>Total Revenue</i>	\$ 115.0	\$ 120.0	\$ 555.0
<i>Net Loss</i>	\$ (34.9)	\$ (31.0)	\$ (66.1)
<i>Non-GAAP Net Income</i>	\$ (1.2)	\$ 1.8	\$ 60.6
<i>Adjusted EBITDA</i>	\$ 0.0	\$ 4.0	\$ 89.0
<i>Net Cash Provided by Operating Activities</i>			\$ 15.1
<i>Free Cash Flow</i>			\$ 8.0

Conference Call Information

What: Altair's Second Quarter 2022 Financial Results Conference Call

When: Thursday, August 4, 2022

Webcast: <http://investor.altair.com> (live & replay)

American Software to Announce First Quarter Fiscal Year 2023 Preliminary Financial Results

1 August 2022

American Software, Inc., a leading provider of innovative AI-powered supply chain management and advanced retail planning solutions, announced that it will release its First Quarter Fiscal Year 2023 preliminary financial results after the U.S. financial markets close on Wednesday, August 24, 2022.

In conjunction with the release, the company will host a conference call at 5:00 pm ET to discuss its results with the investment community. A live webcast and replay of the call will be accessible via the investor relations page of American Software's website at www.amssoftware.com/investor-relations.

American Software's First Quarter Fiscal Year 2023 Preliminary Financial Results Earnings Call

Date: Wednesday, August 24, 2022

Time: 5:00 pm ET

Location: www.amssoftware.com/investor-relations

Ansys Announces Financial Results With Record Q2 ACV and Revenue

3 August 2022

ANSYS, Inc. reported second quarter 2022 GAAP and non-GAAP revenue growth of 6% and 5% in reported currency, respectively, or 13% and 12% in constant currency, respectively, when compared to the second quarter of 2021. For the second quarter of 2022, the Company reported diluted earnings per share of \$1.13 and \$1.77 on a GAAP and non-GAAP basis, respectively, compared to \$1.06 and \$1.85 on a GAAP and non-GAAP basis, respectively, for the second quarter of 2021. Additionally, the Company reported second quarter 2022 ACV growth of 7% in reported currency, or 13% in constant currency, when compared to the second quarter of 2021.

"Ansys delivered another excellent quarter, once again exceeding our financial guidance across all key metrics. We delivered double-digit ACV and revenue growth in constant currency in both the second quarter and for the first half of 2022. Our strong performance year-to-date was broad-based across geographies and industries, highlighting how our diversified multiphysics product portfolio is crucial to

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customers' key research and development initiatives. I am excited about the future and look forward to discussing our continued momentum, long-term strategy and outlook at our investor update next week," said Ajei Gopal, Ansys president and CEO.

Nicole Anasenes, Ansys CFO, stated, "Our outstanding performance was highlighted by 13% ACV growth in constant currency for the second quarter. This consistent and robust performance of double-digit topline growth is a testament to the strength and resilience of our core business and the value we deliver to our customers. Looking toward the second half of 2022, we are raising our full-year guidance on ACV and revenue in constant currency. Given the continued strong demand for simulation, coupled with the momentum across our business, I am more confident than ever in our future."

/ Financial Results

Ansys' second quarter and year-to-date (YTD) 2022 and 2021 financial results are presented below. The 2022 and 2021 non-GAAP results exclude the income statement effects of the acquisition accounting adjustments to deferred revenue from business combinations closed prior to 2022, stock-based compensation, excess payroll taxes related to stock-based compensation, amortization of acquired intangible assets, expenses related to business combinations and adjustments for the income tax effect of the excluded items.

GAAP and non-GAAP results are as follows:

<i>(in millions, except per share data and percentages)</i>	GAAP			Non-GAAP			
	Q2 QTD 2022	Q2 QTD 2021	% Change	Q2 QTD 2022	Q2 QTD 2021	% Change	
Revenue	\$473.9	\$446.7	6 %	\$475.9	\$452.6	5 %	
Net income	\$98.8	\$93.7	5 %	\$154.6	\$162.6	(5) %	
Diluted earnings per share	\$1.13	\$1.06	7 %	\$1.77	\$1.85	(4) %	
Operating profit margin	27.0 %	26.1 %		40.7 %	41.7 %		

<i>(in millions, except per share data and percentages)</i>	GAAP			Non-GAAP			
	Q2 YTD 2022	Q2 YTD 2021	% Change	Q2 YTD 2022	Q2 YTD 2021	% Change	
Revenue	\$898.9	\$809.9	11 %	\$904.5	\$824.7	10 %	
Net income	\$169.8	\$166.1	2 %	\$273.8	\$261.5	5 %	
Diluted earnings per share	\$1.94	\$1.89	3 %	\$3.13	\$2.97	5 %	
Operating profit margin	23.3 %	20.6 %		37.8 %	38.0 %		

The non-GAAP financial results highlighted above, and the non-GAAP financial outlook for 2022 discussed below, represent non-GAAP financial measures. Reconciliations of these measures to the appropriate GAAP measures, for the three and six months ended June 30, 2022 and 2021, and for the 2022 financial outlook, can be found later in this release.

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/ Other Performance Metrics

<i>(in millions, except percentages)</i>	Q2 QTD 2022	Q2 QTD 2021	% Change	% Change in Constant Currency
ACV	\$460.3	\$430.5	7	% 13
Operating cash flows	\$118.9	\$118.9	—	%

<i>(in millions, except percentages)</i>	Q2 YTD 2022	Q2 YTD 2021	% Change	% Change in Constant Currency
ACV	\$804.4	\$749.9	7	% 12
Operating cash flows	\$329.9	\$290.0	14	%

ACV is a metric the Company uses to better understand the business. There is no GAAP measure comparable to ACV. ACV is composed of the following:

- the annualized value of maintenance and subscription lease contracts with start dates or anniversary dates during the period, plus
- the value of perpetual license contracts with start dates during the period, plus
- the annualized value of fixed-term services contracts with start dates or anniversary dates during the period, plus
- the value of work performed during the period on fixed-deliverable services contracts.

/ Management's 2022 Financial Outlook

The Company's third quarter and updated FY 2022 revenue, diluted earnings per share and ACV guidance is provided below. The Company is also updating its FY 2022 guidance for operating cash flows. The revenue and diluted earnings per share guidance is provided on both a GAAP and non-GAAP basis. Non-GAAP financial measures exclude the income statement effects of acquisition adjustments to deferred revenue, stock-based compensation, excess payroll taxes related to stock-based compensation, amortization of acquired intangible assets, acquisition-related expenses and adjustments for the income tax effect of the excluded items.

This guidance is based on the Company's evaluation of factual information it has determined to be relevant and the application of certain assumptions made by the Company. Please refer to the Company's prepared remarks document for additional information regarding the Company's financial guidance, including its assumptions regarding overall business dynamics.

/ Third Quarter 2022 Guidance

The Company currently expects the following for the quarter ending September 30, 2022:

<i>(in millions, except percentages and per share data)</i>	GAAP	Non-GAAP
Revenue	\$453.8 - \$473.8	\$455.0 - \$475.0
Revenue Growth Rate	2.9 % - 7.4 %	2.1 % - 6.6 %
Revenue Growth Rate — Constant Currency	8.9 % - 13.5 %	8.1 % - 12.6 %
Diluted earnings per share	\$0.86 - \$1.05	\$1.56 - \$1.70

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The difference between the GAAP and non-GAAP revenue guidance presented above is a result of the expected impact of the application of the fair value provisions applicable to the accounting for business combinations closed prior to 2022 in the amount of \$1.2 million for the quarter ending September 30, 2022.

<i>(in millions, except percentages)</i>	Other Financial Metrics
ACV	\$392.0 - \$412.0
<i>ACV Growth Rate</i>	7.3 % - 12.7 %
<i>ACV Growth Rate — Constant Currency</i>	13.0 % - 18.5 %

/ Fiscal Year 2022 Guidance

The Company currently expects the following for the fiscal year ending December 31, 2022:

<i>(in millions, except percentages and per share data)</i>	GAAP	Non-GAAP
Revenue	\$1,997.7 - \$2,047.7	\$2,005.0 - \$2,055.0
<i>Revenue Growth Rate</i>	4.8 % - 7.4 %	3.8 % - 6.4 %
<i>Revenue Growth Rate — Constant Currency</i>	10.2 % - 12.8 %	9.2 % - 11.8 %
Diluted earnings per share	\$4.91 - \$5.39	\$7.50 - \$7.88

The difference between the GAAP and non-GAAP revenue guidance presented above is a result of the expected impact of the application of the fair value provisions applicable to the accounting for business combinations closed prior to 2022 in the amount of \$7.3 million for the fiscal year ending December 31, 2022.

<i>(in millions, except percentages)</i>	Other Financial Metrics
ACV	\$1,997.7 - \$2,047.7
<i>ACV Growth Rate</i>	5.0 % - 10.0 %
<i>ACV Growth Rate — Constant Currency</i>	11.0 % - 16.0 %
Operating cash flows	\$500.0 - \$550.0

Our diluted FY 2022 EPS guidance is inclusive of \$22.0M in interest expense (\$18.0 million, net of tax). This compares to interest expense in FY 2021 of \$12.4 million (\$10.0 million, net of tax) with the significant increase in FY 2022 driven by the recent rising interest rate environment and our floating interest rate on our term loans.

Despite an ongoing volatile macroeconomic environment, the updated FY 2022 guidance reflects an operational raise on ACV, revenue, diluted EPS and operating cash flows driven by the underlying strength of our business model and market position. Offsetting this outlook, persistent and meaningful U.S. Dollar strengthening in exchange rates continues to drive unprecedented headwinds. As a result, the guidance assumes additional incremental adverse impacts from currency, primarily driven by substantial weakening in the Euro and Japanese Yen.

As we mentioned in the previous quarter, the currency impacts are solely the result of externally driven

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events. The underlying foundation of our business remains strong, and we continue to see momentum. The chart below captures the drivers of the update to our last guidance provided in early May:

<i>(in millions, except per share data)</i>	Mid-point of Guidance in May	Incremental Operational Performance	August mid-point of Guidance at May Exchange Rates	Currency Fluctuations from May to August Guidance	A
ACV	\$ 1,990	\$ 29	\$ 2,019	\$ (19)	\$
Revenue	\$ 2,035	\$ 18	\$ 2,053	\$ (23)	\$
Diluted earnings per share	\$ 7.74	\$ 0.07	\$ 7.81	\$ (0.12)	\$
Operating cash flows	\$ 590	\$ 6	\$ 596	\$ (6)	\$

Additionally, when compared to the 2021 currency rates, our full-year 2022 guidance is negatively impacted on ACV by approximately \$100 million and on operating cash flow by approximately \$35 million.

/ Conference Call Information

Ansys will hold a conference call at **8:30 a.m. Eastern Time** on August 4, 2022 to discuss second quarter results. The Company will provide its prepared remarks on the Company's investor relations homepage and as an exhibit in its Form 8-K in advance of the call to provide stockholders and analysts with additional time and detail for analyzing its results in preparation for the conference call. The prepared remarks will not be read on the call, and only brief remarks will be made prior to the Q&A session.

To participate in the live conference call, dial 855-239-2942 (US) or 412-542-4124 (Canada & Int'l). The call will be recorded and a replay will be available within two hours after the call. The replay will be available by dialing (877) 344-7529 (US), (855) 669-9658 (Canada) or (412) 317-0088 (Int'l) and entering the passcode 3042539. The archived webcast can be accessed, along with other financial information, on Ansys' website at <https://investors.ansys.com/events-and-presentations/events-calendar>.

Autodesk Extends Invitation to Join Financial Results Conference Call

1 August 2022

[Autodesk](#), Inc. announced it will broadcast its second quarter fiscal 2023 financial results conference call via its website Wednesday, August 24, 2022, at 2:00 p.m. Pacific Time. Autodesk will host a live webcast call Wednesday, August 24, 2022, at 2:00 p.m. PT at www.autodesk.com/investors. An audio replay webcast will also be available after 5:00 p.m. PT on Autodesk's website at www.autodesk.com/investors.

For more information, please call Autodesk Investor Relations at 415-507-6373.

CENIT WITH A STRONG HALF-YEAR RESULT: GROUP REVENUES INCREASE BY 6.2% COMPARED TO PREVIOUS YEAR TO EUR 73,912 K, EBIT INCREASES BY 19.5%

2 August 2022

Continued strong consulting and service business (vs previous year: +18.9%) as well as increased license sales in Q2 determine the sales growth (vs previous year: +EUR 4,280 k/+6.2%) in the first

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half of 2022. The consulting and service business, which was already growing strongly in the first quarter (vs previous year: +13.9%) continued to do so extremely in the second quarter (vs previous year: +23.5%) and was also boosted by a significant increase in the sale of third-party software licenses (vs previous year: +33.4%) and a general increase in proprietary software business (vs previous year: +6.0%).

After six months, CENIT Group has generated sales revenues of EUR 73,912 k (previous year: EUR 69,632 k/+6.2%). Sales revenues in the CENIT consulting and services segment increased by 18.9% to EUR 22,231 k (previous year: EUR 18,698 k). Sales of third-party software increased by 0.9% to EUR 43,654 k (previous year: EUR 43,257 k). Sales of CENIT's own software also increased from EUR 7,665 k to EUR 7,985 k (+4.2%). Due to the long-running proceedings regarding antitrust issues, the recently acquired ISR is included for only one month in the first half of the year.

Gross profit (operating performance less cost of materials) amounted to EUR 40,124 k (previous year: EUR 37,331 k) and thus increased by 7.5%. CENIT achieved EBITDA of EUR 3,378 k (previous year: EUR 3,520 k/-4.0%) and EBIT of EUR 1,119 k (previous year: EUR 936 k/+19.5%). Earnings per share amounted to Cent 4.6 (previous year: Cent 4.8). This result could be realized despite the fact that approx. EUR 1.3 million in (expense-reducing) short-time allowances were no longer paid in H1-2021, which illustrates the strength of CENIT's business model. Compared to the second quarter of 2021, consolidated sales in the second quarter of 2022 increased by 8.7% to EUR 38,514 k (previous year: EUR 35,419 k), but EBITDA decreased by -1.3% to EUR 2,654 k (previous year: EUR 2,688 k) due to increased costs and EBIT amounted to EUR 1,507 k after EUR 1,460 k in the previous year (+3.3%).

Asset and Financial Situation

As of the balance sheet date, equity amounted to EUR 37,576 k (Dec. 31, 2021: EUR 43,645 k). The equity ratio amounted to 31.9% (Dec. 31, 2021: 47.0%). Bank balances and cash and cash equivalents amounted to EUR 22,888 k as of the balance sheet date (Dec. 31, 2021: EUR 26,361 k). The operating cash flow reached EUR 9,280 k (previous year: EUR 9,714 k).

Employees

As of June 30, 2022, the number of employees in the Group was 858 (previous year: 695). Personnel expenses amounted to EUR 31,163 k in the CENIT Group in the reporting period (previous year: EUR 29,767 k).

Outlook

We confirm our updated forecast for the CENIT Group for the current fiscal year 2022, according to which we expect consolidated sales of around EUR 170.0 million and consolidated earnings (EBIT) of around EUR 9.0 million despite the delayed consolidation of ISR. This forecast is subject to the express proviso that the global economic and industry-specific conditions do not deteriorate significantly in the current fiscal year 2022, particularly with regard to the growing inflation and economic risks in the context of the war in Ukraine and the continuing effects of the COVID 19 pandemic.

Please visit CENIT's homepage for the entire half-year financial report 2022: www.cenit.com/reports.

DXC Technology Reports First Quarter Fiscal Year 2023 Results

3 August 2022

DXC Technology reported results for the first quarter of fiscal year 2023.

Mike Salvino, DXC Chairman, President and Chief Executive Officer commented: "Our transformation journey is creating value and we are confident that we are taking the right steps for DXC in the short term that will set us up for success in the long term. I am pleased with the quality of company DXC has

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become with our stable debt, sound capital allocation strategy, focus on free cash flow generation, investment grade credit profile, improved governance, and our consistent growth in GBS. Our focus now is to accelerate our cost optimization to drive out \$500 million in cost by year end, setting the company up for long term success.”

Financial Highlights - First Quarter of Fiscal Year 2023

Revenue was \$3.71 billion for the first quarter of fiscal year 2023, down 10.5% as compared to prior year period, and down 2.6% on an organic basis. First quarter revenues came in towards the bottom end of our previous guidance range, while organic revenue growth was slightly below the bottom end of our guidance range.

Net income was \$103 million, or 2.8% of sales for the first quarter of fiscal year 2023, compared to \$282 million, or 6.8% of sales, in the prior year quarter. EBIT was \$139 million or 3.7% of sales. Net income and EBIT in the quarter included the following items: amortization of acquired intangible assets of \$104 million, restructuring costs of \$33 million, gain on disposition of \$29 million, a merger related indemnification charge of \$10 million, and transaction, separation, and integration costs of \$2 million. Excluding these items, Adjusted EBIT margin was 7.0% in the first quarter, a reduction of 100 bps as compared to the prior year quarter.

Diluted earnings per share was \$0.43 and Non-GAAP diluted earnings per share was \$0.75 for the first quarter of fiscal year 2023. GAAP and Non-GAAP earnings per share were adversely impacted by investments and higher costs, a slower than anticipated ramp of our cost optimization efforts, unfavorable currency fluctuations, and higher than expected tax expense, partially offset by lower interest expense and share count.

On a trailing twelve months basis, the company delivered a book to bill of 1.06x.

During the first quarter of fiscal year 2023, the Company repurchased 8.9 million shares of common stock for a total of \$266 million.

Financial Information by Segment

GBS segment revenue was \$1,758 million in the first quarter of fiscal year 2023, down 6.8% compared to the prior year period and up 2.8% on an organic basis. The GBS performance was driven by strong growth in the Analytics & Engineering business, where revenue increased 15.7% on an organic basis. GBS segment profit was \$210 million and segment profit margin was 11.9%, down 250 bps compared to prior year, due to investments and higher costs and the costs related to the exit of our business in Russia. GBS bookings for the quarter were \$1.7 billion for a book-to-bill of 0.98x, and 1.17x on a trailing twelve months basis.

GIS segment revenue was \$1,949 million in the first quarter of fiscal year 2023, down 13.5% compared to the prior year period, and down 7.2% on an organic basis. GIS segment organic revenue performance improved slightly, due to a lower level of declines in Security and Modern Workplace revenues, which declined by 0.3% and 16.1% on an organic basis, respectively. GIS segment profit was \$127 million with a segment profit margin of 6.5%, a 70 bps margin expansion as compared to first quarter of fiscal year 2022. GIS bookings were \$1.5 billion in the quarter for a book-to-bill of 0.77x, and 0.96x on a trailing twelve months basis.

Cash Flow

Cash flow from (used in) operations was \$163 million in the first quarter of fiscal year 2023, as compared to \$(29) million in the first quarter of fiscal year 2022, and capital expenditures were \$175 million in the first quarter of fiscal year 2023, as compared to \$275 million in the first quarter of fiscal

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year 2022. Free cash flow (cash flow from operations, less capital expenditures) was \$(12) million in the first quarter of fiscal year 2023, as compared to \$(304) million in the first quarter of fiscal year 2022.

Guidance

The Company reaffirmed its longer-term guidance:

- Positive organic revenue growth of 1% to 3% for fiscal year 2024
- Adjusted EBIT margin of 10% to 11% in fiscal year 2024
- Non-GAAP diluted Earnings Per Share of \$5.00 to \$5.25 in fiscal year 2024
- Free cash flow of approximately \$1.5 billion in fiscal year 2024
- Restructuring and TSI of approximately \$100 million in fiscal year 2024

DXC does not provide a reconciliation of Non-GAAP measures that it discusses as part of its guidance because certain significant information required for such reconciliation is not available without unreasonable efforts or at all, including, most notably, the impact of significant non-recurring items. Without this information, DXC does not believe that a reconciliation would be meaningful.

Ken Sharp, Chief Financial Officer, commented: "In Q1 FY23, we continued to drive down uses of cash, including restructuring, transaction, separation and integration expenses, capital expenditures, capital lease originations, and our facility footprint. These initiatives allowed us to deliver a \$292 million improvement in free cash flow over the first quarter of FY22. We continued to execute on our capital deployment program, returning \$266 million to shareholders by repurchasing 8.9 million shares during the quarter to complete \$500 million of our \$1 billion repurchase commitment."

Earnings Conference Call and Webcast

DXC Technology senior management will host a conference call and webcast to discuss these results on August 3, 2022, at 5:00 p.m. EDT. The dial-in number for domestic callers is +1 (888) 330-2455. Callers who reside outside of the United States should dial +1 (240) 789-2717. The passcode for all participants is 4164760. The webcast audio and any presentation slides will be available on DXC Technology's [Investor Relations website](#).

A replay of the conference call will be available from approximately two hours after the conclusion of the call until August 10, 2022. The phone number for the replay is +1 (800) 770-2030 or +1 (647) 362-9199. The replay passcode is 4164760.

FARO Announces Second Quarter Financial Results

3 August 2022

FARO® Technologies, Inc., a global leader in 4D digital reality solutions, announced its financial results for the second quarter ended June 30, 2022.

"Improving demand for our products, including the recently launched Focus Premium laser scanner and Quantum Max scan arm generated revenue of \$79.9 million or \$83.9 million on a constant currency basis, adjusting for the significant strengthening of the US dollar in the second quarter," stated Michael Burger, President and Chief Executive Officer. "We believe the building momentum for our updated product line-up demonstrates the progress we've made in aligning our hardware and software roadmaps to add value to our customer's workflows, resulting in differentiated offerings in our target markets."

Second Quarter 2022 Financial Summary

- Total sales of \$79.9 million, down 3% compared to the prior year period

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- Total sales on a Non-GAAP constant currency basis of \$83.9 million, up 3% compared to the prior year period
- Software sales, of \$10.5 million or 13% of revenue, up from 12% in the prior year period
- Recurring revenue of \$17.1 million or 21% of revenue (actual currency basis), grew 8% compared to the prior year period
- Gross margin of 50.6%, compared to 55.4% in the prior year period
- Non-GAAP gross margin of 51.0%, compared to 55.7% in the prior year period
- Operating expenses of \$49.4 million, compared to \$46.1 million in the prior year period
- Non-GAAP operating expenses of \$43.2 million, compared to \$41.8 million in the prior year period
- Net loss of \$8.6 million, or (\$0.47) per share compared to \$1.2 million, or (\$0.06) per share in the prior year period
- Non-GAAP net loss of \$0.6 million, or (\$0.03) per share compared to net profit of \$2.2 million, or \$0.12 per share in the prior year period
- Adjusted EBITDA of \$0.5 million, or 0.6% of total sales compared to \$6.5 million, or 7.9% of total sales in the prior year period
- Cash and short-term investments of \$102.0 million, compared to \$107.2 million as of March 31, 2022

* A reconciliation of the non-GAAP financial measures to the most directly comparable GAAP financial measures is provided in the financial schedules portion at the end of this press release. An additional explanation of these measures is included below under the heading "Non-GAAP Financial Measures".

Outlook for the Third Quarter 2022

For the third quarter ending September 30, 2022, FARO currently expects:

- Revenue in the range of \$79 to \$87 million
- Non-GAAP (loss) earnings per share in the range of (\$0.08) to \$0.08

Conference Call

The Company will host a conference call to discuss these results on Wednesday, August 3, 2022 at 5:00 p.m. ET. Interested parties can access the conference call by dialing (800) 245-3047 (U.S.) or +1 (203) 518-9765 (International) and using the passcode FARO. A live webcast will be available in the Investor Relations section of FARO's website at: <https://www.faro.com/en/About-Us/Investor-Relations/Financial-Events-and-Presentations>

A replay webcast will be available in the Investor Relations section of the company's web site approximately two hours after the conclusion of the call and will remain available for approximately 30 calendar days.

Materialise Reports Second Quarter 2022 Results

28 July 2022

Materialise NV, a leading provider of additive manufacturing and medical software and of sophisticated 3D printing services, announced its financial results for the second quarter ended June 30, 2022.

Highlights – Second Quarter 2022

CIMdata PLM Industry Summary

- Total revenue increased 14.5% to 58,070 kEUR compared to 50,713 kEUR for the second quarter of 2021.
- Total deferred revenue from annual software sales and maintenance fees increased by 3,758 kEUR to 38,903 kEUR compared to December 31, 2021.
- Adjusted EBITDA was 4,240 kEUR, compared to 6,925 kEUR for the 2021 period.
- Net profit for the second quarter of 2022 was 896 kEUR, or 0.02 EUR per diluted share, compared to 3,367 kEUR, or 0.06 EUR per diluted share, for the 2021 period.

Executive Chairman Peter Leys commented, “Demand for the products and solutions of each of our three segments remained strong in these uncertain macro-economic times. Materialise’s revenue increased by almost 15% compared to the same period last year and our deferred revenue from annual software sales and maintenance fees increased by more than 10% compared to December 31, 2021. Encouraged by our solid top-line results, we are continuing to execute on our plan of investing in our growth businesses. As a result of inflation and, in particular, our increased labor costs, our Adjusted EBITDA for the quarter was 4,240 kEUR compared to 6,925 kEUR for the second quarter of 2021.”

Second Quarter 2022 Results

Total revenue for the second quarter of 2022 increased 14.5% to 58,070 kEUR from 50,713 kEUR for the second quarter of 2021. Adjusted EBITDA amounted to 4,240 kEUR for the second quarter of 2022 compared to 6,925 kEUR for the 2021 period. The Adjusted EBITDA margin (Adjusted EBITDA divided by total revenue) for the second quarter of 2022 was 7.3%, compared to 13.7% for the second quarter of 2021.

Revenue from our Materialise Software segment increased 6.1% to 10,642 kEUR for the second quarter of 2022 from 10,032 kEUR for the same quarter last year. Segment EBITDA decreased, including the effect of ongoing investments in Link3D, to 821 kEUR from 3,129 kEUR while the segment EBITDA margin was 7.7% compared to 31.2% for the prior-year period.

Revenue from our Materialise Medical segment increased 18.9% to 20,855 kEUR for the second quarter of 2022 compared to 17,544 kEUR for the same period in 2021. Segment EBITDA amounted to 4,474 kEUR for the second quarter of 2022 compared to 4,519 kEUR while the segment EBITDA margin was 21.5% compared to 25.8% for the second quarter of 2021.

Revenue from our Materialise Manufacturing segment increased 14.2% to 26,574 kEUR for the second quarter of 2022 from 23,268 kEUR for the second quarter of 2021. Segment EBITDA amounted to 1,581 kEUR compared to 1,850 kEUR for the same period last year, while the segment EBITDA margin was 5.9% compared to 8.0% for the second quarter of 2021.

Gross profit was 32,030 kEUR compared to 28,441 kEUR for the same period last year, while gross profit as a percentage of revenue decreased to 55.2% compared to 56.1% for the second quarter of 2021.

Research and development (“R&D”), sales and marketing (“S&M”) and general and administrative (“G&A”) expenses increased, in the aggregate, 25.1% to 33,613 kEUR for the second quarter of 2022 from 26,863 kEUR for the second quarter of 2021.

Net other operating income was 498 kEUR compared to 843 kEUR for the second quarter of 2021.

Operating result amounted to (1,084) kEUR compared to 2,421 kEUR for the second quarter of 2021.

Net financial result was 2,580 kEUR compared to 1,153 kEUR for the second quarter of 2021.

The second quarter of 2022 contained income tax expenses of (600) kEUR, compared to (207) kEUR in the second quarter of 2021.

CIMdata PLM Industry Summary

As a result of the above, net profit for the second quarter of 2022 was 896 kEUR, compared to 3,367 kEUR for the same period in 2021. Total comprehensive income for the second quarter of 2022, which includes exchange differences on translation of foreign operations, was 771 kEUR compared to 4,344 kEUR for the 2021 period.

At June 30, 2022, we had cash and cash equivalents of 168,133 kEUR compared to 196,028 kEUR at December 31, 2021. Gross debt amounted to 90,474 kEUR, compared to 99,107 kEUR at December 31, 2021. As a result, our net cash position (cash and cash equivalents less gross debt) was 77,659 kEUR, a decrease of 19,262 kEUR, and included the effect of our call option exercise to acquire 100% of the shares of Link3D.

Cash flow from operating activities for the second quarter of the year 2022 was 8,636 kEUR compared to 8,871 kEUR for the same period in 2021. Total capital expenditures for the second quarter of 2022 amounted to 6,548 kEUR.

Net shareholders' equity at June 30, 2022 was 234,921 kEUR compared to 232,577 kEUR at December 31, 2021.

2022 Guidance

Mr. Leys concluded, "The consecutive revenue growth posted by each of our segments in the first and second quarters of this year strengthens our confidence that our full year 2022 revenues will be at least 10% higher than in 2021. While inflation and effects of the war for talent, which are higher and more persistent than anticipated in the beginning of this year, weigh on our results, we continue to invest in our growth businesses. As a result, we currently expect that our consolidated EBITDA for the full year 2022 will be in the range of 20 mEUR to 25 mEUR."

Conference Call and Webcast

Materialise will hold a conference call and simultaneous webcast to discuss its financial results for the second quarter of 2022 on Thursday, July 28, 2022, at 8:30 a.m. ET/2:30 p.m. CET. Company participants on the call will include Wilfried Vancraen, Founder and Chief Executive Officer; Peter Leys, Executive Chairman; and Johan Albrecht, Chief Financial Officer. A question-and-answer session will follow management's remarks.

To access the conference call by phone, please click the link below at least 15 minutes prior to the scheduled start time and you will be provided with dial-in details. Participants can choose to dial in or to receive a call to connect to Materialise's conference call.

<https://register.vevent.com/register/BI03ce199a940d4a37b9b57caf54c5d59f> The conference call will also be broadcast live over the Internet with an accompanying slide presentation, which can be accessed on the company's website at <https://investors.materialise.com>. A webcast of the conference call will be archived on the company's website for one year.

Stratasys Releases Second Quarter 2022 Financial Results

3 August 2022

Stratasys Ltd., a leader in polymer 3D printing solutions, announced financial results for the second quarter of 2022.

Summary - Second Quarter 2022 Financial Results Compared to Second Quarter 2021:

- Revenue of \$166.6 million, compared to \$147.0 million.
- GAAP gross margin of 40.5%, compared to 43.0%.

CIMdata PLM Industry Summary

- Non-GAAP gross margin of 47.6%, compared to 47.5%.
- GAAP operating loss of \$23.5 million, compared to a GAAP operating loss of \$22.7 million.
- Non-GAAP operating income of \$1.9 million, compared to non-GAAP operating loss of \$2.6 million.
- GAAP net loss of \$24.4 million, or (\$0.37) per diluted share, compared to net loss of \$20.2 million, or (\$0.31) per diluted share.
- Non-GAAP net income of \$1.2 million, or \$0.02 per diluted share, compared to non-GAAP net loss of \$1.6 million, or (\$0.02) per diluted share.
- Adjusted EBITDA of \$7.4 million, compared to \$3.5 million.
- \$22.8 million of cash used by, compared to \$5.6 million of cash generated from, operating activities, reflecting a continued augmentation of inventories.

“Our continued focus on execution delivered strong growth in revenue, margin, and earnings per share,” commented Dr. Yoav Zeif, Stratasys’ Chief Executive Officer. “Systems was again the main driver of robust performance, growing 29.2% from the prior year period and 9.7% over the same period in 2019. Our new Origin P3 and H350 SAF mass production manufacturing systems continue to ramp, with excellent customer engagement across all of our new technology offerings.”

Dr. Zeif continued, “We are advancing our leadership position by executing on our strategic initiatives and steadily expanding our reach into Fortune 500 manufacturing facilities worldwide. We continue to provide best-in-class, full-scale 3D printing solutions through our innovative and growing ecosystem of polymer additive manufacturing systems, expanding variety of materials, end-to-end software and top quality service. With our robust balance sheet and leading go-to-market strategy, we are well-positioned to navigate challenging supply issues and global inflation in our efforts to create long-term value for all of our shareholders.”

Financial Outlook:

Based on current market conditions and assuming that the impact of the COVID-19 pandemic, global supply chain costs, currency risk and inflation do not impede economic activity further, the Company is updating its outlook for 2022 as follows:

- Full year revenue of \$675 million to \$685 million, as compared to a previous range of \$685 million to \$695 million. The reduction is primarily due to unexpected and adverse currency exchange rates which are expected to impact third and fourth quarter results relatively equally.
- Revenue growth in the second half of the year approximately 6%-7% higher than the second half of 2021, with fourth quarter anticipated to grow at a higher rate than third quarter.
- Based on current logistics and materials costs, third quarter gross margins relatively flat compared to third quarter of 2021, and full-year gross margins of flat to slightly higher than 2021.
- Full year-operating expenses that are \$18 million to \$23 million higher than 2021, primarily due to ongoing investments in new products to drive higher revenue.
- Full year non-GAAP operating margins slightly above 2%.
- GAAP net loss of \$78 million to \$69 million, or (\$1.17) to (\$1.04) per diluted share.
- Non-GAAP net income of \$10 million to \$13 million, or \$0.14 to \$0.19 per diluted share.
- Adjusted EBITDA of \$38 million to \$41 million.

CIMdata PLM Industry Summary

- Capital expenditures of \$20 million to \$25.

Non-GAAP earnings guidance excludes \$37 million to \$38 million of projected amortization of intangible assets, \$33 million to \$35 million of share-based compensation expense, and reorganization and other expenses of \$14 million to \$16 million. Non-GAAP guidance includes tax adjustments of \$2 million to \$1 million on the above non-GAAP items.

Appropriate reconciliations between GAAP and non-GAAP financial measures are provided in a table at the end of our press release and slide presentation, with itemized detail concerning the non-GAAP financial measures.

Stratasys Ltd. Second Quarter 2022 Webcast and Conference Call Details:

The Company plans to webcast its conference call to discuss its second quarter 2022 financial results on Wednesday, August 3, 2022, at 8:30 a.m. (ET).

The investor conference call will be available via live webcast on the Stratasys website at investors.stratasys.com, or directly at the following web address:

<https://event.choruscall.com/mediaframe/webcast.html?webcastid=mUfZ38Qo>

To participate by telephone, the U.S. toll-free number is 877-407-0619 and the international dial-in is +1-412-902-1012. Investors are advised to dial into the call at least ten minutes prior to the call to register. The webcast will be available for six months at investors.stratasys.com, or by accessing the above-provided web address.

Synopsys Announces Earnings Release Date for Third Quarter Fiscal Year 2022

3 August 2022

Synopsys, Inc. announced it will report results for the third quarter fiscal year 2022 on Wednesday, August 17, 2022, after the market close. A conference call to review the results will begin at 2:00 p.m. PT (5:00 p.m. ET) and will be hosted by Aart de Geus, chairman and chief executive officer, and Trac Pham, chief financial officer.

Financial and other statistical information to be discussed on this conference call will be available on the corporate website at www.synopsys.com immediately before the call. A live webcast will also be available on this site. Participants should access the live webcast at least 10 minutes prior to the start of the call. A webcast replay can be accessed on the corporate website beginning Wednesday, August 17, 2022, at approximately 5:00 p.m. PT. The replay will be available until Synopsys announces its fourth quarter and fiscal year 2022 results in November 2022. In addition, a dial-up replay of the conference call will be available beginning August 17, 2022, at 5:00 p.m. PT, ending on August 24, 2022, at midnight. The replay telephone number is USA +1-866-207-1041, and International +1-402-970-0847, access code 6337628.

TRIMBLE ANNOUNCES SECOND QUARTER 2022 RESULTS

5 August 2022

Trimble Inc. announced financial results for the second quarter of 2022.

Second Quarter 2022 Financial Highlights

- Revenue of \$941.2 million, up 6 percent excluding the effects of divestitures, acquisitions, and foreign currency translation
- Annualized recurring revenue (ARR) was \$1.51 billion, up 12 percent year over year

CIMdata PLM Industry Summary

- GAAP operating income was \$134.9 million and non-GAAP operating income was \$210.7 million
- GAAP net income was \$168.0 million and non-GAAP net income was \$161.6 million
- Diluted earnings per share was \$0.67 on a GAAP basis and \$0.64 on a non-GAAP basis
- Adjusted EBITDA of \$227.5 million, 24.2 percent of revenue
- Share repurchases of \$200.0 million

Executive Quote

"Our second quarter results exceeded expectations," said Rob Painter, Trimble's president and chief executive officer. "Growth in annualized recurring revenue and gross margin demonstrate the potential of our Connect & Scale strategy. We remain committed to investing in our strategy while navigating macroeconomic uncertainties."

Forward Looking Guidance

For the full-year 2022, Trimble now expects to report revenue between \$3,760 million and \$3,820 million and GAAP earnings per share of \$1.89 to \$1.99, and non-GAAP earnings per share between \$2.70 and \$2.80. GAAP guidance assumes a tax rate of 23 percent and non-GAAP guidance assumes a tax rate of 18.5 percent. Both GAAP and non-GAAP earnings per share assume approximately 251 million shares outstanding. A reconciliation of the non-GAAP measures to the most directly comparable GAAP measures and other information relating to these non-GAAP measures are included in the supplemental reconciliation scheduled attached.

Investor Conference Call / Webcast Details

Trimble will hold a conference call on August 5, 2022 at 5:00 a.m. PT to review its second quarter 2022 results. An accompanying slide presentation will be made available on the "Investors" section of the Trimble website, www.trimble.com, under the subheading "Events & Presentations." The call will be broadcast live on the web at <https://investor.trimble.com>. Investors without internet access may dial into the call at (888) 660-6347 (U.S.) or (929) 201-6594 (international). The conference ID is 1043223. The replay will also be available on the web at the address above.

Implementation Investments

Accenture Helps Swisscom Advance Its Environmental Ambitions with Sustainability Roadmap

3 August 2022

Accenture collaborated with Swisscom on a climate strategy to reduce the telecommunications company's emissions and help its customers reduce their emissions by one million tons of carbon by 2025 — equal to 2% of Switzerland's total carbon emissions.

Swisscom expects to achieve climate neutrality faster than planned with new sustainability goals for its corporate decision-making and product development processes. Accenture helped Swisscom integrate an emerging interpretation of an emissions type, known as Scope 4, that the company can integrate into its strategy to enable its customers to avoid or reduce emissions.

"We strive every day to be more ambitious with our sustainability commitments and generate more impact for our company, our people, our customers and the environment," said Res Witschi, head of sustainable digitization, Swisscom. "With Accenture's industry knowledge and decarbonization insights,

CIMdata PLM Industry Summary

we raised our climate target and continue to be a sustainability leader in the telco space.”

Accenture also helped Swisscom explore strategies for incorporating technologies within the emerging Scope 4 classification that can help further reduce carbon emissions from customers. These considerations include technology such as AI-driven analytics, cloud, and 5G and IoT to address faster and higher capacity data transmission, with remote management and control of connected devices.

By addressing Scope 4 emissions, Swisscom is simultaneously addressing environmental concerns and its bottom line. In fact, research from Accenture found that companies with a higher sustainability performance — across environmental, social and governance (ESG) indicators — have been shown to also perform better financially.

“Technology is a critical driver for improving sustainability, helping to accelerate transitions to net zero, build sustainable organizations, embrace responsible value chains, and provide sustainable choices for customers,” said Stephan Schneider, managing director, Accenture. “Swisscom is positively impacting the planet by combining technology solutions to enable a reduction across their emissions while also driving business value. The company can boost their business by offering customers a larger number of green products and services to choose from to reduce their emissions.”

For more information about how the communications industry can embrace and become effective stewards of sustainability, visit the Accenture report “Communications Service Providers’ Critical Role in the Race to Net Zero.”

Blackline Safety Secures Three Energy Industry Deals for Lifetime Value of Over \$10 Million

2 August 2022

Blackline Safety Corp., a global leader in connected safety technology, announced the close of three deals with leading North American energy companies. They have a combined value of over \$10 million based on their five-year lifetime product and services value.

The largest deal—with a lifetime value of almost \$7 million - saw a Texas-based oil and gas company purchase G7x wearables, supported by G7 Bridge portable satellite base stations, for connected gas detection and lone worker protection. This is a new customer for Blackline Safety, validating the increased market penetration of its products and services.

The other two deals represent new business with current energy customers, each with a five-year lifetime value of approximately \$2 million. The first involves the purchase of G7x satellite connected wearables with G7 Bridge base stations and the second includes a combination of G7c cellular wearables and G7x wearables with satellite bridge—all support both connected gas detection and lone worker protection.

The 1,200+ purchased devices across the three companies will include 24/7 live monitoring by Blackline Safety’s Safety Operations Centre (SOC). Blackline’s SOC is the only in-house safety monitoring service operated by a connected vendor—providing round-the-clock safety for tens of thousands of workers.

“These deals demonstrate the positive impact of the ongoing rebound in the North American energy industry delivering strong growth across this sector for Blackline. Customers in this market see the enduring value of our all-in-one solution to meet the diverse safety needs of workers in an industry increasingly moving toward connected solutions to transform their operations,” said Sean Stinson, Chief Growth Officer, Blackline Safety.

CIMdata PLM Industry Summary

“No other competitive solution offers this combined level of connectivity, gas detection, and live monitoring, which is especially relevant to protect workers in the oil and gas industry who can work in remote areas where connectivity is low. These attributes are what enhance the stickiness of our solution and key to the reason we deliver a 100%+ customer retention rate.”

Blackline’s G7 lone worker and personal gas detection devices are robust and intelligent connected wearables that accurately detect gas hazards, instantly notifying both workers and managers in real time and enabling corrective action to be taken to mitigate future incidents. Supported by Blackline’s professional 24/7 live monitoring service, they ensure maximum worker protection with automated safety incident and health event monitoring, including features such as no-motion and fall detection, and missed check-ins.

Capgemini selected by U.S. Army to lead modernization of global cloud environment

2 August 2022

Capgemini Government Solutions LLC, an independent Capgemini subsidiary working with U.S. Government Agencies, has announced the agreement of a three-year contract with the U.S. Army to modernize, transform, and grow cARMY, the Army’s Cloud Common Shared Services environment. Capgemini will support and enable the Enterprise Cloud Management Agency (ECMA) to help make data-driven decisions and decrease time-to-field in support of the Army’s mission.

This engagement will also help promote cARMY’s organization-wide adoption of cloud technologies and bolster artificial intelligence and machine learning programs that thrive on data to deliver mission-readiness in new digital and physical environments.

Capgemini was chosen for its deep expertise in helping large, complex organizations adopt a digital-first strategy. It will provide advanced solutions that leverage the latest in cloud technology to establish a secure, streamlined cloud adoption initiative and help drive a culture shift for the Army in terms of how data is used and stored.

“It isn’t enough to simply apply the science of delivering cloud common services and succeed at the scale of the Army. There is an art to providing enterprise IT services that people love to use in addition to meeting the mission’s need,” said Paul Puckett, Director at Enterprise Cloud Management Agency (ECMA), US Army. *“We are excited to partner with Capgemini Government Solutions to demonstrate the positive global mission impact that cARMY brings by applying the perfect blend of art and science to cloud common services.”*

Capgemini will become the Army’s enterprise cloud common shared services provider, and as part of this work, will expand, operate, and continuously improve upon on cARMY cloud common shared services to reduce complexity, increase security, and eliminate duplication of effort.

“Capgemini is proud to support the Army in this important modernization initiative, which will enable cloud adoption across the entire enterprise,” said Doug Lane, CEO, Capgemini Government Solutions LLC. *“The cARMY project allows the Army to empower teams to make better data-driven decisions. We are honored to support it in partnership with the ECMA.”*

CIMdata PLM Industry Summary

Matterport Partners with Burns & McDonnell to Help Energy, Utilities, and Manufacturing Industries Save Time and Money with Digital Twins

3 August 2022

Matterport, Inc., the leading spatial data company driving the digital transformation of the built world, announced a partnership with Burns & McDonnell, an engineering, construction and architecture firm providing services for critical infrastructure companies. Through the partnership, Burns & McDonnell customers can use the Matterport Digital Twin Platform, including software services and hardware, to optimize construction expansion and maintenance projects. The collaboration equips businesses in the energy, utilities, and manufacturing industries with a continuous digital, visual documentation solution that improves operations, enhances collaboration, and increases safety in each project stage.

“From a project’s design to construction phase, Matterport digital twins unlock unparalleled efficiencies across our customer projects,” said Teddy Menke, Product Manager of Burns & McDonnell. “With access to Matterport’s hardware to capture digital twins and spatial data, our entire customer ecosystem can optimize the documentation process, collaborate more efficiently, and improve worksite safety across all project stages. Recently, Burns & McDonnell won the UTC IMPACT award for our innovative approach, where we showcased how we successfully leveraged the Matterport platform to execute a multi-year, multi-state effort to replace a telecom network for Southern Company, a leading US-based energy company.”

The partnership with Burns & McDonnell enables our joint customers to seamlessly access and manage 3D digital twins of their facilities, complete with 4K imagery and accurate measurements to help develop construction plans. Using digital twins helps clients eliminate the time spent manually measuring a facility, reduces the time it takes to document existing facilities, and helps avoid facility interruptions so design work continues while a facility operates. With Matterport, Burns & McDonnell provides digital twin management and solutions that have helped its customer base, including Central Lincoln People’s Utility District (CLPUD), an electric utility company based in Oregon that services roughly 55,000 customers. Since leveraging the Matterport platform starting in 2018, CLPUD has seen success in decreasing costly employee travel, increasing collaboration across teams while eliminating the need for over 250 expensive repeat site visits to 45 different facilities, allowing them to complete their projects under budget and on time.

During each project phase, Burns & McDonnell customers can update and share digital twins in real time, enabling more efficient reviews and project approvals across contractors, installers, and the end customer. Customers can also use digital twins to digitally inspect potentially hazardous locations, such as manholes, rather than having to physically enter those spaces. Additionally, Burns & McDonnell will assist customers with the capture of digital twins in restricted critical infrastructure facilities that require safety and security clearance. Aside from Central Lincoln People’s Utility District, other customers reported the Matterport platform has shortened project schedules by an average of 30 percent and for one customer, eliminated travel to facilities by nearly 80 percent.

“Across the Architecture, Engineering, and Construction industry, Matterport’s reliable, visually rich 3D data continues to help large, enterprise customers work more efficiently and drive down costs,” said Stephanie Lin, Sr. Director of Strategy for the Architecture, Engineering, and Construction industry at Matterport. “With access to Matterport digital twins, customers can collaborate remotely, in real time, on large, complex projects with many moving pieces and stakeholders. We’re thrilled to collaborate with Burns & McDonnell to expand the ease plus adoption of digital twins for their entire client ecosystem.”

McMaster University cracks genome sequencing to fight COVID-19 and other infectious diseases with Hewlett Packard Enterprise

27 July 2022

Hewlett Packard Enterprise announced that McMaster University's McArthur Lab developed one of the fastest and most accurate software packages for determining COVID-19 variants, using the HPE Superdome Flex server to quickly ingest and process raw genomic data, unlock insights and help the world get ahead of virus mutations. The HPE solution was used effectively during the COVID-19 pandemic to help monitor variants and support researchers investigating COVID-19 infections by significantly reducing the time to collect and analyze data to sequence positive COVID-19 cases from typically nine to 10 hours to under an hour.

With researchers working to sequence raw genomic data, the team at McArthur Lab partnered with virologists at Ontario's Sunnybrook Health Sciences Center to determine which viruses infect patients, and how pathogens evolve into new variants and spread between people. By working together at the start of the COVID-19 pandemic, these two teams were the first in Canada to isolate the SARS-CoV-2 virus in January 2020 to study it. The information was shared with public health agencies and pharmaceutical companies to help develop vaccines and drugs.

"Like all other infectious disease labs, we looked at what was happening in Wuhan, China. And in the first two weeks after scientists there sequenced the genome of SARS-CoV-2, we redesigned our entire pipeline and built a platform to prepare for capturing the virus's genes," says Andrew McArthur, Ph.D., Professor in Biochemistry and Biomedical Sciences at McMaster University and member of the M.G. DeGroot Institute for Infectious Disease Research (IIDR) and Canada's Global Nexus of Pandemics and Biological Threats. "You've got to have one-thousand-fold redundancy to figure out what's infecting one patient when you're doing genome assembly. So when you've got one hundred patients at a time, you're rapidly approaching terabytes of information to compile, and you want it done in under an hour because the clinicians are calling to find out. The HPE solution reduced the time to collect and analyze data to sequence positive COVID-19 cases and accelerate decision-making."

In addition to the HPE Superdome Flex server, which provides the world's most scalable and modular in-memory computing capabilities, McArthur Lab invested in other HPE solutions to store, compute and analyze a large volume of data. These solutions include:

- HPE Nimble Storage HF20C to store vast amounts of raw genomic data coming in from sequencing teams.
- HPE Apollo 6500 systems that are ideal for deep learning to develop AI algorithms to predict antibiotic failure based on bacterial genome sequence and to deploy machine learning to find new drugs.

"In genomics, technology plays a key role in DNA research to help predict, diagnose and treat diseases by providing researchers with high-performing computing to process large quantities of data at scale," said Justin Hotard, executive vice president and general manager, HPC & AI, at HPE. "The impactful research that McMaster Lab contributed to the public is a tremendous example of how they used the computing capability of the HPE Superdome Flex to analyze massive data sets in real-time and provide timely answers to critical questions about COVID-19."

Long-term HPE authorized partners Arrow ESC Canada Ltd. and Compugen Inc. were instrumental in scoping and building the solution.

CIMdata PLM Industry Summary

Medico Sports Fashion GmbH Partners with Centric Software for Centralized, Cross-Border Collaboration

2 August 2022

German functional sportswear brand, Medico Sports Fashion GmbH (MEDICO), has selected Centric Software®'s Product Lifecycle Management (PLM). Centric Software provides the most innovative enterprise solutions to plan, design, develop, source and sell products such as apparel, footwear, sporting goods, furniture, home décor, cosmetics, food & beverage and luxury to achieve strategic and operational digital transformation goals.

MEDICO is part of the family-owned JCK group, and has stood for functional sportswear for over 100 years. The company became known internationally in the 1960s following its invention of a turtleneck ski jumper called the “ski-rolli”. Following numerous subsequent innovations, MEDICO is renowned worldwide as a leading product developer in the sport and outdoor segment.

Over the last 10 years, MEDICO has been awarded the license rights for FILA footwear, apparel and accessories across Continental Europe. The business now manages the collection development and production control of their joint venture suppliers in Bangladesh, as well as sales and building up the FILA distribution network in Europe. MEDICO has also recently been awarded the textile license for TAMARIS apparel and accessories. The new partnership begins with the spring/summer 2023 season.

Due to their association with FILA, a major international brand which has seen a huge comeback in recent years, in addition to developing TAMARIS and their own proprietary label, MEDICO soon found themselves drowning in offline, manual processes, such as Excel spreadsheets, PowerPoint presentations, design documents, contracts, emails and more. The company had to significantly ramp up their design and production processes to keep up with demand.

“We saw the need for greater product development and production standardization to shorten our lead time and meet market requirements. We wanted more reliable product information with fewer errors, and a way to eliminate our manual and decentralized ways of working,” says Medico.

In order to manage their processes more effectively, MEDICO made the decision to leave offline documents behind and enter the world of PLM. Their evaluation process was highly pragmatic and they reached out to Centric Software to find out how Centric's out-of-the-box, cloud-integrated PLM solution could help to improve their workflows.

The benefits of adopting Centric PLM™ were immediately apparent, such as its intuitive and easy-to-use interface, and enabling teams to collaborate between the company HQ in Germany, the footwear division in the Netherlands and the offices in Far East and Turkey.

“We evaluated a few PLM solutions, but we chose Centric for its robustness, intuitiveness and flexible user interface. With Centric PLM we will be able to manage all our products including textiles and accessories as well as shoes on one centralized platform. We expect to see optimization of our time and resources, cutting down steps in our internal and external processes.”

MEDICO is now looking forward to the future with Centric and the ever-increasing ease and efficiency of having all product data combined in one easy to use solution.

“With Centric PLM, we have equipped MEDICO for the future and can efficiently develop FILA, Tamaris and future brands to come.”

“Centric Software is thrilled to partner with such a well-regarded German sportswear brand. We look forward to working with MEDICO to achieve their digital transformation goals and keep pace with the high demand for its products,” comments Chris Groves, President and CEO of Centric Software.

NASA-backed Program Selects Ansys Simulation Technology to Help Validate Pioneering Research on Aviation Sustainability

1 August 2022

Ansys will support research led by the University of Central Florida (UCF) and funded by a \$10 million NASA University Leadership Initiative five-year grant to accelerate aviation sustainability. The project aims to develop zero-carbon jet engines using liquid ammonia (NH₃) as an alternate, more sustainable fuel for aircraft. Ansys' simulation solutions will be used as a key enabler of the project to both validate the use of ammonia and achieve the outcome within the desired timeline.

By integrating Ansys' chemical kinetics and computational fluid dynamics (CFD) simulation tools, Ansys Chemkin-Pro and Ansys® Fluent®, researchers will simulate complex, chemical reaction systems surrounding ammonia, including the vaporization of liquid ammonia inside heat exchange tubes, heat transfer, and the combustion of ammonia and hydrogen in the air. The goal is to use ammonia as a main hydrogen carrier by inducing chemical catalysis to leverage ammonia's hydrogen components while only releasing safe emissions into the air.

"We want to create a scalable solution for cleaner aviation and with Ansys' cooperation we will get there faster," said Jay Kapat, the lead investigator of the project and an engineering professor at UCF. He is an expert in his field and leads the Center for Advanced Turbomachinery and Energy Research at UCF. "We would not be able to authenticate the use of liquid ammonia as a reliable and alternate fuel without the sophistication and capability of Ansys' fluids simulation tools."

In addition to the sustainability of ammonia, it is naturally liquid at high altitudes, easier to handle than hydrogen, and does not require additional storage. In contrast, hydrogen requires special handling at high altitudes, thermal management, and ample on-board cryogenic storage.

"Simulation is reshaping a cleaner future in many industries, and today we applaud its continued impact on aviation with this exciting new project made possible by UCF and NASA. Simulation enables companies to save resources, energy and emissions before products are ever built; and build more energy-efficient products and processes that have far-reaching sustainability impacts," said Prith Banerjee, chief technology officer at Ansys and executive sponsor of Ansys' Academic and Sustainability Programs. "Through simulation, Ansys provides the predictive certainty to realize our customers' vision for a sustainable future and model interactions that we otherwise could not analyze, such as chemical reactions. We look forward to playing a role in developing groundbreaking sustainable aviation fuel options."

Polish manufacturer Stelmet selects HPE cloud-native storage to underpin its dynamic growth

3 August 2022

Hewlett Packard Enterprise announced that Stelmet Group, a leading producer of wooden garden architecture in Europe headquartered in Poland, has selected HPE Alletra cloud-native data infrastructure to host all its production and administrative data in a simplified, easy-to-manage and future-proof environment. The new data services solution enables Stelmet to scale as the company continues to grow and innovate, while delivering intelligent and AI-driven data storage, processing, and protection.

Stelmet manufactures and distributes various wooden products designed for fencing, furnishing, and decorating gardens and all kinds of recreational spaces. The company also produces pellet fuel, using the

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sawdust and woodchips which are generated in the process of wood treatment. Stelmet has been in business for 25 years and sells 2,600 designs of products in over 25 countries. With the capacity to deliver large-scale orders, with broad geographical range, and short completion deadlines, Stelmet has become the leading distributor for the largest retailers of wooden garden architecture in Europe. To maintain its leadership position, drive further growth, and seamlessly introduce new products to its portfolio, Stelmet required a new data infrastructure system that harnesses maximum data efficiency and empowers growth without data roadblocks.

“As a dynamic business, we must invest in technology that serves our needs today, tomorrow and in several years’ time”, said Rafał Ciepliński, IT Director at Stelmet. “With a heavy production schedule and a large distribution network, we produce a vast amount of data each day and therefore need smart and scalable data infrastructure, that can speedily and effectively store, manage, and process our data.”

Stelmet chose HPE Alletra, a cloud-native storage solution, as it removes the complexity of infrastructure management and enables staff to focus on accessing and utilizing data in the most efficient way. Built for every app, from traditional to modern, the HPE Alletra platform delivers architectural flexibility and cloud operating experience wherever data lives; on-premises, at the edge or in the cloud. With unified and intelligent management across all workloads, Stelmet can instantly respond to any workload demand and break down complex data silos. As a result, the company can significantly speed up IT driven services and free up resources that were previously required to maintain, upgrade, and tune storage in isolated locations.

Additionally, HPE Alletra’s AI-driven operations framework prevents issues before they happen and sends recommendations to improve performance and optimize resource utilization and planning. With the support of the HPE Timeless Storage program, the project will avoid costly rip-and-replace cycles and keep the storage continuously up to date with the technology upgrades every three years, or sooner, if required.

“With self-managing and self-improving HPE Alletra platform, our customers move beyond complex and time-consuming data management, and shift their focus to innovation,” said Marek Kwiatkowski, Business Development Manager at HPE, Poland. “Stelmet went from owning and maintaining data infrastructure to simply accessing and utilizing it. This approach makes a tremendous difference for a growing company. Now, they have more time, more resources at hand, and more capacity on demand.”

REGENT and Siemens collaborate for revolutionary zero-emission seaglider

2 August 2022

Siemens Digital Industries Software today announced that REGENT has adopted the Siemens Xcelerator portfolio of cloud-based software and services to help pioneer a new category of vehicle called the seaglider. The seaglider is a high-speed zero emission vehicle that operates exclusively over the water to drastically reduce the time and cost of moving people and goods between coastal cities.

With 40 percent of the world’s population living in coastal communities, REGENT’s electric seagliders will be the first vehicles to offer safe, low-cost, high-speed, zero-emission vehicles for this segment. As a manufacturer or OEM, REGENT's launch customers span aviation, ferry, and logistics transportation operators.

The REGENT seaglider operates exclusively over the water as an all-electric wing-in-ground-effect (WIG) vehicle. It travels the sea in one of three modes—floating on its hull near the dock, foiling on its hydrofoils at up to 40 knots (kts) as it comes in and out of port, or flying above the waves at 160 kts while cruising to its destination.

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When in flight, it operates a few meters off the surface of the water, relying on the ground effect phenomenon, flying on a cushion of air. It combines the high speed and comfort of an airplane with the low operating cost of an electric vehicle. Seaglidors differ from past WIGs due to their hydrofoils, distributed electric propulsion, and aerospace fly-by-wire controls. These elements enable safe harbor operations, increased wave tolerance, and a comfortable passenger experience.

At the heart of its design, engineering and development toolset is the Siemens Xcelerator portfolio, which has been fundamental to REGENT since its founding in 2020.

“At REGENT we are focused on bringing a revolutionary new vehicle to the transportation market with the potential to change how both people and freight move over the water,” said Mike Klinker, CTO and cofounder of REGENT. “As our seaglidors approach certification and full-scale commercial production, we need a robust, modern digital tools platform that supports the pace of our innovation cycles with the rigor to encompass a product as complex as ours. Siemens Xcelerator as a Service was a perfect fit for a digital-first startup like ours. Cloud native solutions, such as Teamcenter X, minimize administrative overhead and allow us to focus 100 percent on design, engineering, manufacturing, and innovation. Siemens’ valued collaboration and the subscription model provide significant cash flow benefits that are vital to any startup.”

REGENT's flagship seaglider, the 12-passenger Viceroy, will be built to the highest safety standards. It will be able to service routes up to 180 miles with existing battery technology and routes up to 500 miles with next-generation batteries, all via existing dock infrastructure. Additionally, its operation as a wing-in-ground effect vehicle above the water enables maritime testing and certification. This is an efficient pathway to entry-into-service, allowing customers to experience high-speed, zero-emission coastal mobility sooner than electric aviation options, while maintaining similar levels of safety.

“The revolution of both mobility and electrification is continuing at an exciting pace across the entire spectrum of the industry, but it’s not often that the two combine with such spectacularly innovative product design to address a specific challenge like the one faced by coastal communities across the globe,” said Dale Tutt, Vice President of Industry Strategy, Siemens Digital Industries Software. “REGENT is pioneering innovative high-speed coastal transportation while targeting net zero from the very beginning. Our Xcelerator as a Service portfolio is instrumental in helping them get there faster.”

TCS Partners with The Walton Centre NHS Foundation Trust to Build Digital Solutions for Patient Care

28 July 2022

Tata Consultancy Services (TCS) announced its partnership with The Walton Centre NHS Foundation Trust (The Walton Centre), to develop digital solutions that increase the productivity of specialists, reduce waiting times for patients, and enhance the experience.

To begin with, the two organizations will focus on transforming the experience for outpatient referrals to neurologists. According to The Walton Centre, patients with headaches make up the largest number of such referrals, with a three-month average waiting period to be seen by a consultant. TCS will develop an innovative artificial intelligence-based chatbot, which could transform the way headache patients are diagnosed and treated at the centre in Liverpool.

The chatbot will interact with patients being referred to a neurology or headache specialist and collect details of their condition and the symptoms through a structured set of questions. This will be used to compile a detailed medical history which clinicians can review before the first appointment with that patient and recommend a further course of action.

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Depending on the clinician's assessment, a patient may be put on a fast-track to be examined by a consultant or offered guidance on alleviating symptoms while they await their turn. The chatbot will reduce the need for specialist consultants, whose time is very scarce, to spend their first appointment asking those questions. This will enhance their productivity and help bring down the waiting time for patients. The chatbot will also provide useful information to the patient to help them prepare for, and get the best out of their first appointment.

The solution, which will be developed as a prototype, will leverage cloud native, serverless technologies and conversational AI, to ensure clinical safety and effectiveness.

Dr Anita Krishnan, Divisional Clinical Director for Neurology, The Walton Centre, and a **Consultant Neurologist** specialising in headaches, said: *“Technology is a huge part of medicine and it's exciting to work with TCS to create a new artificial intelligence-based solution which will help our patients. The chatbot system also has potential to be extended into other areas of medicine, which could benefit even more patients. We are working closely with TCS and our other specialist partners to ensure the new solution is effective and safe and improves efficiency and patient outcomes.”*

Shalini Mathur, Business Unit Head, Public Services for UK, Europe & ANZ, TCS, said: *“We are pleased to partner with The Walton Centre to transform patient care in UK using next-gen technologies. These technologies and solutions will help reduce waiting times for patients while improving the productivity of specialist consultants. This creates a blueprint for similar digital innovation in other clinical settings.”*

Product News

ActCAD 2022 Update 1391 Released, Dt.29-Jul-2022

29 July 2022

ActCAD announces the release of its new version 1391 for ActCAD 2022 Professional, Standard and Prime Versions.

This is a general maintenance release of 2022 version. Below is a list of improvements:

- Made SysvarGuard more robust
- Fixed script fail issue if QAFLAGS2 = 1024
- Updated IRX API for IcDbLinkConnection
- Fixed the issue of cannot create mleader/qleader if Y axis rotated 90 or -90
- Fixed hatch edit issue of "BYLAYER" and "Use current" appear in the Background color list, "None" disappears
- Fixed unable to remove copied Layout with Undo
- Fixed Table Style dialog returns to the Insert Table when attempting to choose Starting table
- Fixed SHEETSETMANAGER cannot open a DST file (sheetset) from Windows Explorer
- Improved DIMALIGNED to allow for Enter to finish after two clicks
- Fixed the right mouse button menu is not supported in the Table Style list
- Added some new options in Table feature
- Fixed hatch origin not properly set on hatch creation
- Improved Polish translation further

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- Fixed SUBTRACT command creates an error in the drawing
- Fixed the behavior of some LISP functions to match otherCAD
- Fixed SPLINEDIT command that ends when using the "convert to Polyline" from the dynamic menu
- Improved Layer explorer to scroll so that current layer is visible
- Fixed table updation issue when the cell data related to the cell format of the table is deleted
- Fixed some translation errors
- Fixed the issue of "vla-get-freeze" and "vla-get-lock" do not return :vlax-true and :vlax-false
- In PUBLISH command some UI changes done when adding drawings to sheet list
- Fixed hatch issue of very small contour closed objects
- Fixed -LAYOUT command that does not support the command line for all options
- Fixed some issues in PLANESURF
- Fixed error when calling a command from the dynamic menu in Dynamic input
- Fixed in GEO feature some grid is displayed on the background map
- Fixed in MLEADER impossible to completely delete a default text
- Fixed "Create New Cell Style" error for TABLESTYLE command
- Fixed the issue of last command not repeated on Enter
- Fixed when DATALINK is executed, the "Link to range" value is not saved(released)
- Fixed the issue of ssgget "C" not returning selection at the point
- Fixed in MLEADER leader Connections properties are different in the Multileader Styles Manager and Property pane
- Fixed Table cell selection and height issues
- Fixed in REVOLVE command that do not produce any result when using a region and its edge as an axis
- Fixed the issue of loss of drawing contents/functionality in Feedback command
- Fixed the issue of wrong template is used by NEW command
- Fixed the issue of can't get table data via vlax* LISP calls
- Fixed crash issue during SPELL CHECKING MODEL SPACE INSIDE OF LAYOUT MODEL SPACE
- In Prime, fixed the issue AEC cannot copy and mirror walls
- Fixed Checkbox in popup dialog about GDI resources not working
- Fixed in PUBLISH the default for "Publish to" should be PDF
- Fixed in Sheet Set Manager Layouts come in out of the order
- Fixed certain crash issues in GSSETTINGS when removing the checkbox 'Disable snapshot feature for WinGLES device'
- Fixed in FIELD command filename field is not evaluated on opening
- Fixed certain crash issue while deleting a layout

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- Fixed in FIELD command Sheet Set fields not implemented
- Fixed in PUBLISH dialog small text change to Browse for Folder dialog box when selecting PDF folder
- Fixed the error when selecting Crossing with the same coordinates
- Fixed the issue it is not possible to rotate 180 degrees using grip + space bar command
- Fixed TABLE vla-select for TABLE entity not implemented
- Fixed TABLE vla-get-ObjectName for TABLE not implemented
- Fixed Publish that fail to output huge images the first time
- Fixed in PUBLISH command, the name of the PDF file to be created is different from otherCAD
- Fixed if a DSD file is created after executing the PUBLISH command, the TARGET information is different from otherCAD
- Fixed in dynamic input 'Shaded with edges' and 'Shades of gray' not recognized
- Fixed in LISP that cannot pass non-initialized variables as parameter in the VLA function
- Fixed Field attribute values in block that cannot be seen after open

The new versions are available from ActCAD download page. Existing users can use Check for updates command to get the latest version.

ActCAD 2022 Update 1395 Released, Dt.04-Aug-2022

4 August 2022

ActCAD announces the release of its new version 1395 for ActCAD 2022 Professional, Standard and Prime Versions.

This is a general maintenance release of 2022 version. Below is a list of improvements:

- Made some improvements to Network License Manager
- Updated ODA dwg libraries
- Fixed some issue with Snap insertion
- Fixed crash issue while unchecking "disable snapshot feature for WinGLES device">/li>
- Fixed some crash issue while handling Osnap Manager
- Fixed the issue of Move command does not show entities while moving
- Fixed in Table default values appears when attempting to edit data link
- Fixed some issue in ActCAD IRX programs

The new versions are available from [ActCAD download page](#). Existing users can use Check for updates command to get the latest version.

AVEVA Launches 2023 Operations Control Software To Strengthen Workforce Efficiency For Industrial Enterprises

2 August 2022

AVEVA, a global leader in industrial software, driving digital transformation and sustainability, has launched the 2023 release of its operations control software, the first major coordinated release of its HMI/SCADA software portfolio, available in both perpetual and subscription purchases. The new

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release further supports the delivery of AVEVA Operations Control, a flexible, subscription-based solution of integrated capabilities that promotes greater efficiency and workforce collaboration at the scale that best suits the business.

The first of its kind in the industrial software sphere, AVEVA Operations Control simplifies day-to-day routines of teams by aligning workers around common digital threads of information, delivering the data and insights they need to drive growth at every level through increased efficiency, agility and reliability. With rich visualization technologies, analytics and development tools deployed within a hybrid cloud and on-premises environment, customers can ensure performance consistency, remove opportunity for human error, and improve operator insight and reactions to process deviations. Not only can critical information be retrieved faster, but inbuilt flexibility provides greater scaling – of data, users, or routes to revealing the correct decision.

“Digital technologies now comprise the beating heart of industrial enterprises. But operations teams do not yet have the ability to contextualize decisions within a cohesive and sustainable framework. AVEVA Operations Control leverages this information environment with a comprehensive set of applications that empowers users from edge to enterprise with real-time visibility of critical processes in every industry,” says **Rashesh Mody, Executive Vice President - Operations Business, AVEVA**.

AVEVA’s extensive portfolio is a core strength that supports customers in achieving the outcomes they seek. The 2023 operations control release focuses on worker empowerment with UI/UX enhancements, increased flexibility for web and mobile users, and greater connectivity. This release consists of updates in the following offerings: AVEVA System Platform 2023, AVEVA InTouch HMI 2023, AVEVA Edge 2023, AVEVA Plant SCADA 2023, AVEVA Historian 2023, AVEVA Communication Drivers 2023, AVEVA Reports for Operations 2023, AVEVA Development Studio, and AVEVA Teamwork.

“Value is often greater than the sum of its parts. The flexible collection of capabilities within the 2023 release function can be combined and linked for even greater effect. Instead of releasing a single HMI or SCADA product, we can enhance our customers’ ability to eliminate silos and build more intelligent systems that make their people smarter, thus maximizing the value obtained from their industrial data,” adds Mody.

The 2023 operations control software release is available through several procurement methods, including AVEVA Flex, the advanced industrial software subscription program. Customers can choose individual software offers within the operations control portfolio or realize new transformational value with end to end visibility across operations by subscribing to AVEVA’s broad portfolio through AVEVA Operations Control. AVEVA Operations Control removes traditional limitations on implementation by including unlimited software usage (measured by the number of users) and offering maximum commercial flexibility.

AVEVA Operations Control helps workers to do their jobs in a more sustainable way. Its comprehensive digital framework supports quicker, data-backed responses to events that require resolution, providing reliable process management systems, and reducing the effort required to train new staff. Customers across industries can further enrich their approach to environmental, social and governance (ESG) initiatives by leveraging the solution to tap data-driven insights for more efficient and environmentally sustainable operations.

Cadence Accelerates Hyperscale SoC Design with Industry's First Verification IP and System VIP for CXL 3.0

4 August 2022

Cadence Design Systems, Inc. announced the availability of the industry's first Verification IP (VIP) and System-Level VIP (System VIP) for the Compute Express Link (CXL) 3.0 standard to accelerate the adoption of the new technology. The Cadence VIP for CXL 3.0 is integrated with the Cadence VIP for PCI Express® (PCIe®) 6.0, providing a complete solution from IP to the system-on-chip (SoC) level that helps users create designs for high-performance data center applications.

The Cadence VIP for CXL provides high-performance model implementation that allows designers to quickly and thoroughly complete functional verification with less effort and greater assurance that the design will operate as expected. The VIP for CXL features Cadence TripleCheck™ technology, which provides a specification-compliant verification plan linked to comprehensive coverage models and a robust test suite to ensure compliance with the specification.

The Cadence System VIP solution has also been expanded to address the latest CXL specification. The solution includes the System Traffic Library for CXL that provides ready-to-use SoC-level tests that work seamlessly in both simulation and emulation, the System Performance Analyzer for automatic performance analysis from CXL to DDR, and the System Scoreboard that provides automatic coherency and data integrity checking.

“CXL is a disruptive technology that is quickly evolving, and early adopters need the ability to verify and ensure compliance with the specification to achieve the fastest path to IP verification closure,” said Jim Pappas, Director of Technology Initiatives, Intel Corporation. “We are delighted to see Cadence enabling advanced verification solutions for the newest standards, including the latest CXL 3.0 protocol.”

“CXL has become fundamental for hyperscale, data center, and cloud applications, and with the release of the CXL 3.0 specification, there is a need for tools that meet the latest requirements to ensure that early adopters can successfully build and verify their SoCs,” said Paul Cunningham, senior vice president and general manager of the System & Verification Group at Cadence. “The Cadence CXL VIP and System VIP are broad, highly differentiated, and industry-proven solutions. By supporting the industry's newest specifications and providing first-to-market verification solutions for both IP and the SoC level, Cadence allows customers to quickly implement new standards, such as CXL 3.0.”

The new VIP solutions are part of the broader Cadence verification full flow, which includes Palladium® Z2 emulation, Protium™ X2 prototyping, Xcelium™ simulation, the Jasper™ Formal Verification Platform, the Helium™ Virtual and Hybrid Studio and the vManager™ Verification Management Platform. The Cadence verification full flow delivers the highest verification throughput of bugs per dollar invested per day. The VIP solutions and verification full flow support the company's Intelligent System Design™ strategy, enabling SoC design excellence.

Cadence Library Characterization Solution Accelerates Delivery and Enhances Quality of Arm Memory Products

3 August 2022

Cadence Design Systems, Inc. announced that Arm is leveraging Cadence® Liberate™ MX Trio Characterization to enhance the quality of its embedded memory instances and compilers and speed time to market. With Liberate MX Trio Characterization, Arm achieved its accuracy and capacity

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requirements and reduced memory liberty variation format (LVF) characterization validation runtime by 7X when compared with brute-force Monte Carlo simulation.

Liberate MX Trio Characterization, a library characterization solution that is suited for large, advanced-node memory designs, enabled the Arm engineering team to efficiently and accurately perform characterization validation of its embedded memory instances and compilers. Unlike traditional solutions that require tradeoffs between runtime and accuracy, Liberate MX Trio Characterization provided Arm with automated and simulation-based dynamic partitioning to reduce runtime, increase capacity and maintain SPICE-level accuracy. In addition, the Liberate MX Trio Characterization's probing capabilities helped Arm identify the most critical timing arcs and reduce the manual effort associated with characterization path selection. Simulations on the full RC netlist covering a complete vector set let Arm identify accurate worst-case paths and maintain SPICE-level accuracy. Moving from Arm's previous brute-force Monte Carlo simulation methodology to the Liberate MX Trio Characterization variation LVF analysis methodology saved Arm weeks of validation time through the solution's automated and less error-prone methodology.

"Arm has been leveraging the Liberate Trio Characterization Suite for standard cell characterization, so it was an easy choice for us to broaden our deployment with Liberate MX Trio Characterization to address our evolving LVF memory characterization needs," said Philippe Moyer, VP Design Enablement, Physical Design Group, Arm. "By incorporating Liberate MX Trio Characterization into our methodology, we are improving accuracy, capacity and meeting time-to-market goals with the delivery of our embedded memory instances and compilers."

"Memory characterization can have a significant impact on signoff accuracy, and Arm was looking for a reliable solution for its embedded memory IP that would help them achieve their accuracy requirements while speeding time to market," said Sharad Mehrotra, VP of R&D, in the Digital & Signoff Group at Cadence. "Arm joined a community of successful, production-proven Liberate MX Trio Characterization customers, trusting the solution for its memory characterization needs and expanding upon its use of the broader Liberate product portfolio for standard cell power and performance characterization."

The Liberate MX Trio Characterization is part of the broader digital full flow, which supports the company's Intelligent System Design™ strategy and enables SoC design excellence.

Infosys Finacle Inducted to IFSCA Regulatory Sandbox to Power Blockchain-Based Trade Finance

1 August 2022

Infosys Finacle, part of EdgeVerve Systems, a wholly-owned subsidiary of Infosys announced that it has been inducted into International Financial Services Centres Authority's (IFSCA) Regulatory Sandbox framework to pilot its blockchain-based trade finance solution. The authorization was issued in the presence of the Honorable Prime Minister of India, Shri. Narendra Modi to Mr. Sajit Vijayakumar, Chief Operating Officer, Infosys Finacle, at an event organized by the IFSCA, at the Gujarat International Finance Tec-City (GIFT City).

In the first phase, six leading banks - Federal Bank, HDFC Bank, HSBC, ICICI Bank, RBL Bank and State Bank of India- are collaborating with Infosys Finacle in the regulatory sandbox. This collaboration will lead to comprehensive testing of the blockchain-based Buyers Credit solution, for short-term credit in foreign currency for import payments and trade finance transactions. This will serve as a precursor to the solution being available as a SaaS-based offering for all banks servicing clients from GIFT City.

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In its endeavor to support a world-class fintech hub at GIFT City, IFSCA had launched I-Sprint'21, a global FinTech Hackathon, as part of InFinity Forum 2021. After multiple rounds of assessment, the Finacle Trade Connect, a blockchain-based solution was selected for the 'Buyers Credit Optimization' category and consequently, granted direct entry into the IFSCA's Regulatory Sandbox. Finacle Trade Connect helps banks, corporates, and various trade partners, such as shipping companies, insurers, and customs agencies, connect directly on a unified distributed network enabling inter-organization automation of trade finance processes. Apart from Buyer's Credit, the solution offers capabilities across Letter of Credit, Open Account for Trade, Bill Collection, Bill Exchange, C2C Transactions for Trade, B2C Transactions for Trade, PO Financing, Invoice Financing, Bank Guarantee, and Factoring.

Starting with Buyers' Credit, the Finacle Trade Connect solution will remove friction from the trade finance value chain by connecting various commercial banks, their international banking units at GIFT city, and their business clients on a unified distributed platform. The new platform will speed-up transaction times from weeks to hours and drive significant cost savings. It will also enable trade expansion to drive economic growth. The solution will also enable marketplace capability where customers can request the participating banks' international banking units at GIFT city to provide competitive quotes to unlock the best offers.

Varun Bakshi, Head-Product, Transaction Banking, RBL Bank, said, "RBL Bank is delighted to collaborate with Infosys Finacle to introduce Blockchain Technology for Buyers Credit. This enhanced offering will enable us to launch a highly efficient transaction delivery platform as well as offer an effective mitigant against potential risks. We look forward to the current sandbox framework being expanded further by bringing more ecosystem participants on the platform thus benefitting all stakeholders."

Sajit Vijayakumar, Chief Operating Officer, Infosys Finacle, said, "Trade is a vital engine for economic and social progress. Yet, trade finance has a huge unmet demand globally. Solving this problem can help unlock significant opportunities for businesses and banks. But the trade finance ecosystem is complex. Multiple entities and paper-heavy processes create high turnaround times and significant costs. At Infosys Finacle, we are very pleased to collaborate with leading banks and the IFSCA to help reimagine trade finance processes. The Finacle Trade Connect solution will help banks digitize and automate the currently cumbersome trade processes, to unlock significant value for the businesses and banking community."

More accessible and precise target modelling with the latest release of UXO Marine and Oasis montaj 2022.1

28 July 2022

The latest release of Oasis montaj 2022.1 significantly improves UXO Marine target modelling. The new features and improved UXO target modeling allow users to better understand their target lists. Moreover, you can reduce investigation and remediation costs with streamlined data analysis and modelling tools that make it easier to produce high-quality data products.

A new tool, **Calculate Signal Strength, Signal to Noise Ratio, and Size**, calculates target polygon windows and several metrics for your targets. This tool uses a grid or a database to define polygons around each of your anomalies. Within that data window (polygon), several metrics for each anomaly are calculated: namely, signal strength, size, and signal-to-noise ratio. The target polygons can then be used to model your targets using **Batch Fit**.

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Because it is highly recommended to review the polygons on your map before using them for modelling and target analysis, you can use the new tool **Redefine Target Windows** to edit your polygons. For example, noise in the data may cause a double peak in an anomaly resulting in a polygon that does not entirely encompass your target.

Batch modelling in UXO Marine now supports polygons. Using the polygons calculated in the **Calculate Signal Strength, Signal to Noise Ratio, and Size** tool is a common way to generate these polygons. Otherwise, batch modelling will use a square window.

Calculate Target Size is now called **Calculate Euler Target Sizes**, which better describes its functionality: calculating the size of the window in Euler deconvolution. It still calculates a size channel, which is the half-width of a square window around your target. However, it is helpful to inspect the calculated sizes and adjust them when necessary, so we have added a new tool called **Plot Euler Target Windows** that plots your size channel as a proportionally sized symbol on your map.

It allows you to visualize your target windows quickly to discern if they are the appropriate size for your target modelling. If you make any edits to the size channel, you can quickly rerun it and inspect the changes.

After you have completed target modelling, you can better understand and document the results by visualising both the modelled and observed data, with the data residual (the difference between the observed and modelled results).

The new **Create Modelling Results Map** tool will create a map for each target in your group for chosen observed values. This tool uses the targets database and the modelling database, which is the database containing the data in the anomalies windows that were used for the modelling.

The new **Merge Target Databases** tool merges up to four separate target databases into a single combined, merged target database, which is useful when multiple target lists are generated from different sensors or data types. For example, you may have a magnetic anomaly target list and a side-scan sonar target list, and you would like to compare which targets were detected using both methods. This type of analysis can help you discern targets of interest.

In the **Merge Target Databases** tool, you can specify a search radius that will cluster or group targets within that radius. The final merged target database will have two groups; one listing all the targets you have merged, and a second where we have identified clusters of targets within the specified radius.

OpenText Unveils Cloud Editions 22.3, Unleashing Exponential Innovation as Project Titanium Roadmap Takes Off

4 August 2022

OpenText™, announced Cloud Editions 22.3 (CE 22.3). Building on its 90-day release cycles for new capabilities, this new set of innovations from OpenText on their Project Titanium roadmap is fueling the future for more integrated information management in the cloud.

As a global leader in information management, OpenText continues to invest in the cloud to help customers run hybrid and run anywhere, while being secure and compliant across global data zones. With 80% of its annual research and development investment put towards innovating cloud-based solutions, OpenText is focused on powering and protecting businesses through next generation integrated solutions that run on an open secure information platform. Project Titanium (announced in June 2022 alongside Cloud Editions 22.2) gives customers the simplicity, flexibility, and trust to thrive in today's dynamic digital world with more than 100 innovations slated over the next 12-18 months.

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“In our world today, information is exponential and a disruptive force. OpenText is leading the way, enabling businesses to realize sustained business value through the information advantage. We believe that when businesses are more intelligent, connected, and responsible through how they manage their data and information across multiple clouds, they operate at full potential and full speed,” said Mark J. Barrenechea, OpenText™ CEO & CTO. “Providing businesses with the solutions they need to prosper in the ever-evolving environment is at the forefront of what we do. CE 22.3 innovations highlight where OpenText is going to enable customers to consume how they want, whether that is in a private cloud, in the public cloud, via cloud API services, or off-cloud. Our innovations today are important milestones in our journey toward greater cloud innovation in market.”

CE 22.3 provides the ultimate protection and support to build a more secure world

As we continue to navigate global disruption, an organization’s best defense against cyber threats is a cyber resilience framework including robust, multi-layered security and data protection. OpenText security solutions protect businesses including their Domain Name Service (DNS) requests. **OpenText™ DNS Leak Prevention** technology stops rogue DNS requests by leveraging the power of BrightCloud Threat Intelligence to identify and block vulnerabilities exposed through DNS including tunneling and data exfiltration attacks. The addition of Leak Prevention to Webroot DNS Protection provides security operations stronger and more accurate control of DNS despite the challenges presented by encrypted DNS such as DoH (DNS over HTTPS), ensuring users’ data stays protected.

The protection of information in the cloud is equally as critical and 22.3 offers a new Key Mediator product delivering bring your own key (BYOK) capabilities and gives encryption control to customers in **OpenText™ Extended ECM** and **OpenText™ Documentum**.

OpenText is also expanding its support for forensic investigators through OpenText EnCase enhancements. The addition of Advanced Forensic File Format 4 (AFF4), in both **OpenText™ EnCase Forensic** and **OpenText™ EnCase Endpoint Investigator**, broadens support of industry standards and enables customers to consolidate evidence collected with multiple tools into a single case file, resulting in faster, more efficient investigations.

CE 22.3 empowers employees to improve output and more easily automate processes

OpenText puts front and center for customers the importance of simple integrations with common leading applications. **OpenText™ Core Content** CE 22.3 makes work easier for businesses including: Core Content public user interface (UI) widgets that enable developers to integrate Core Content easily and securely with multiple in-house systems, the new iOS mobile app for OpenText™ Core Content, providing access and flexibility to work from anywhere at any time and the workflow feature in OpenText Core Content now includes a more detailed audit trail for enhanced compliance.

Important to CE 22.3 are new innovations for **OpenText™ Documentum for Life Sciences**, an industry-leading enterprise content services platform that leverages industry guidance and best practices to manage documentation throughout the drug lifecycle using a single source for regulated content. This release brings greater compliance, traceability and overall efficiencies to business processes for pharmaceutical manufacturers including print tracking and control features, and enhanced review and approval workflows in Life Sciences Smart View.

OpenText continues to maximize integration opportunities for businesses of any size with the recently reimaged, game-changing solution **OpenText™ Active Access**, providing single sign-on access to business ecosystem information for both internal and external users to facilitate digital collaboration. It enables centralized user management through the ability to delegate admin tasks to partners to lower costs and improve quality of user data.

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CE 22.3 better serves the customer by driving insights, productivity and speed

Customers today are using more communication channels to engage with businesses than ever before. Understanding a customer’s interaction and engagement with an organization and aggregating that data to drive actionable insights is critical for a business to make informed decisions and provide positive customer experiences. With **OpenText™ Qfiniti Explore**, multi-channel data is brought together in one application for businesses to gain insight into customer interactions quickly and easily. In CE 22.3, customers are now able to intrinsically ingest, analyze and aggregate data from customer chat sessions. It also boasts a new open transcription service so customers can leverage existing transcription investments. These innovations allow decision makers to quickly gain more insight into how customers are interacting with their business and employees.

Improving efficiency is a top concern for marketing and publishing teams. In CE 22.3, **OpenText™ Media Management** is driving increased productivity, agility and speed-to-market for users with the ability to use the Workflow Builder to automate the publishing of content to platforms such as Vidyad, YouTube or a CDN, with more publishing integrations being added regularly. Also new to the solution is the support for Google Video AI for object, places and activity analysis, and an integration with social media management platform Hootsuite™.

The innovations in CE 22.3 deliver more tools to the customers to improve their overall experience as well as provide them with greater control and security.

Release Announcement of CADdoctor for Autodesk Moldflow 2021.3

5 August 2022

Elysium has released CADdoctor for Autodesk Moldflow 2021.3.

Key Enhancement

Added support for the latest CAD versions

Import Options	Versions added in 2021.3	Supported Versions
CATIA V5	R32(V5-6R2022)	R7 – R32(V5-6R2022)
NX	NX 2007 Series	UG10 – NX 2007 Series

VERICUT Announces Version 9.3 – Smarter Software for Smarter Machining

2 August 2022

CGTech is proud to announce the latest release of VERICUT, Version 9.3. VERICUT is the industry leader in machine simulation, verification, and optimization for all types of CNC machining, additive, and hybrid manufacturing processes. The software operates independently, but also integrates with all leading CAM systems.

VERICUT 9.3 focuses on creating “smarter,” more efficient manufacturing processes with features that bring in data around the machine, the tools, and the stock to improve simulation and the overall manufacturing workflow. Improvements have been made to strengthen VERICUT’s core, including improved collision checking, increasing the limit on axes per subsystem, and more. Cutting tool data in the Tool Performance Database and machine monitoring are only a few of the notable changes in this version. Hundreds of customer-driven changes and improvements have also been addressed in this latest release.

“VERICUT 9.3 provides smarter data for smarter manufacturing, giving our customers a ‘cutting

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edge,” says Gene Granata, Director of Product Management. “With enriched machining metrics, Force feedrate and tool deflection optimization, this latest VERICUT release creates the most highly optimized, yet safe to run NC programs for any CNC machine.”

“In 9.3, Tool Manager connects users with online tooling sources and tool databases to import ‘smart’ cutting tools with corresponding data for proper use. A new Tool Performance Database enables even non-machinists to choose appropriate feeds and speeds for cutting a variety of common stock materials,” continues Mr. Granata. “All this intelligence helps programmers use and optimize cutting tools as they were intended, avoiding broken cutters and potential damage to parts or CNC machines.”

VERICUT’s integrated optimization module, VERICUT Force, has also received additional features and enhancements in 9.3. Alongside improvements to core features and functionality, deflection calculations have changed to account for the entire rotating tool assembly, where previous versions only accounted for solid round tools with holders. This change in deflection along with cutting tool data and information about stock material, improves part surface finish, ensures the part meets the appropriate dimensions, and extends cutter life.

“We’ve seen up to 40% more tool life and 30-40% savings in machining cycle time when using VERICUT Force,” says Jason Mills, Engineering Manager at Advanced Manufacturing, Ltd. (AML). “The module is invaluable for our production work as it provides us with a competitive edge. It’s quite easy to understand. We simply pick the material from the database and input the cutter geometry, which we get from the tooling manufacturer. Force then does its calculations in the background.”

VERICUT 9.3 Highlights

Build, Manage, and Reuse Assemblies

Use VERICUT’s Assembly Manager to create and manage portions of your NC machines such as rotary table configurations, angle heads for machining, robot end effectors, or various workholding setups with fixtures and workpieces to be machined. The library of assemblies saves programmer time since they are easily accessed by others, and for repeated use in new VERICUT projects.

Status and HUD Improvements

Streamline machining and information seen in the Status Window and Head Up Display (HUD). The HUD can automatically update to match visible Status information, or use “Field Visibility Edit Mode” to concurrently edit Status and HUD configurations. Users can lock and unlock the visibility of status groups to retain the same layout for every VERICUT project they open moving forward.

Force Optimization Improvements

Achieve better machined part quality and longer tool and spindle bearing life with improvements made to Force. Deflection calculations have been updated to account for the entire rotating tool assembly, including indexable insert mills and model file cutters. Users can also add volume removal rate (VRR) limits to all cutters. Analysis and optimization for solid round tools and complex cutters has also been added.

Tool Performance Database (TPD) and Machine Optimization Data (MOD)

VERICUT’s Tool Manager now includes a Tool Performance Database (TPD) that suggests starting spindle speed and feed rates values to use with cutters in a wide range of stock materials. This data works with Machining Optimization Data (MOD) in VERICUT’s Tool Manager. MOD displays a table of spindle speeds and feed rates that helps programmers choose appropriate cutting speeds and chip thickness values based on the cutting tool used, and stock material being machined.

CNC Machine Monitoring

Get data directly from CNC machines on the shop floor for use in VERICUT. The first connective

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ability being released with VERICUT 9.3 is Pre-Check, which obtains data from machines to ensure VERICUT's virtual machine is the best possible "twin," and validate the job setup information on the machine matches what was verified in VERICUT. Users can identify key differences so they know exactly what will happen prior to running the part on their machine.