

## Contents

<b><i>CIMdata News</i></b> .....	<b>3</b>
CIMdata Releases eBook on Hybrid Digital Twins .....	3
CIMdata Releases Enterprise BOM Research .....	3
Closing the Information Gaps in BIM: Critical for Industry Success – a CIMdata Commentary .....	4
Creating Amazing Moments of Service - IFS Unleashed 2022 - a CIMdata Commentary .....	11
<b><i>Acquisitions</i></b> .....	<b>14</b>
CAPGEMINI SIGNS AGREEMENT TO ACQUIRE QUANTMETRY TO ENRICH ITS AI AND DATA CONSULTING CAPABILITIES IN FRANCE .....	14
Graphisoft to acquire Abvent French and Swiss Archicad business units from AV-Tech Group.....	15
Rockwell Automation Completes Acquisition of CUBIC .....	16
Siemens expands industry-leading integrated circuit verification portfolio with acquisition of Avery Design Systems .....	16
<b><i>Company News</i></b> .....	<b>17</b>
Altair Appoints Ravi Kunju to Chief Product and Strategy Officer .....	17
Digital Twin Consortium Foundational Paper Helps Organizations Assure Trustworthiness in Dynamic Systems .....	17
DXC-Luxoft Opens New Italy HQ and Automotive Center of Excellence in Turin.....	18
Hexagon and Raytheon Technologies developing simulation tool to improve 3D printing build quality.....	19
Honeywell And Aramco Announce Joint Venture For New Intelligent Operations Software Solution .....	20
L&T Technology Services inaugurates Engineering R&D Center in Toronto, Canada.....	21
NEW CEO DIRECTOR ROLAND SCHNEIDER TAKES THE HELM AT CENIT SWITZERLAND AG22	
PROLIM strengthens its AWS Select Consulting Partner Status .....	22
Revolution in Simulation Welcomes Corvid HPC as its Newest Sponsor .....	23
Stratasys Makes Strategic Investment in Axial3D.....	23
<b><i>Event News</i></b> .....	<b>24</b>
AVEVA Showcases Role of Digital Technologies in Achieving Zero-Carbon Economy at COP27 .....	24
HONEYWELL TO HOST NEXT LEADERSHIP WEBCAST SERIES FEATURING DARIUS ADAMCZYK, GREG LEWIS, VIMAL KAPUR, AND ANNE MADDEN; ANNOUNCES PARTICIPATION AT UPCOMING INVESTOR CONFERENCES.....	26
PTC to Host Virtual Investor Event on Thursday, November 17th, 2022 and Participate in Upcoming Investor Conferences .....	26
Tango Announces Upcoming User Conference, Tango Connect .....	27
Turn your business smart with IoT: CONTACT Software at the SPS 2022 .....	27
<b><i>Financial News</i></b> .....	<b>28</b>
American Software to Announce Second Quarter Fiscal Year 2023 Preliminary Financial Results .....	28
Ansys Announces Financial Results With Record Q3 ACV and Revenue .....	28
Autodesk Extends Invitation to Join Financial Results Conference Call .....	31
Capgemini - Strong growth momentum sustained in Q3.....	31
CENIT KEEPS ON GROWING: GROUP REVENUES INCREASE BY AROUND 11.5% TO EUR 115,863 K EUR COMPARED TO PREVIOUS YEAR.....	34
DXC Technology Reports Second Quarter Fiscal Year 2023 Results.....	35
FARO Announces Third Quarter Financial Results .....	36
HONEYWELL DELIVERS STRONG THIRD QUARTER RESULTS AND BEATS GUIDANCE ON	

# CIMdata PLM Industry Summary

---

SEGMENT MARGIN AND EARNINGS; RAISES FULL YEAR OUTLOOK.....	38
Informatica Reports Third Quarter 2022 Financial Results.....	41
Procore Announces Third Quarter 2022 Financial Results .....	44
PROS Holdings, Inc. Reports Third Quarter 2022 Financial Results.....	46
PTC ANNOUNCES FOURTH FISCAL QUARTER AND FULL YEAR 2022 RESULTS .....	48
Rockwell Automation Reports Fourth Quarter and Full Year 2022 Results; Introduces Fiscal 2023 Guidance .....	51
Simulations Plus Reports Fourth Quarter and Full Fiscal Year 2022 Financial Results .....	53
TRIMBLE ANNOUNCES THIRD QUARTER 2022 RESULTS .....	55
<b>Implementation Investments.....</b>	<b>56</b>
ALOHAS Steps Up Omnichannel Strategy with Centric PLM™ .....	56
Atos to deploy and manage intelligent network for Siemens Healthineers with seven-year contract.....	57
Blue Spirit Aero Accelerates the Development of Its Hydrogen-Powered Aircraft with Dassault Systèmes .....	58
Construction machinery giant Kobelco selects IFS Cloud for greater agility and customer responsiveness .....	59
Infosys and Microsoft modernise Spark New Zealand’s corporate functions to accelerate business growth and resilience .....	60
Outdoor Research Selects Centric PLM™ Based on Intuitive User-Experience, High Functionality and Value.....	61
ScandiNova Set for Powers Ahead with the Infor Cloud .....	62
<b>Product News.....</b>	<b>63</b>
Ansys Announces the Launch of Ansys Gateway powered by AWS.....	63
Bricsys® PROMISES TO DEMOCRATIZE INNOVATIONS IN CAD WITH FLEXIBLE LICENSING FOR ALL USERS .....	63
COMSOL Releases Version 6.1 of COMSOL Multiphysics® .....	65
Desktop Metal Announces Broad Availability of the Shop System™ Forust Edition, the World’s First High-Speed 3D Printer for Upcycled Wood Parts .....	67
Dyndrite and SLM Solutions to Cooperate on Full Support for SLM Solutions AM Metal Printing Machines .....	68
Fadata and NTT DATA Together Deliver the Global Insurance Industry a Cloud-Based Managed Service Solution.....	69
Informatica Launches Intelligent Data Management Cloud for State and Local Government.....	70
New in SprutCAM 16.3.2 release.....	71
Release Announcement of CADdoctor for NX Ver.4.3 .....	72
SCIA Engineer 22: Usability enhanced .....	73
Siemens expands access to advanced simulation with Simcenter Cloud HPC.....	73
SimScale Launches Online Learning Center for Cloud-Native Engineering Simulation.....	74
VOLTA and modeFRONTIER 2022R3 available now .....	75

## CIMdata News

### ***CIMdata Releases eBook on Hybrid Digital Twins***

2 November 2022

CIMdata, Inc., the leading global PLM strategic management consulting and research firm announces the release of an eBook, “Hybrid Digital Twins: Evolving from Product Development into Operational Efficiency,” focused on the state of the art in applying digital twin technologies in industrial companies.

Manufacturers in all industries have been applying digital modeling and simulation technologies since the 1970s but now face new challenges as products continue to become more complex, more functional, and more connected with an ever-increasing amount of embedded software and electronics as part of the Industry 4.0 “systems of systems” world. New business models such as “products as a service” are changing the way manufacturers think about the product lifecycle. Established market leaders are also competing with emerging start-ups that can digitally design new products faster and from scratch without the limitations of legacy products and traditional hardware-centric processes. Companies can no longer develop innovative new products with traditional design processes working across disconnected silos of engineering knowledge and data (mechanical, electrical/electronics, embedded software, controls, manufacturing, etc.).

Hybrid digital twins consisting of physics-based simulation models augmented with empirical data from real world operations and AI/Machine Learning analytics are now being applied across a wide range of industries and across the entire product lifecycle including in service operations to perform virtual commissioning and troubleshooting; reduce maintenance costs and cycle times; and optimize in-service operational performance and lifecycle costs including production yield as a service.

“However, realizing the business benefits of hybrid digital twin technologies also requires a business strategy and technology implementation roadmap that spans engineering, manufacturing, operations, IT, and IoT including the data management infrastructure required to establish a digital thread of key information across the global enterprise”, states Donald Tolle, CIMdata Practice Director, Simulation-Drive Systems Development. “As such, developing and applying hybrid digital twins must address engineering process and organizational factors in addition to the effective use of the latest multi-physics modeling and simulation technologies and software tools.”

As the market share leader in the CAE domain, Ansys provides a complete portfolio of hybrid digital twin software tools and implementation services capabilities to meet the business needs of industrial machinery providers and the end users of today’s complex cyber-physical systems. “Creating accurate models that evolve and age with the asset that they are paired with is a key requirement for digital twins,” says Sameer Kher, Senior Director Digital Twins at Ansys. “Ansys’ Hybrid Analytics capability is an end-to-end solution that combines physics-based and machine-learning techniques to meet this requirement in a scalable way.”

The CIMdata eBook on hybrid digital twins is available at: [www.CIMdata.com](http://www.CIMdata.com).

### ***CIMdata Releases Enterprise BOM Research***

3 November 2022

CIMdata, Inc., the leading global PLM strategic management consulting and research firm, announces the release of a summary of CIMdata research on the application of an enterprise bill of material (BOM).

Manufacturers from many industries face incredible demand to bring their multi-domain products to

# CIMdata PLM Industry Summary

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market faster while differentiating from their competition. As product complexity continues to increase, companies are exploring enterprise-level BOM management strategies to better manage part and product data throughout the product lifecycle and foster collaboration across software, electronic, electrical, and mechanical domains. To better understand the issue, CIMdata worked with Siemens Digital Industries Software (Siemens) to conduct a survey on enterprise BOM practices and plans of industrial companies.

“In CIMdata’s industrial consulting practice, BOM management practices vary widely by company. Some have very mature approaches, and others are clearly not at the same level,” stated Stan Przybylinski, CIMdata’s Vice President. “As we saw in this survey, the applications used for BOM management vary by lifecycle stage. Microsoft Excel is still far too important to many industrial companies, with even very large enterprises using this ubiquitous solution. Almost half said their BOM management approach hurts their business, even though 22% say they already have an enterprise BOM capability. Most of the rest of our respondents plan to go there (eventually),” continued Mr. Przybylinski. “While our survey results show a mix of capabilities and approaches, overall, this research suggests that there is a solid business opportunity to deliver powerful enterprise BOM capabilities to better support the needs of industrial manufacturers.”

The full report is available for download on [CIMdata.com](http://CIMdata.com).

## ***Closing the Information Gaps in BIM: Critical for Industry Success – a CIMdata Commentary***

2 November 2022

### *Key takeaways:*

- Buildings, infrastructure, and other similar physical assets are designed and constructed by AEC/EPC firms and typically owned and operated (O/O) by other organizations. This leads to a typical data dilemma: too much data that is often not the correct data nor semantically accurate to be usable. Data governance is badly needed, which itself requires data alignment.
- The AEC/EPC and O/O domains often struggle to deliver a complete and accurate information model to their O/Os, missing clear guidance from “data stewards.”
- Without an overarching data model and resulting digital twin of a physical asset, O/Os struggle to maintain their facilities making enhancing and modernizing difficult and more expensive.
- Holistic and standards-based solutions that integrate processes across the end-to-end asset value chain, as well as manage the resulting data are critical in solving the major lifecycle issues.
- Eurostep has leveraged its extensive experience solving similar long-asset-life collaboration and data management issues to create and deliver an integrated Asset Information Management (AIM) solution based on their ShareAspace PLM solution.

### Introduction

Asset intensive industries have long struggled with a complex value chain where no one organization has complete end-to-end control of any given physical asset. Architectural, engineering, and construction (AEC) firms, often referred to as engineering, procurement, and construction (EPC) firms in large scale capital projects, typically are only responsible for designing, building, and handing over a facility to an owner/operator. Things are often much more complex when one or more firms are responsible for architectural design, others are responsible for construction management, others for supporting fabrication and construction, and finally others are responsible for the handover to the O/O. It is these O/Os who are ultimately responsible for the rest of the lifecycle of the physical asset, which can

# CIMdata PLM Industry Summary

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span many decades. This handover isn't unique to the AEC/EPC industry, other industries (e.g., ship building) have similar lifecycle stages (see Figure 1).



*Figure 1—Typical AEC/EPC-O/O Lifecycle Stages*

Handover typically takes place during or upon the successful completion of the “Commissioning” stage. It is here where the AEC/EPC firm hands over the asset to the O/O. This should include all the digital assets (e.g., as-built structures, equipment descriptions, maintenance manuals, and operating manuals), as well as the physical asset itself. Unfortunately, the handover process is often limited and doesn't include all the necessary and usable data (i.e., data that is in a ready to use format) for the O/O.

## Lifecycle Challenges

The AEC/EPC industry is riddled with poor handover examples, where the data is limited and often paper-based. The over-reliance on paper to manage processes and deliverables is widespread. Paper is frequently used for construction drawings, material procurement, equipment logs, daily progress reports, punch lists, and other project-related information (e.g., contracts). This has often resulted in poor asset development, utilization, and maintenance. Furthermore, ineffective information sharing is rampant. Architects, engineers, contractors, and owners often work from different versions of reality. This fact frequently triggers disagreements on change orders and claims management, as-built structures that don't match current as-designed structures, which can all lead to finger-pointing when cost overruns and project delays occur. Ineffective reuse and analysis of information is also widespread. Scattered and disconnected data and processes cause major problems analyzing data to identify opportunities for process improvement. This in turn seriously compromises jobsite efficiency, operations and maintenance, and overall project and risk management.

It is important to note that while this lifecycle is easy to understand, it is rather complicated to manage for a number of reasons. For one, the major stakeholders (i.e., AEC/EPCs, O/Os, and regulatory agencies) often have conflicting requirements (e.g., sub-contractors try to minimize the data overload, maintainers and operators lack contextualized data and traceability, and regulators try to ensure that the facility is meeting ever changing regulatory requirements). This makes managing the lifecycle of the physical asset (e.g., a plant) and all of its defining data rather difficult. Many view doing so to being like trying to hit a fast moving target with unpredictable speed and trajectory with a ball being thrown by a person in slow motion. The good news is that building information modeling (BIM) is a movement to try to gain control of this lifecycle data.

## Building Information Modeling

As summarized on Wikipedia, Autodesk's website, and by many others, BIM, sometimes also referred to as Building Information Management, is a process supported by various tools, technologies, and contracts involving the generation and management of digital representations of physical and functional characteristics of physical asset (e.g., buildings and infrastructure). According to Autodesk, a leading AEC software provider, BIM artefacts are based on an intelligent model and enabled by an information platform. Autodesk goes on to state that, “BIM integrates structured, multi-disciplinary data to produce a digital representation of an asset across its lifecycle, from planning and design to construction and operations.” BIM are typically project-oriented data models that follow the lifecycle of the project responsible for the design, construction, and maintenance and upgrade of a facility.

Some attribute the concept of BIM back to Mr. Charles Eastman and his research report entitled An

# CIMdata PLM Industry Summary

Outline of the Building Description System. But most agree that the term BIM came into the industry in the early 2000s. With the United Kingdom’s push for BIM, which formed the basis of international standard ISO 19650, launched in January 2019, many other governments have followed. The UK’s “...BIM program commenced in July 2011 and is focused on the adoption of BIM technology by both public and private sector organizations involved in the procurement and delivery of buildings and infrastructure.” Finally, according to Trimble, another industry leading provider of AEC software solutions, “Across the world, BIM is a crucial and even mandated process to ensure the planning, design, and construction of buildings is highly efficient and collaborative.”

While the BIM movement is well developed and being promoted within many countries and companies, and supported by technologies from many solution providers, it is still being mainly leveraged by AEC/EPC firms and underused by O/Os. As a result, there is a clear need to increase BIM processes maturity and to communicate what value it can provide the AEC/EPC-O/O world.

## Current Notable Trends

Like other major industries, the construction industry’s complexity and global reach are significant. Oxford Economics estimate the global construction market was valued at US\$10.7 trillion in 2020, and that the global construction market is expected to grow by US\$4.5 trillion between 2020 and 2030 to reach US\$15.2 trillion. The lifecycle complexities, as described above, aren’t new to the industry and as a result, much work has been done to address them. Today, there is a heightened awareness of, and increase in, deliverable expectations. A decade ago, it was often sufficient for architects and engineers to deliver 2D designs that were plotted or printed for use on the construction site. While that is still largely true in residential construction, in the world of commercial and industrial projects, BIM is now the standard. It should be noted that for process plants built by EPCs, the term “BIM” isn’t used—instead people talk about ISO 15926 (an ISO standard that defines the integration of lifecycle data for process plants)—but the idea is the same. It is becoming the standard to deliver a multi-disciplinary model that incorporates 3D geometry and relevant metadata.

Much of what passes for BIM today is little more than 3D geometry. However, this is changing. Just a few years ago, so-called Level 2 BIM (see Figure 2) became mandatory for public building projects in the UK, and the same is true in some other regions. While no one is executing to Level 3 BIM at any volume today, it is clearly coming. Note the phrase “Lifecycle Management” on this chart produced by the BIM Task Group in the UK back in 2010.

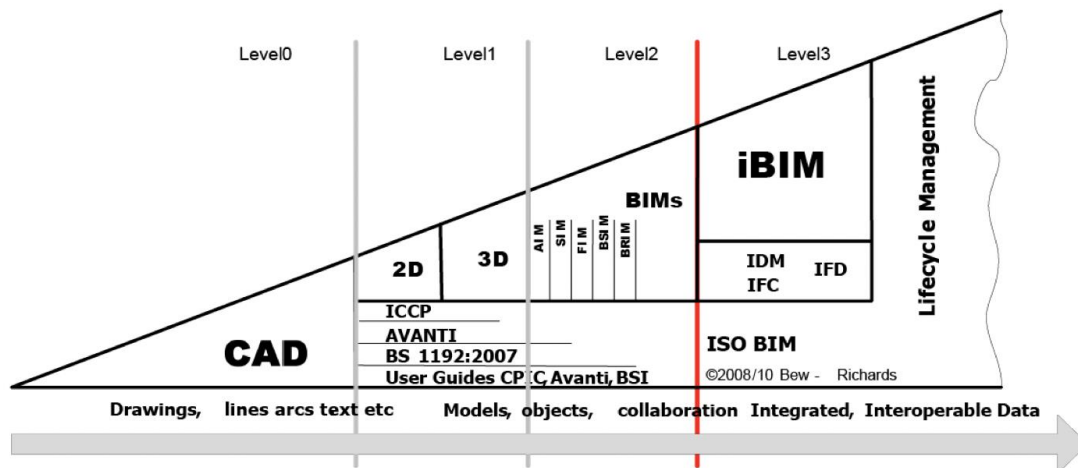


Figure 2—UK Government Three Milestone Levels as defined by the BIM Task Group (BIM Task Group, 2010)

# CIMdata PLM Industry Summary

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Besides various BIM initiatives, others focused on automated data handover are underway as well. For example, the Construction-Operations Building Information Exchange (COBie), an open standard leveraging the openBIM standard IFC (Industry Foundation Classes)/ISO 16739), exists for the UK and some U.S. states., But in general there is a lack of standardized handover information management. COBie is a performance-based specification for facility asset information delivery that addresses two types of assets: equipment and spaces. COBie is being designed to help project teams organize electronic submittals approved during design and construction and deliver a consolidated set of electronic documentation.

Top of mind for many O/Os is long-term maintenance and modernization. Through the use of various scanning technologies (e.g., LiDAR), which are thought to be a cost-efficient way of capturing spatial decomposition in existing facilities, many are seeking to understand and replace current structures and equipment. Some are using this technology to produce models that can then be used as a basis for upgrading. Unfortunately, referencing these information models into a comprehensive asset information model (AIM) is rather costly due to their complexities and disconnection from the actual assets.

Leadership in Energy and Environmental Design (LEED) is another important construction initiative that impacts the complete lifecycle. According to U.S. Green Building Council, “LEED provides a framework for healthy, efficient, carbon and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement and leadership.” LEED and similar design and operational initiatives, as well as construction material upcycling, require often unavailable online property dictionaries to index digital twins’ elements to a shared definition. Fortunately, new ISO standards (i.e., ISO 23386 and 23387) have been published to ensure interoperability between these master data definitions, but now they need to be deployed.

Additionally, like many discrete industries, carbon benchmarking is trending for construction products (e.g., equipment) as well. Unfortunately, this benchmarking needs to be addressed from a systemic point of view (e.g., comparing HVAC and Solar energy functional systems rather than discussing a specific insulation type and thickness). This is an excellent example of where the construction industry can leverage significant learnings from the discrete manufacturing industry.

With the advent and significant and on-going expansion of smart, connected devices (e.g., HVAC systems, and water and waste systems/pumps), the use of Internet of Things (IoT) sensors to monitor the configuration and behavior of physical assets within facilities is gaining momentum. It isn’t good enough to know what was installed by the AEC/EPC firm, the O/O also needs to track and maintain the current as-operated, as-maintained view of their facility and all of its equipment. Again, the handover disconnect issue described above is problematic. This disconnect leads to data gaps in information models that prevent proper impact analysis during the subsequent O/O phases (e.g., on-going maintenance and upgrade).

Finally, a note on data governance. CIMdata defines data governance as “the organization and implementation of policies, procedures, structure, roles, and responsibilities that outline and enforce rules of engagement, decision rights, and accountabilities for the effective management of information assets.” The continued and apparent exponential growth of data means that data governance is no longer optional. Additionally, data governance—especially reversibility and sovereignty—is trending in Europe, with many companies pushing for more software interoperability.

Given this short summary of major construction industry trends, as well as the documented disconnects that exist in today’s AEC/EPC-O/O lifecycle, the need for more holistic and end-to-end lifecycle enabling solutions supporting the construction industry should be clear. So, the only question should be... What are the main solution requirements that must be enabled to close the gap?

# CIMdata PLM Industry Summary

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## How to Close the Gap: Main Solution Requirements

The first, and perhaps the most critical, solution requirement is the ability to define and enable an accurate digital twin. CIMdata describes a digital twin to be “a virtual representation (i.e., digital surrogate) of a physical asset or collection of physical assets (i.e., physical twin) that exploits data flow to/from the associated physical asset(s).” In general, BIM, as described above, provides the data and process management for the project-orient information management in the context of a physical asset. Of course, a digital twin without the connection to a digital thread is an orphan, disconnected and with a high-likelihood of being out of date. Asset management and data governance provide and keep current the digital thread’s functional requirements, from concept/project initiation to the O/O phases, across the end-to-end asset lifespan, focusing well beyond the construction deliverables. Finally, IoT sensors provide the dynamic view of the digital twin, updating the “as-operated/maintained” live data from hundreds, if not thousands, of geolocated sensors.

As with any digital transformation, data/information structures (or models) are required. The digital twin can be thought of as a data structure or model, but to manage physical assets for their lifecycle you also need to enable multiple geographic and functional information models. Geographic models help provide systemic impact analysis. For example, a failure in a water treatment pump, which is part of an industrial system model, can cause a local water treatment plant to shut down because redundancy was not prioritized at the facility level of the model. It can also trigger preventive maintenance some distance away in a similar plant because a pump from the same supplier is installed at that water treatment facility. Functional models also provide systemic impact analysis support. Using enterprise architecture methodologies, such as CIMdata’s Enterprise Application Architecture™, to relate use stories to systems to parts to maintenance history can help detect potential built asset pitfalls or weaknesses. These models, if implemented correctly, can result in significant lifecycle cost savings for the AEC/EPC, as well as the O/O. The ISO 81346 standard is getting traction to deploy global referencing systems across functional/spatial/system data structures. Pulling these data modeling and management capabilities together provides a powerful and integrated asset management solution, well beyond your typical BIM solution. Such a solution will close the gaps (e.g., relating input BIM models from construction, remodeling, and maintenance projects to the broader digital asset of the built and operating facility). This solution would also deliver significant value by reducing data re-entry and duplication, as well as providing more actionable insight and asset understanding due to aligned, powerful, and accurate conceptual models based on digital thread enabled digital twins. Eurostep, a software and service provider that is based in Sweden, provides one such solution.

Eurostep is well known in the PLM industry for providing software and consulting services on a global basis that focus on the application and leverage of various “STandard for the Exchange of Product model data (STEP) standards, such as ISO 10303-239 (AP 239—the standard that defines “Product Life Cycle Support”). Eurostep’s ShareSpace and its iAIM solutions leverage this industry neutral data representation.

### iAIM: integrated Asset Information Management

Understanding the shortcomings of many of today’s construction industry solutions, which either focus on the construction or project phase, or those that provide asset management support, are generally described as Project Information Management (PIM) or Asset Information Management (AIM) solutions. Additionally, concepts like Common Data Environment (CDE) (see Figure 3) are used but they are typically limited to PIM. All of this pointed to the need for a more integrated asset information management solution. Eurostep’s ShareSpace integrated Asset Information Management (iAIM) solution has been designed to solve the problem of sharing asset data between disciplines across the

# CIMdata PLM Industry Summary

entire AEC/EPC-O/O industry and lifecycle. Like other Eurostep solutions, ShareAspace iAIM is compliant with a number of important data and process standards. For example, it supports spatial and functional structures for both openBIM standards (i.e., IFC and BCF) and closedBIM popular formats from Autodesk and soon Bentley.

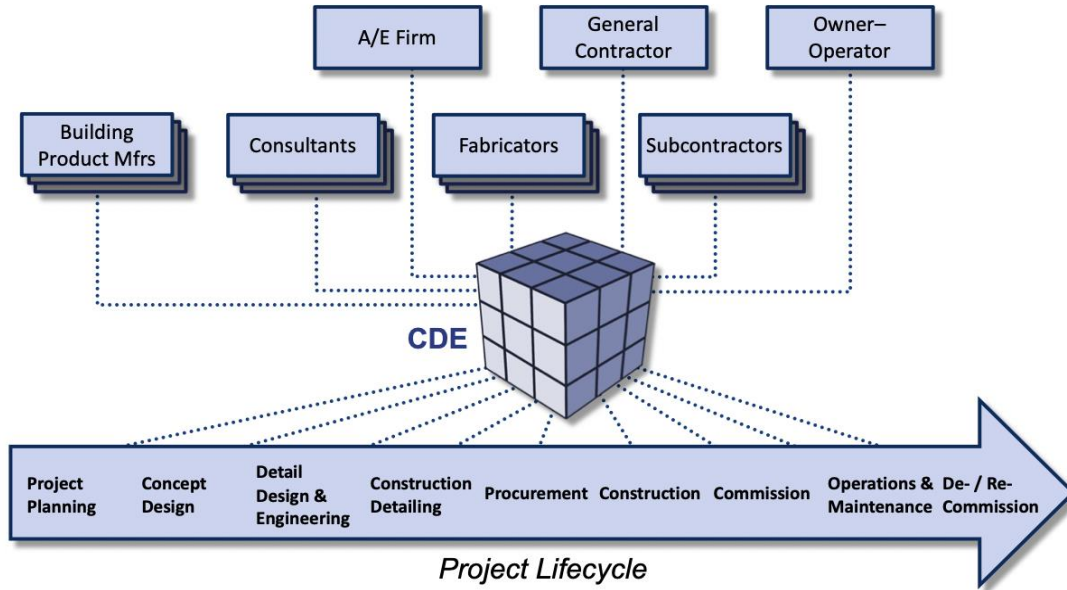
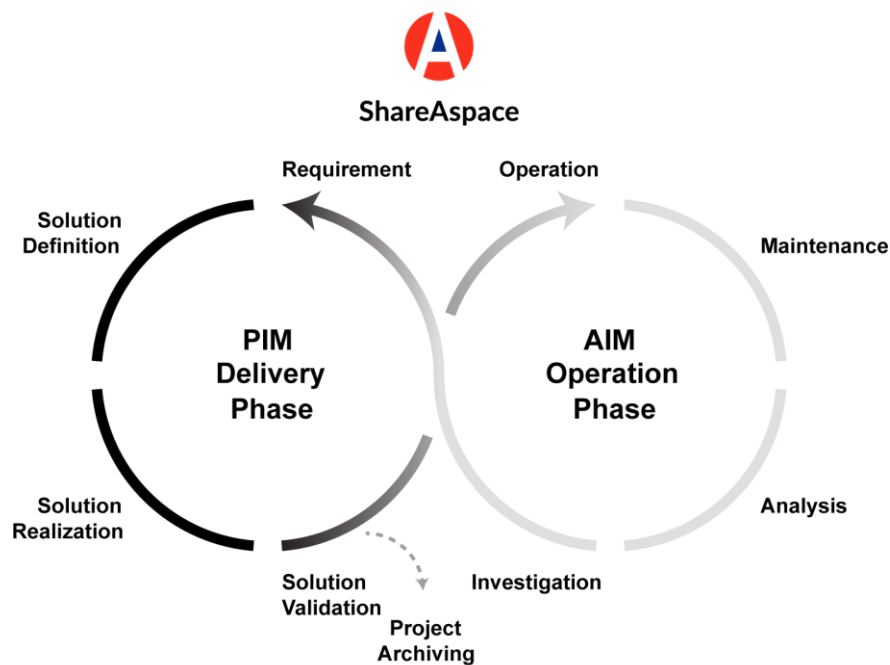


Figure 3—The Common Data Environment (British Standards Institute PAS 1192-2:2013 and UK Construction Industry Council)

ShareAspace iAIM provides synchronized PIM and AIM, using open standards such as PLCS (AP 239) to handle the lifecycle management of configured data (see Figure 4).



# CIMdata PLM Industry Summary

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*Figure 4—Lifecycle Management of Configured Data  
(Courtesy of Eurostep)*

Supporting PLCS has been a cornerstone for Eurostep for many years, as most other standards offer only limited views for built assets, and usually only for specific stages of an asset's lifecycle. ShareAspace iAIM enables the online alignment between data models. For instance, an IoT sensor alert from a piece of equipment can trigger a BCF ticket update relating the alert to the related BIM object, including history for other surrounding BIM objects. Additionally, ShareAspace iAIM provides a strong library of organized data concepts, including the support of several out-of-the-box open standards like IFC or ISO 81346 (a STEP standard that defines the rules for reference designation systems (RDS) focused on industrial systems, installations and equipment, and industrial products). Data stewardship is also addressed by the solution from a model-based point of view rather than "connecting pipes" like the current approach from Extract, Transform, and Load (ETL) software.

Eurostep reports that they have designed ShareAspace iAIM to enable the highest BIM level (i.e., Level 3, setting the information unit at the object level instead of the file level). It is a best-of-breed software solution designed specifically to manage common data for sharing and re-use across the construction lifecycle—from project concept to asset decommissioning. ShareAspace iAIM has been designed to connect different CDEs for a consolidated view of an asset's digital twin, as well as to navigate an asset's information and its models in many ways, supporting data-driven processes and delivering actionable insight. ShareAspace iAIM also provides timely access for all stakeholders of a project to accurate information for fast and precise incident response. Also, it should be noted that ShareAspace iAIM's secure data access approach allows external organizations to access data based on data ownership and access rules. Critical for the construction industry where dozens of organizations need to collaborate to design, build, and maintain an asset for its entire lifecycle.

Finally, iAIM, being enabled on Eurostep's ShareAspace platform, provides a proven and performance minded solution. Its graph database supports complex queries with no performance loss, and its development is based on automatic REST API publication of the data model and a versatile graphical user interface (GUI). Finally, Eurostep offers an Azure cloud hosted option or on-premises deployment.

## Conclusion

Asset intensive industries have long struggled with a complex value chain where no one organization has complete end-to-end control of any given physical asset. AEC/EPC firms are typically only responsible for designing, building, and handing over a facility to an O/O. It is these O/Os who are ultimately responsible for the rest of the lifecycle of the physical asset, which can span many decades. Unfortunately, AEC/EPC firms often have difficulty delivering a complete and accurate information model to their O/Os, missing clear guidance from "data stewards." Without an overarching data model and resulting digital twin of a physical asset, these O/Os, in turn, struggle to maintain their facilities making enhancing and modernizing difficult and more expensive. All of this points to the need for holistic and standards-based solutions that integrate processes across the end-to-end asset value chain, as well as manage the resulting data that are critical in solving major lifecycle issues.

Eurostep's ShareAspace iAIM solution has been designed to solve the problem of sharing asset data between disciplines across the entire AEC/EPC-O/O industry and lifecycle. Like other Eurostep solutions, ShareAspace iAIM is compliant with a number of important data and process standards. Eurostep has leveraged its extensive experience solving similar long-asset-life collaboration and data management issues to create and deliver an integrated asset information management solution based on their ShareAspace solution offering. Being enabled on the ShareAspace platform, ShareAspace iAIM provides a proven and performance minded solution that seeks to overcome the lifecycle data challenges

# CIMdata PLM Industry Summary

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rampant across the AEC/EPC-O/O industry. This solution should be considered by those who want to overcome the issues commonly found in the AEC/EPC-O/O value chain.

## ***Creating Amazing Moments of Service - IFS Unleashed 2022 - a CIMdata Commentary***

3 November 2022

*Key takeaways:*

- IFS Unleashed 2022 brought together IFS and its customers in person for the first time since 2019.
- The company has transformed from a regional, mid-market ERP player to a global enterprise software dynamo that is winning larger and larger customers.
- Their customers cite their technology AND their corporate culture as key buying decision criteria.
- IFS' enhanced go-to-market capabilities will help drive continued strong growth.

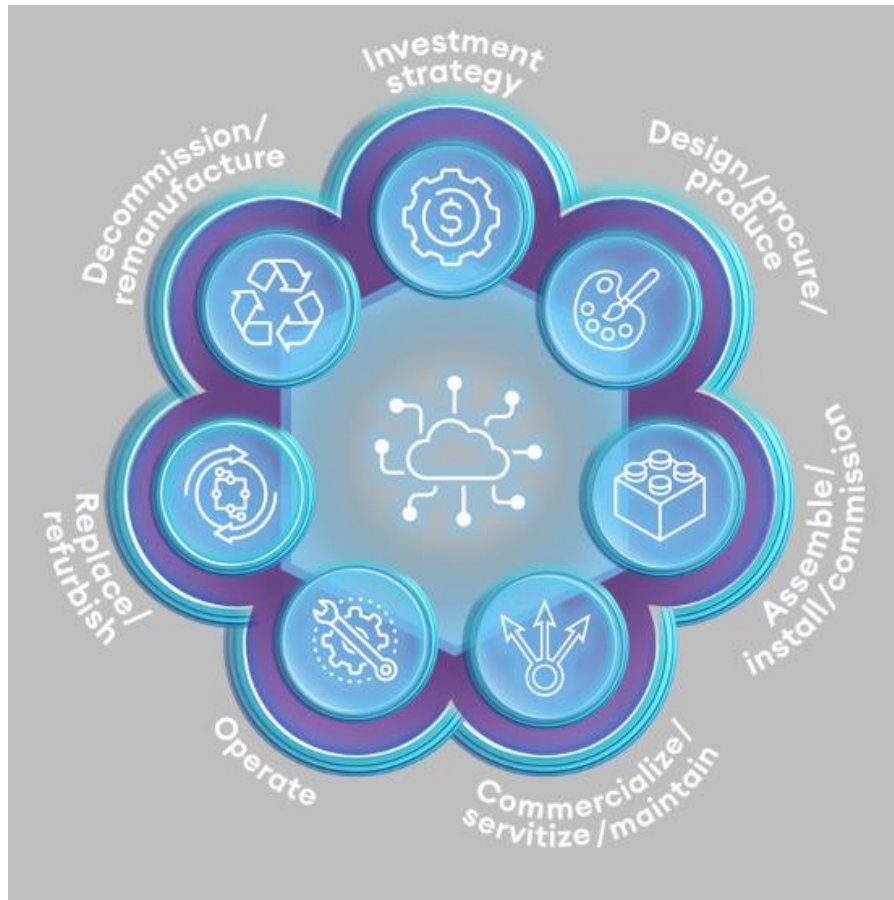
CIMdata had the pleasure of attending IFS Unleashed 2022, the IFS user conference, in Miami Beach, FL on October 10-13, 2022. For IFS, this was a return to an in-person event for the first time since 2019, and approximately 1,500 attendees filled the halls, exhibit space, and meeting rooms at the Miami Beach Convention Center.[\[1\]](#)

During his keynote, Mr. Darren Roos, IFS' CEO, harkened back to the company's humble roots some 30 years before, with the founders camped in a tent outside a Swedish customer. When Mr. Roos arrived in April 2018, the company was primarily known as a European mid-market enterprise resource planning (ERP) solution provider. Fast forward to today, when the company will soon hit \$1 billion in annual revenues, and is a global leader in field service management (FSM), enterprise asset management (EAM), and in the top three in ERP. The company introduced the notion of the "moment of service" in 2021 and discussed their progress at a virtual analyst event in February 2022.[\[2\]](#) The sessions at IFS Unleashed provided more detail on their strategy, offerings, and progress to date. They also used a new infographic, shown in Figure 1, that lays out their support for the full product lifecycle.

During a media and analysts session on IFS' strategy and direction, Mr. Roos claimed that IFS continues to win larger customers, something evident in the IFS Unleashed sessions. As noted earlier, IFS is a leader in FSM and EAM, and some customers pick IFS because of those solutions. Mr. Roos emphasized that once customers get value from one IFS solution, they are more open to discuss expanding to other IFS offerings. Mr. Roos stated that IFS Cloud runs off a common database and data model, and offers the same user experience (UX), smoothing the path for customers. This "land and expand" approach can be very successful and benefits from IFS' cultural strengths that bond them with their customers.

Their legacy product, IFS Applications, was always "composable," with building block modules that could be readily combined to meet specific customer needs and use cases. In 2014, they announced the availability of IFS Applications on the Microsoft Azure cloud.[\[3\]](#) Since then, the company has focused on rewriting their core applications and bringing their many acquisitions into the fold in their cloud-based offering, IFS Cloud, announced in 2021.[\[4\]](#) Mr. Christian Pedersen, IFS' Chief Product Officer, claimed that IFS Cloud has grown to over 400,000 users in the 18 months since its launch.

# CIMdata PLM Industry Summary



*Figure 1—IFS Support for the Full Product and Asset Lifecycle  
(Courtesy of IFS)*

IFS focuses their offerings on a set of core industries: Aerospace & Defense (A&D); Service Industries; Energy, Utilities & Resources; Telecom; Manufacturing; and Construction & Engineering. Mr. Pedersen highlighted their advancements around digital twins, contextual intelligence, augmented reality/mixed reality (AR/MR), automation and robotics, and advanced simulation and optimization. According to Mr. Pedersen, everything in IFS Cloud is application programming interface (API) enabled and is how IFS itself communicates with their back-end software capabilities. Those APIs are available to customers, partners, and others who want to enhance their IFS Cloud implementation. This is a common approach that can offer significant benefits if those APIs are indeed open and span the complete application and its related data. Some PLM solution providers claim open APIs and offer something less than that in practice. Based on the information provided at the event, IFS seems to be practicing what they preach for the benefit of their customers. The company provides monthly service updates and 2 major functional releases each year. He said the company launched 503 new capabilities in 2021 and plans 684 more in 2022. They also announced new manufacturing execution system (MES) functionality, which is an important addition from the perspective of the digital thread and its continuity. ERP captures what was planned for manufacture while MES can document what was actually made, key inputs for users of their FSM, EAM, and MRO capabilities.

Mr. Pedersen listed their perceived differentiators: industry depth, one single product, embedded innovation, and the same solution available both on the cloud and on-premises. Their cloud-based offerings help their customers remain “evergreen,” making it easy to stay up to date with the latest

# CIMdata PLM Industry Summary

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innovations from IFS. This is a major selling point for many cloud providers and, based on the customer presentations at the event it is working for their many IFS customers.

Jotun, a Norwegian marine and industrial coatings company, spoke in several conference sessions. They have been with IFS since 2005 and, according to Mr. Trond Aune, the Jotun Group ERP manager, chose them not for their technology but for their people. In our industrial consulting work, CIMdata often counsels our clients to consider cultural fit in their technology decisions and Jotun is a great example. Mr. Aune described their journey since 2005 and how his company always considered other solution providers when making decisions about staying with IFS. When using the on-premises version of IFS Applications, Jotun could not adopt new IFS capabilities because they, like many other industrial firms, were far behind the latest IFS Applications release. Jotun implemented one version in 2007 and did not update it until 2018 and Mr. Aune wondered aloud just how much opportunity they lost by delaying their upgrade. They recently decided to go evergreen with IFS Cloud. Mr. Aune anticipates the company will not upgrade twice a year, perhaps sticking to an annual upgrade cadence. He claimed that he always had executive sponsorship for his work with IFS, but now they are getting pull “from the ranks” who have seen how IFS can help deliver those “amazing moments of service” that Mr. Roos mentioned in his keynote. In CIMdata’s experience, support from above and below is always beneficial, but it speaks volumes that users can see the benefits from using IFS Cloud and are making their voices heard to support its implementation.

In a later session, Mr. Pedersen spoke about a topic arriving like a “freight train:” environment, social, and governance (ESG). CIMdata has written about the importance of PLM and other enterprise applications in supporting this crucial requirement. Mr. Pedersen emphasized that customers used to care about cost and recently added a focus on experience (both user and customer). Now the environment is on the list, with new European Union regulations leaving companies no option but compliance. Today, a lot of reporting is manual, with many often-competing standards. IFS plans to make it easy for other applications to consume IFS Cloud-managed information and Mr. Pedersen hopes that the reverse—ready support from other application providers—will also be true.

At their Virtual Analyst event in February 2022, IFS stated their intention to leverage 3D visualization more broadly as part of their application landscape. Their booth on the IFS Unleashed exhibit floor included a prototype, showing a 3D rendering as part of the item master. In a 1-on-1 meeting with Mr. Bas de Vos, Vice President of IFS Labs, their research arm, he spoke about using 3D as part of the user experience, overlaying enterprise data on the models, in effect using them as the user interface. This approach is used by other firms in the PLM space, most notably Dassault Systèmes in their 3DEXPERIENCE platform, and CIMdata agrees that it can help provide the right context for users to understand the data being presented. They also plan to implement 3D work instructions, a great fit with their FSM and EAM offerings. Mr. de Vos said IFS was considering different visualization engines, all known to CIMdata, that could be integrated with their platform. The company expects to deliver commercial functionality in IFS Cloud in 2023.

IFS has also invested significantly in customer success during Mr. Roos’ tenure. Ms. Cathie Hall, IFS’ Senior VP, Product Experience, spoke about “frictionless time to value,” based in part on their extensive review of customer engagements. Ms. Hall said IFS analyzed thousands of projects, examining the various enterprise architecture models employed to better understand where value is created within their companies. She listed six “points of friction” in a customers’ digital transformation journeys:

1. Transitioning from marketing speak to high level information
2. Determining how to achieve value

3. Translating value into a clear scope
4. Getting a demonstration
5. Handover from demo to solution
6. Ensuring value is continuously captured

Ms. Hall claimed that step 5, the handover, is the highest cost point of friction, which makes sense given this is where the implementation “rubber” hits the road with the customer. Similar to other solution providers, IFS has its own business value assessment methodology to baseline their customers, and to help develop customer “success plans” to guide their transformation. Much of this discussion echoed the approach of Infor, one of IFS’ competitors that has also bet big on the cloud and delivers by industry. Shortening time to value is critical and these approaches have proved their worth in many solution providers. IFS’ approach is solid and their early results, claiming a 22% improvement in time to value for example, is a good start.

This is but a small window into the content offered at IFS Unleashed. The energy was high, as customers, IFS, and their many partners were excited to be back together in person. Miami Beach offered a gorgeous albeit steamy location for attendees to enjoy. Clearly the group was unleashed, at least for these few days. Unleashed also describes IFS as a company. Their offerings have converged in IFS Cloud and the market is clearly responding. And IFS has greatly expanded their ability to reach broader swaths of the market during Mr. Roos’ tenure. When IFS did most services in-house, they were capacity constrained. New implementations took precedence over upgrades. Now that they have added 100s of partners they can serve all comers and with IFS Cloud their growing installed base can be evergreen and rapidly take advantage of the growing capabilities the platform can offer. Then it will be the customers that are unleashed, using IFS Cloud to deliver amazing moments of service to their clientele.

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[1] Travel and/or other expenses related to this commentary were provided by IFS.

[2] <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/17961-optimizing-the-moment-of-service-2022-ifs-virtual-industry-analyst-forum-commentary>

[3] <https://www.businesswire.com/news/home/20140930005471/en/IFS-Launches-Global-Cloud-Solution-on-Microsoft-Azure>

[4] <https://www.ifs.com/news/product/ifs-launches-ifs-cloud>

## Acquisitions

### ***CAPGEMINI SIGNS AGREEMENT TO ACQUIRE QUANTMETRY TO ENRICH ITS AI AND DATA CONSULTING CAPABILITIES IN FRANCE***

28 October 2022

**Capgemini announced that it has entered into a share purchase agreement (SPA) to acquire Quantmetry, an independent consulting firm specializing in mathematical data modelling and artificial intelligence (AI) technological solutions. Quantmetry will strengthen the capabilities of Capgemini in France to deliver data transformation at scale and in the development of innovative, high-impact products and services powered by trusted AI. It will also enhance services that enable intelligent industry and major business and technological transformations. The transaction is expected to be completed in the coming days.**

# CIMdata PLM Industry Summary

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Created in 2011 in Paris, Quantmetry has built a reputation with major French players in manufacturing, energy, retail, consumer goods and insurance. The acquisition of Quantmetry will deepen the value creation expertise of Capgemini Invent, the digital innovation, design and transformation brand of the Capgemini Group, as well as increase its capacity to execute in France. It will also strengthen Capgemini's leadership position in the AI and data consulting and transformation market.

*"A significant part of our business is already specifically in this area,"* says Mathieu Dougados, Managing Director, Capgemini Invent in France. *"Quantmetry brings to Capgemini Invent specialist skills coupled with business and sector expertise that are highly complementary to those already existing within the Group, with very promising synergies. Our teams share the same values and the same ambition to carry out meaningful projects. This new team will enable us to be even stronger in sustainability services notably on our Data for Net Zero offering. With Quantmetry, we are strengthening our ability to deliver high-impact transformation programs."*

*"We look forward to being part of Capgemini and continuing to develop our expertise and values within the Group, as well as growing our people and delivering exemplary and impactful projects to our clients,"* adds Jeremy Harroch, CEO and Founder of Quantmetry. *"Our consultants, engineers and researchers will be able to put our R&D and machine learning expertise at the center of an ecosystem of excellence. We are committed to promoting the ethical use of mathematics for business decision-making and the common good, in a pioneering spirit."*

## ***Graphisoft to acquire Abvent French and Swiss Archicad business units from AV-Tech Group***

3 November 2022

**Graphisoft, the leading Building Information Modeling (BIM) software solutions developer for architecture and engineering, announced today that it has signed a Sale and Purchase Agreement with AV-Tech Group to acquire Abvent's Archicad business units in France and French-speaking Switzerland. The acquisition is another milestone in Graphisoft's journey as a leading global player in the AEC industry by investing in the growth of two of Europe's most influential markets.**

Abvent has been Graphisoft's valued distributor in France since 1985 and in French-speaking Switzerland since 1991 and has built successful businesses in both countries, offering award-winning software solutions and high-quality support and training to thousands of architects.

"Abvent has built an impressive business based on local market knowledge and deep relationships with users by offering outstanding service and support," said Huw Roberts, Graphisoft CEO. "This acquisition strengthens our position in these already highly successful French-speaking markets by integrating Abvent's many years of deep local experience with Graphisoft's global go-to-market expertise and best practices to add even more value for architects in the region," he added.

"This is exciting news for both companies," said Xavier Soule, AV-Tech Group CEO. "We are proud of the work we have done in France and Switzerland to grow the use of BIM and are confident that our customers will greatly benefit from Graphisoft's hands-on approach to support, services, and long-term vision and mission in the AEC industry."

The deal is expected to close in the next several weeks when Abvent's Archicad business units — including market relationships, employees, and assets — will become part of Graphisoft. The non-Archicad Abvent businesses will be moved into a separate legal entity. Artlantis, BIMoffice, Linkioo, and Render[in] are not part of the transaction, and these software solutions will continue uninterrupted from AV-Tech.

# CIMdata PLM Industry Summary

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"Graphisoft is committed to delivering the highest quality solutions, services, and support for all our customers worldwide. This acquisition will enable us to deliver on our commitment to our French-speaking customers and best serve these important markets in the future," Roberts added.

## ***Rockwell Automation Completes Acquisition of CUBIC***

31 October 2022

Rockwell Automation, Inc., the world's largest company dedicated to industrial automation and digital transformation, announced that it has completed the acquisition of CUBIC, a company that specializes in modular systems for the construction of electrical panels.

CUBIC, founded in 1973, serves fast-growing industries such as renewable energy, data centers, and infrastructure, and is headquartered in Brønderslev, Denmark. CUBIC will be reported as part of Rockwell's Power Control Business in the Intelligent Devices operating segment.

"This acquisition strengthens our portfolio of leading intelligent motor control technologies. We are excited to welcome the CUBIC team with their expertise in structural design, power systems, and global standards to Rockwell," said Bob Buttermore, vice president and general manager of Rockwell's Power Control Business. "CUBIC's efficient and flexible modular systems combined with Rockwell's intelligent devices and industry expertise will benefit customers by offering faster time to market, enabling broader plant-wide applications for intelligent motor control, and generating smart data to increase sustainability and productivity."

CUBIC's established partner model will allow Rockwell to expand its partner network for intelligent motor control offerings in Asia, Europe, and Latin America. Additionally, CUBIC will broaden Rockwell's market access in renewable energy and data center solutions.

"Rockwell's global leadership in industrial automation make it a perfect fit for CUBIC," said Jacob Moller Knudsen, CEO of CUBIC. "The combined portfolio will be compelling to new customers and partners in hybrid and process industries."

## ***Siemens expands industry-leading integrated circuit verification portfolio with acquisition of Avery Design Systems***

2 November 2022

Siemens Digital Industries Software today announced that it has signed an agreement to acquire Avery Design Systems, Inc., the leading simulation-independent verification IP supplier, headquartered in Tewksbury, MA, USA. Siemens plans to add Avery's technology to the Siemens Xcelerator portfolio as part of its industry-leading suite of electronic design automation (EDA) integrated circuit (IC) verification offerings.

"The verification and verification IP markets continue to undergo major paradigm shifts," said Joseph Sawicki, Executive Vice President, IC-EDA, Siemens Digital Industries Software. "Increasing SoC complexity, demand for new protocols and standards, and broadening use of verification IP use cases present customers with new challenges relating to the verification of sophisticated, next-generation IC designs. The acquisition of Avery further extends Siemens' leadership in the verification space, adding Avery's impressive Verification Protocol and Compliance Test Suite offerings, critical verification IP market understanding and know-how, and eminent R&D talent. This can enhance Siemens' offerings across mainstream verification IP segments, while further extending Siemens verification solutions into areas such as High Performance Computing, Edge, Networking, and 3D ICs."

“Customers need a complete protocol portfolio for their applications and verification IP available as soon as standards are released, as well as compliance testing solutions that can help reduce risk and help enhance the correctness of their protocols,” said Chilai Huang, President and CEO, Avery Design Systems. “The Avery offerings enable this, helping system and SoC design teams to achieve dramatic functional verification productivity improvements. Being part of Siemens also allows growth opportunities for the business, with the combination of Avery’s products and Siemens’ Questa verification IP offerings enabling continued support of verification engineers across the entire spectrum of simulation solutions.”

Siemens’ acquisition of Avery Design Systems is subject to closing conditions and is anticipated to close in the first quarter of fiscal year 2023. Terms of the transaction were not disclosed.

## Company News

### ***Altair Appoints Ravi Kunju to Chief Product and Strategy Officer***

2 November 2022

Altair, a global leader in computational science and artificial intelligence (AI), announced that Ravi Kunju has been named Altair's chief product and strategy officer.

In this role, Kunju will be responsible for the strategy and vision of Altair products, which includes facilitating the development, sales, pricing, and marketing of Altair's solutions for industry verticals and business lines.

"For nearly 25 years, Ravi has been an indispensable member in so many areas of our organization, and I am certain that he will continue to play a vital role in this new position," said James R. Scapa, founder and chief executive officer, Altair. "As we compete fiercely across the globe, it is imperative to go to market with strategic solutions that help customers solve their toughest problems. We need to keep our foot on the pedal in thoughtful innovation that moves the needle and solves problems that might not even exist yet."

Prior to this role, Kunju has served in several leadership roles within Altair, including senior vice president of business strategy across all business lines, vice president of strategy for enterprise computing, managing director of enterprise computing for the Americas region, and managing director of the U.S. North Central region.

Kunju holds a bachelor's degree in mechanical engineering from Osmania University in Hyderabad, India; a master's degree in mechanical engineering from Wayne State University; and a master's in business administration (MBA) from the University of Michigan's Ross School of Business.

### ***Digital Twin Consortium Foundational Paper Helps Organizations Assure Trustworthiness in Dynamic Systems***

25 October 2022

Digital Twin Consortium® (DTC) published a foundational paper entitled Assuring Trustworthiness in Dynamic Systems Using Digital Twins and Trust Vectors. The paper provides guidance to help organizations design digital twins securely and safely for digital transformation. It presents an understandable and interoperable model for digital twins’ security and safety assurance that satisfies all stakeholders: technical, business, and regulatory.

“Many initiatives and standards for security exist, but they don’t consider all five trustworthiness

# CIMdata PLM Industry Summary

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characteristics – safety, security, privacy, resilience, and reliability – and that can result in losses,” said Anto Budiardjo, CEO of Padi, Inc. “Similarly, safety standards for mechanical systems are mature and respected but are not necessarily able to address all concerns with dynamic and complex software-based systems. To use digital twins successfully, operators must have visibility and control over all five trustworthiness characteristics.”

“Traditionally, organizations have relied upon static security and safety assurance cases, which aren’t suitable in a digital-first world,” said Jon Geater, Chief Product & Technology Officer, and Co-Founder at RKVST, Inc. “Things move too fast, supply chains are too deep, and systems are too complex for manual checklists, outdated standards, and annual audits. Organizations must account for a constantly changing environment, evolving threat landscapes, and rapid decision-making.”

“Digital twins are the ideal starting point to provide a means to achieve trustworthiness for systems that require continuous decisions in changing situations,” said Detlev Richter, Vice President TÜV SÜD Product Service GmbH. “Time-critical assurance and decision-making need a flexible system that can make decisions in real-time to prevent vulnerable problems resulting from static measures while reaching new productivity levels. Digital twins with trust vectors provide a means to achieve this.”

Trustworthiness can become part of the digital twin architecture when organizations build assessments of changes within the lifecycle into digital-twin capabilities. Then, asset owners can make changes to machines or configurations that are safe and that do not generate an unacceptably high downtime during validation. Digital twins can achieve adaptability, flexibility, and uptime in production environments.

“Organizations must implement trustworthiness processes and technologies to support business operations and achieve business outcomes with less risk and more confidence,” said Frederick Hirsch, independent consultant, and member of the Industry IoT Consortium/DTC Security & Trustworthiness Working Group. “We must move to a world of dynamic assurance cases where standards are outcome-based, and target processes and system properties change according to need.”

## ***DXC-Luxoft Opens New Italy HQ and Automotive Center of Excellence in Turin***

27 October 2022

Luxoft, a DXC Technology company, has opened a new Italian headquarters and Automotive Center of Excellence in Turin. As part of the investment worth over \$5 million USD (€4.4 million), Luxoft plans to hire 400 software engineers over the next two years. The move is designed to support Italian automotive companies with cutting edge technology talent and drive new revenue streams in the burgeoning area of software-defined vehicles.

With more than 30 years’ experience in the country, DXC already employs over 2000 technology experts across Italy at facilities in Milan, Rome and Bari. By building on this presence and adding to the 200 software engineers it already has in the country, Luxoft is growing its capabilities to partner with Italian car manufacturers and OEMs as they tackle challenges such as data analytics, application management, and business process optimization.

Luxoft selected Turin based on its access to local skills, its proximity to key customers and partners, and its important position in Italy’s automotive ecosystem. It forms part of a network of Luxoft facilities focused on digital mobility solutions across Europe and around the world.

Inaugurated today at a ceremony with Luxoft and DXC executives, government officials and leaders from automotive companies, Luxoft’s new Italy HQ and Automotive Center of Excellence are housed in Turin’s Lingotto building, previously a car factory, and today a symbol of Italy’s automotive industry.

## Quotes

“The move to software-defined vehicles is a revolutionary and unstoppable force in today’s automotive industry. In this new business model, automakers are able to engage customers directly with digital services, while at the same time reducing complexity and costs. Operating from Turin allows us to be part of one of the most important automotive hubs in the world where there is expertise, research capacity and an ecosystem of companies all working in pursuit of the vehicle of the future.”

**Luz G. Mauch, EVP Automotive Luxoft**

"DXC has three decades' experience supporting leading Italian organizations across many areas of national importance – from manufacturing, to energy, finance and government. With the launch of Luxoft's cutting-edge technology facility in the city of Turin, we are now boosting Italy's automotive sector and confirming our commitment to Italian innovation."

**Eugenio Maria Bonomi, Managing Director, DXC Technology Italy**

“The metropolitan city of Turin is focused on the economic development of the region. The automotive sector is a key part of that. We aim to support innovation across technology and society, capable of combining a vision of the future with the development of skills in our region. We are excited about Luxoft's investment and will follow it with interest.”

**Sonia Cambursano, Councilor of the Metropolitan City of Turin**

## ***Hexagon and Raytheon Technologies developing simulation tool to improve 3D printing build quality***

31 October 2022

Hexagon and Raytheon Technologies have partnered to deliver a simulation tool that will enable evaluation and optimisation of metal additive manufacturing (AM) processes through the prediction of thermal history and defects at the laser path and powder layer scale.

Combining technologies from Hexagon's Manufacturing Intelligence division and Raytheon Technologies' Pratt and Whitney business, the new software will predict defects before the expensive and time-consuming printing process begins. This analysis will help designers and engineers evaluate the print outcome and test combinations of materials, geometries, and print processes.

“We've partnered with Raytheon Technologies to deliver an intuitive and accessible tool that will help engineers quickly predict and mitigate risks,” said Jeff Robertson, Hexagon's director of global business development. “The ability to evaluate full laser powder bed fusion (L-PBF) parts on the meso-scale will reduce the effort to achieve part certification and thereby support industrialisation of metal 3D printing.”

The software will be made available to a range of companies engaged in additive manufacturing and will be complementary to Hexagon's existing Simufact Additive tool. The similarity to the existing user interface will allow easy integration into existing manufacturing processes by users without the need for extensive training.

“By combining our additive manufacturing expertise with Hexagon's we're bringing a solution to market that helps manufacturers with all levels of experience make better products with greater efficiency,” said David Furrer, Pratt & Whitney senior fellow for materials and processes.

## ***Honeywell And Aramco Announce Joint Venture For New Intelligent Operations Software Solution***

1 November 2022

Honeywell and Aramco have announced the signing of a joint venture (JV) agreement to provide a set of end-to-end business process automation solutions, under the Aramco Namaat Industrial Investments Program. The technology solutions can be offered to a wide range of industrial sectors to help maximize profitability, improve productivity, sustainability and operational excellence, on a global scale. The new JV offerings will leverage Aramco's Plant.Digital platform (formerly Integrated Manufacturing Operations Management System – iMOMS) as well as Honeywell Connected Enterprise's technology development and industrial digital solutions implementation experience.

The JV aims to equip industrial companies with the tools, processes and practices they need to run plant operations more effectively and accelerate sustainable digital transformation and operational excellence initiatives. It will emphasize the development, integration, and deployment of Operations Technology (OT) solutions and Digital Transformation consulting.

"This JV agreement with Honeywell is expected to bring new jobs to the market, contribute to economic growth and serves as another way in which Aramco continues to pursue its Digital Transformation program as part of its evolution to become the world's leading digitalized energy corporation," said Ahmad Al Sa'adi, SVP Technical Services at Aramco.

The JV offering combines Aramco's Plant.Digital platform and its technical and domain knowledge in end-to-end plant operations with Honeywell's global software development, systems integration capabilities and commercialization expertise to help industrial companies become more sustainable while maximizing yield, reducing downtime, improving plant productivity and increasing profit.

"The powerful combination of Aramco's business, operations, technology and Plant.Digital delivery expertise, coupled with Honeywell's proven experience in industrial software and big data analytics solutions, as well as our long tenure in the Kingdom, is anticipated to unlock tremendous value for the industry," said Kevin Dehoff, president and CEO, Honeywell Connected Enterprise.

The new JV is expected to create more than 300 jobs in Saudi Arabia within five years, supporting the Aramco Namaat Industrial Investments Program, which is designed to boost Saudi economic and workforce development.

The collaboration highlights the efforts of Aramco and Honeywell to support Saudi Vision 2030 – the national roadmap to transform the Kingdom into an industrial powerhouse and a global logistics hub. The vision's focus is on developing high-tech and knowledge-based careers that add significant value to the Saudi economy to compete globally.

Honeywell and Aramco have partnered for more than 60 years to drive Saudi Arabia's industrial leadership forward through technology and innovation. This JV is the latest milestone in that journey, building on an MoU signed between Honeywell and Aramco in September 2021 to explore the co-development and commercialization of a next-generation digital technology solution for industrial companies. Closing of the joint venture is subject to certain regulatory approvals and other customary closing conditions. The companies also signed an MoU in 2017 to explore the benefits of Honeywell's Industrial Internet of Things (IIoT) offering in support of Saudi Vision 2030.

## ***L&T Technology Services inaugurates Engineering R&D Center in Toronto, Canada***

2 November 2022

L&T Technology Services Limited, a leading global pure-play engineering services company, announced the unveiling of its Engineering Research & Development (ER&D) Center in Toronto, Ontario (Canada), marking its third nearshore global design center in two quarters.

The ER&D Center in Toronto will initially focus on developing digital solutions for the transportation sector including railway engineering, for a global aerospace & rail major. The area of specialization would cover rail track defect detection, advanced mobility solutions, digital asset management, digital flyboard, sensors and communications systems.

The center will cater to LTTS' Canada-based clients for developing cutting-edge solutions in Digital Products and also act as a nearshore site for North America-based customers to enable transformative, new-age initiatives in digital engineering.

With plans to hire over 100 engineers in the next 18-24 months, the ER&D center is expected to become a focal point to hire local talent and further bolster the region's reputation as a hub for engineering and innovation.

The center was inaugurated by Mr. Amit Chadha, CEO and Managing Director of L&T Technology Services in the presence of Mr. Chris Pogue, CEO, Thales Canada, Mr. Ziad Rizk, COO of Ground Transportation Systems (GTS), Canada, Ms. Apoorva Srivastava, Consul General of India, The Hon. Victor Fedeli, Provincial Minister of Economic Development, Job Creation and Trade of Ontario, and Mr. Alind Saxena, Chief Sales Officer of LTTS.

Speaking on the occasion, **Amit Chadha, Chief Executive Officer & Managing Director, L&T Technology Services** said, *"LTTS is recognized for being the engineering partner of choice for global leaders and developing new-age and sustainable technologies. Through this new ER&D center, our customers in Canada and North America can leverage our cutting-edge technologies and digital products. LTTS is committed to building exciting opportunities in the Canadian business ecosystem, while strategically expanding its North American footprint."*

**Ziad Rizk, Chief Operating Officer, Ground Transportation Systems (GTS), Canada** said, *"With the vision to invest in new-age digital technologies in the railway engineering sector, we are delighted to partner with an ER&D leader like LTTS in Canada. We have over a decade-*

*long partnership with LTTS which is further strengthened with the inauguration of this ER&D Center. Through this partnership, we are confident of continued innovation and providing effective, safe and modern railway capabilities for our customers."*

**The Hon. Victor Fedeli, Ontarios' Minister of Economic Development, Job Creation and Trade,** said, *"The City of Toronto is known to be the fastest growing city in North America due to its thriving technology ecosystem. We are delighted to welcome an industry leader like LTTS into our community and envision technological advancements and development of local talent through their ER&D centre. We look forward to LTTS' participation in helping build economic value in the region, while supporting clients globally."*

**His Excellency Mr. Manish, Acting High Commissioner of India to Canada,** said, *"The inauguration of this ER&D center is a big step towards further strengthening the relations between the two countries and promoting the Canada-India economic corridor. With the dedication to deliver innovative solutions and services to the North American clientele with the use of local resources, LTTS is establishing a strong technological footprint here in the region that is expected to benefit local*

*communities and businesses.”*

Earlier this year, LTTS inaugurated an Engineering Design Centre in Toulouse (France) and an ER&D Centre in Krakow (Poland), as part of its strategic global business expansion plans.

## ***NEW CEO DIRECTOR ROLAND SCHNEIDER TAKES THE HELM AT CENIT SWITZERLAND AG***

31 October 2022

Effective November 1, 2022, Swiss national Roland Schneider will take on new challenges as incoming CEO of CENIT Switzerland AG. In tandem with outgoing CEO Peter Abt, he will head CENIT's Swiss subsidiary, based in Effretikon, until the end of 2022 and then succeed Mr. Abt, who is retiring.

Roland Schneider has more than 30 years of experience as a financial analyst and CFO of various internationally active enterprises. Most recently, he acted as CFO of Romay AG in Oberkulm, and previously in leadership positions at Constellation Group (Canada) as well as Bally AG and Schindler AG.

In commenting on the management change, Peter Schneck, CEO of CENIT, says that “in Roland Schneider, we have gained a highly experienced colleague with excellent business connections in Switzerland – one who will drive our growth strategy forward across all business units of CENIT Switzerland AG. In particular, his experience in the mergers & acquisitions sphere will benefit the inorganic growth of our Swiss subsidiary.”

Axelle Mazé, CENIT CFO, applauds the decision: “Thanks to his outstanding contacts with businesses across Switzerland, Roland Schneider will be able to fully exploit the high potential for organic growth which CENIT sees in Switzerland. I look forward to close and successful collaboration with him.”

## ***PROLIM strengthens its AWS Select Consulting Partner Status***

31 October 2022

PROLIM, a global leader in PLM, IT, IoT Consulting Services, announced that it has strengthened its **Select Consulting Partner** status by achieving AWS Migration Acceleration Program (MAP) competency. MAP is a comprehensive and proven cloud migration program based upon AWS's experience of migrating thousands of enterprise customers to the cloud by leveraging proven three-phased framework (Assess, Mobilize, and Migrate and Modernize).

Achieving this status recognizes PROLIM's ability to help companies deliver fast, secure data across the enterprise, move enterprise CAD, high computing Simulations and PLM applications to the cloud, exponentially increase software quality and development times, and secure that data to meet compliance, privacy, and regulation requirements.

Commenting on the announcement, Ashwini Patil, PROLIM's Vice President IoT and Cloud solutions says she is very excited with the recognition. ‘PROLIM has proven skills in AWS cloud development and operations. With our guidance, our clients use a range of AWS services and tools to design and deploy fully scalable, secure applications that scale up or down based on demand. PROLIM team is very proud that our progress this year has been recognized by AWS’.

“PROLIM as a go to market leader in digital product development and digital manufacturing services, takes immense pride in associating with top technology leaders, market benchmarkers and innovators globally. As a “Select” partner to AWS, we look forward to engage, learn, support and grow business.” says Srinath Koppa, Managing Director of PROLIM India.

# CIMdata PLM Industry Summary

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The AWS Partner Network (APN) is the global partner program for AWS. It is focused on helping APN Partners build successful AWS-based businesses or solutions by providing business, technical, marketing, and go-to-market support.

## ***Revolution in Simulation Welcomes Corvid HPC as its Newest Sponsor***

1 November 2022

The global simulation industry collaboration and technology alliance *Revolution in Simulation*, created to accelerate innovation through the democratization of engineering simulation, announces Corvid HPC ([www.corvidhpc.com](http://www.corvidhpc.com)) as its newest participating sponsor and collaborator.

Corvid HPC is a cloud computing provider with over 15 years of simulation experience solving some of the DoD's toughest challenges. Our engineering team provides one-on-one simulation support to ensure our customers get the most out of high-performance computing. Corvid HPC's user interface is designed to support all scalable engineering simulation codes, tailored for all – from beginners to experts. Corvid HPC leverages our own US-based hardware to provide simple and cost-effective pricing to our customers with no middleman.

Corvid HPC is excited to join the Revolution-in-Simulation community to share unique stories on how companies are leveraging HPC to accelerate the product development process, while complying with data security challenges associated with Aerospace and Defense businesses. Like RevSim, Corvid HPC believes that simulation should be accessible to everyone, and the company's HPC solution and subject matter expertise provides a unique collaborative perspective.

“The demand for broader simulation usage is exploding and each of our sponsors are working to advance and expand the use and value of engineering simulation software by innovating within their market spaces,” said Rev-Sim Director of Partnerships, Mike Nieburg. “We are excited to have Corvid HPC join us demonstrating their revolutionary thought-leadership and technology in a collaborative alliance that benefits all industrial users of engineering simulation.”

Corvid HPC adds its name to a steadily increasing list of participating sponsors that now includes Ansys, Aras, BETA CAE, Cadence, Coreform, Dassault SolidWorks, EASA, ESRD, Future Facilities, Hexagon/MSC, Kinetic Vision, Maya HTT, NAFEMS, nTopology, Ohio Supercomputer Center, OnScale, PASS Suite, PTC, Siemens, SimScale, UberCloud, and VCollab.

## ***Stratasys Makes Strategic Investment in Axial3D***

2 November 2022

Med-tech startup Axial3D has announced the closing of a \$15 million investment round led by a strategic investment of \$10 million from Stratasys Ltd. (NASDAQ: SSYS), a leader in polymer 3D printing solutions. This is Stratasys' first investment in Axial3D. The two companies also will be providing a joint offering to make patient-specific 3D printing solutions for hospitals and medical device manufacturers more accessible so it becomes a mainstream healthcare solution.

Personalized 3D printed anatomic models are used for pre-surgical planning and diagnostic use to improve patient outcomes while shortening time spent in the operating room. They are also used in education and training, and medical device development. Creating a 3D printed model from a patient's scan data normally takes several hours and requires a high level of technical expertise and expensive software licenses. Axial3D's artificial intelligence-powered algorithms enable healthcare providers to segment CT and MRI scans for these models without significant investments in time, specialized skills and large upfront costs.

# CIMdata PLM Industry Summary

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Stratasys is a leading provider of the 3D printers, materials and software for these anatomic models. The company's J850™ Digital Anatomy™ 3D printer enables medical customers to create models that not only accurately represent the appearance of human tissue but are also biomechanically realistic while suturing, cutting, or inserting and deploying medical devices. A range of Stratasys printers and materials have been validated and FDA 510(k) cleared with Axial3D software to produce anatomic models for pre-operative surgical planning and diagnostic use across multiple specialties.

“We are proud to be partnering with Stratasys, and have always believed in their technology and, more importantly, their vision for 3D printing in healthcare,” said Axial3D CEO Roger Johnston. “We believe that to move the industry from early adopters to the mainstream, we need to improve the accessibility of models for healthcare so hospitals and medical device manufacturers can scale their patient-specific programs. Our joint offerings will be the positive, disruptive catalyst that medical 3D printing needs to address 3D printing accessibility.”

Stratasys has estimated the opportunity for medical 3D printing at approximately \$2.8 billion.

“Many of the world's leading hospitals are already benefiting from our MediJet and Digital Anatomy 3D printers for medical models,” said Dr. Yoav Zeif, CEO of Stratasys. “We believe that by working together with Axial3D, we can remove the barriers to entry for the remaining majority of hospitals in many countries around the world, dramatically growing the use of 3D printing in pre-surgical planning so it is truly a standard part of patient care. This is about providing a complete tailored solution for customers that is fast, automated and scalable.”

Axial3D (booth 8209) and Stratasys (booth 8312) will both exhibit and further discuss their shared collaboration plans at the RSNA 2022 annual meeting and tradeshow sponsored by the Radiological Society of North America in Chicago, Nov. 27 through Dec. 1.

## Event News

### ***AVEVA Showcases Role of Digital Technologies in Achieving Zero-Carbon Economy at COP27***

1 November 2022

AVEVA, a global leader in industrial software, driving digital transformation and sustainability, will highlight how digital technologies can support public-private partnerships and unlock innovation to close the implementation gap on climate change at COP27.

The United Nations Climate Change Conference 2022 is being held on November 6-18 in Sharm El Sheikh, Egypt. A sponsor of the parallel Climate Action Innovation Zone, AVEVA believes trusted data-led technologies are essential to decarbonization, driving responsible use of the world's resources and delivering innovative, climate-forward products in the net-zero economy. AVEVA is one of the first 50 companies in the world<sup>1</sup> to have its net-zero commitments validated by the Science Based Targets initiative (SBTi).

AVEVA's presence at COP27 will be led by some of its most prominent climate advocates: Amish Sabharwal, Executive Vice-President – Engineering and Simulation and member of AVEVA's Executive Leadership Team; Lisa Wee, Global Head of Sustainability; and Nayef Bou Chaaya, Vice-President – Middle East, Africa & Turkey.

During a number of thought-provoking sessions at the Sustainable Innovation Forum 2022, being held alongside COP27, the AVEVA executives will use real-life examples to showcase how digital

# CIMdata PLM Industry Summary

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technologies are unlocking opportunities in the net-zero economy.

## Global opportunities in climate change mitigation

Sabharwal will join a plenary panel on November 10. Alongside UN executives, he will seek to explain why climate change mitigation represents our biggest opportunity yet.

“UN data shows that immediate action can halve greenhouse gas emissions (GHG emissions) by 2030 and put us on track to achieving our goal of keeping global temperature increases to 1.5°C above pre-industrial levels. At the same time, we are facing our biggest opportunity yet. Climate change is accelerating the fourth industrial revolution and nowhere is that more obvious than in the communities and industries here in Africa,” Sabharwal said. “The decisions we take at COP27 and beyond will put the global economy on track to building resilient net-zero economies that drive the adaptation and mitigation agenda. Digital technologies are integral to building the new industries and supply chains that will deliver sustainable growth and create new jobs.”

Sabharwal added: “Closing the implementation gap on the world’s ambitious decarbonization commitments presents a major source of economic opportunity for businesses and communities.”

## Move towards sustainability handprint thinking

On November 9, broadcaster Nik Gowing will interview Wee in the context of her role as a climate leader. She will share insights from the frontline of climate change mitigation and offer real-life examples of how AVEVA and its partners are paying it forward by co-innovating climate-responsive technological solutions to help usher in a zero-carbon economy.

“At AVEVA we recognize that we can drive exponential impact through the products we bring to market while supporting our customers on their decarbonization journey,” Wee said. “Now, our thinking has moved beyond measuring and managing our carbon footprint to considering our sustainability handprint. This positive contribution to sustainability through business activities and partnerships is a way of paying it forward to secure a better future for humanity and our planet.”

## Role of partnerships in decarbonization

Also on November 9, Bou Chaaya will amplify the discussion around innovation in the face of climate change in a high-level spotlight session, with case studies of how global organizations are responding to – and taking advantage of - the opportunities arising from the focus on net-zero targets.

“Public-private partnerships can speed up delivery of the next-generation of low-carbon technologies by 2030 and break down silos in the development of new low-emission products to meet the world’s net-zero goals,” Bou Chaaya said. “AVEVA’s expertise has already demonstrated the role of digital technology in developing and scaling green grids and accelerating sustainable development through smart cities and smart water applications. We are convinced of the importance of driving private-sector collaboration on scope 3 upstream and downstream mitigation activities. We believe an open and connected industrial economy based on free-flowing data networks will be essential to hasten and scale up those sectors that are hardest to decarbonize.”

## ***HONEYWELL TO HOST NEXT LEADERSHIP WEBCAST SERIES FEATURING DARIUS ADAMCZYK, GREG LEWIS, VIMAL KAPUR, AND ANNE MADDEN; ANNOUNCES PARTICIPATION AT UPCOMING INVESTOR CONFERENCES***

1 November 2022

Honeywell announced its participation at upcoming investor events in November.

- Doug Wright, president and chief executive officer of Honeywell Building Technologies, will present at the Baird Global Industrial Conference in Chicago, Illinois, on Tuesday, November 8, 2022, from 7:55 a.m. - 8:25 a.m. CST (8:55 a.m. - 9:25 a.m. EST).
- Honeywell's next installment of its live leadership webcast series will feature a roundtable discussion with Darius Adamczyk, chairman and chief executive officer of Honeywell, Greg Lewis, senior vice president and chief financial officer, Vimal Kapur, president and chief operating officer, and Anne Madden, senior vice president and general counsel. The discussion will be moderated by Scott Davis, chairman and chief executive officer of Melius Research, and will take place on Friday, November 18, 2022, from 11:00 a.m. - 11:45 a.m. EST.
- Greg Lewis will also present at the Credit Suisse 10<sup>th</sup> Annual Global Industrials Conference in Palm Beach, Florida, on Wednesday, November 30, 2022, from 8:00 a.m. - 8:35 a.m. EST.

Real-time audio webcasts of the events and any related presentation materials will be available through the Investor Relations section of the company's website ([www.honeywell.com/investor](http://www.honeywell.com/investor)), where replays of the webcasts will be available for at least 30 days following the events.

## ***PTC to Host Virtual Investor Event on Thursday, November 17th, 2022 and Participate in Upcoming Investor Conferences***

27 October 2022

[PTC](#) announced that it will host a virtual investor meeting on Thursday, November 17<sup>th</sup>, 2022 from 10:00 am to 12:00 pm (ET). Senior management will discuss PTC's strategy and outlook. The event will include a question and answer session for investors.

**What:** PTC FY23 Investor Day

**When:** Wednesday, November 17<sup>th</sup>, 2022 at 10am ET

**Webcast:** Register [HERE](#)

PTC will participate in the following conferences this December. Please visit the [Events & Presentations](#) page of the Investor Relations section on [PTC.com](http://PTC.com) for more information.

**What:** Nasdaq 47<sup>th</sup> Investor Conference

**When:** Tuesday, December 6<sup>th</sup>, 2022

**What:** Barclays Global TMT Conference

**When:** Wednesday, December 7<sup>th</sup>, 2022

The Investor Day meeting and the conferences will include management's discussion of PTC's business and outlook, which may include material projections and other forward-looking statements regarding PTC's strategy and financial model, anticipated financial results and growth, the development of PTC's

# CIMdata PLM Industry Summary

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products and markets, and other future events. All statements made are as of the date of the respective meeting or conference and PTC does not assume any obligation to update any statements made or any archived presentation. In addition, any forward-looking statements about PTC's anticipated financial results and growth, as well as about the development of products and markets, are based on current plans and assumptions. Actual results in future periods may differ materially from current expectations due to a number of risks and uncertainties, including those described from time to time in reports filed by PTC with the U.S. Securities and Exchange Commission, including PTC's most recent reports on Form 10-Q and Form 10-K.

## ***Tango Announces Upcoming User Conference, Tango Connect***

27 October 2022

Tango, a leader in store lifecycle management (SLM) and integrated workplace management system (IWMS) software solutions, announced today it will host its [annual user conference](#) on November 13-15, 2022 at the Gaylord Texan Resort & Convention Center. Tango Connect brings together leaders from across Tango's customer base to discuss the rapidly changing real estate and facilities environment, and how technology plays a critical role in navigating post pandemic strategy and operations

“Over the last two and a half years, businesses have had to pause, pivot and quickly adjust their retail store and office management strategies several times over. At Tango Connect, attendees will have the unique opportunity to collaborate and learn from their peers' experiences, expand their knowledge, and improve outcomes for their businesses,” said Pranav Tyagi, CEO of Tango.

The event's keynote speaker – MindShift founder, Rex Miller – is an award-winning author and sought-after consultant with the capabilities to work toward transformation at any scale. Rex helps organizations see things differently and lead others to think collectively in a way that generates deep collaboration, innovative ideas, and a plan for progress.

“Our customers are charged with aligning and optimizing people and place, the top two resources of any company. People, in the form of customers, employees, and partners – and Place, be it stores, offices, and other facilities. We have dozens of joint sessions with customers and other industry leaders to tackle today's challenges – that is why attendees come to Tango Connect, to discover insights and answers,” said Bart Waldeck, Chief Strategy & Customer Officer at Tango.

In addition to the main conference, attendees can also register for Tango University, a half-day, hands-on training featuring best practices, and tips and tricks.

To learn more about annual Tango Connect user conference and see the full 2-day agenda visit the [Tango Connect website](#).

## ***Turn your business smart with IoT: CONTACT Software at the SPS 2022***

27 October 2022

From November 8-10, 2022, the SPS - Smart Production Solution will take place in Nuremberg and will be expanded by the digital event platform "SPS on air". With around 1,100 exhibitors from all over the world, the SPS is the leading trade fair for the automation industry. It covers the entire spectrum of smart and digital automation - from simple sensors to intelligent solutions.

With [Elements for IoT](#), CONTACT demonstrates how companies can utilize the Internet of Things and Process Automation to simplify their maintenance, reduce downtime, better organize staff, and accelerate their service. The IoT platform enables the end-to-end automation of data-driven processes –

# CIMdata PLM Industry Summary

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from development to manufacturing and the shopfloor all the way to service business.

An IoT demonstrator at the booth will show how easy this works. By creating a digital twin of their smartphone in Elements for IoT visitors can experience functions of the low-code platform, such as automated service processes and spare parts ordering. In various other live scenarios, the IoT and consulting experts showcase the opportunities of the software to implement Industry 4.0 and smart services end-to-end in their business. Furthermore, visitors will be able to try out an augmented reality (AR) assistant system to see first-hand what added value AR offers workers in assembly and testing processes. The visit to CONTACT's booth is topped off with a refreshing drink, prepared by a cocktail robot.

CONTACT Software is present at the smart production solution 2022 in **hall 6** at **booth 259**. Free tickets to the SPS are available [here](#).

## Financial News

### ***American Software to Announce Second Quarter Fiscal Year 2023 Preliminary Financial Results***

3 November 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 Second Quarter Fiscal Year 2023 preliminary financial results after the U.S. financial markets close on Thursday, November 17, 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](http://www.amssoftware.com/investor-relations).

#### **American Software's Second Quarter Fiscal Year 2023 Preliminary Financial Results Earnings Call**

Date: Thursday, November 17, 2022

Time: 5:00 pm ET

Location: [www.amssoftware.com/investor-relations](http://www.amssoftware.com/investor-relations)

### ***Ansys Announces Financial Results With Record Q3 ACV and Revenue***

2 November 2022

ANSYS, Inc. reported third quarter 2022 GAAP and non-GAAP revenue growth of 7% and 6% in reported currency, respectively, or 16% and 15% in constant currency, respectively, when compared to the third quarter of 2021. For the third quarter of 2022, the Company reported diluted earnings per share of \$1.10 and \$1.77 on a GAAP and non-GAAP basis, respectively, compared to \$0.97 and \$1.59 on a GAAP and non-GAAP basis, respectively, for the third quarter of 2021. Additionally, the Company reported third quarter 2022 ACV growth of 12% in reported currency, or 20% in constant currency, when compared to the third quarter of 2021.

"Ansys delivered another outstanding quarter, exceeding our financial guidance across all key metrics. We once again had double-digit ACV and revenue growth in constant currency both in the quarter and year-to-date. Our strong Q3 ACV performance was broad based across customer types, geographies and industries in constant currency, which is further evidence of the essential nature of our market-leading simulation portfolio, multiphysics product leadership and deep customer relationships. Looking to the

## CIMdata PLM Industry Summary

remainder of 2022 and beyond, I am confident in our ability to execute against our outlook,” said Ajei Gopal, Ansys president and CEO.

Nicole Anasenes, Ansys CFO, stated, “Our robust Q3 performance reflects the strength and resiliency of our core business and the sustained importance of simulation to our customers. During Q3, Ansys drove 20% constant currency ACV growth and constant currency revenue growth of 16% and 15% on a GAAP and non-GAAP basis, respectively. Both our Q3 and year-to-date results continue to deliver against our business model of double-digit growth with industry-leading margins. This consistent and strong operational performance bolsters our confidence in achieving our full-year financial guidance.”

### / Financial Results

Ansys' third 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			
	Q3 QTD 2022	Q3 QTD 2021	% Change	Q3 QTD 2022	Q3 QTD 2021	% Change	
Revenue	\$472.5	\$441.2	7 %	\$473.7	\$445.4	6 %	
Net income	\$96.0	\$85.3	12 %	\$154.7	\$140.3	10 %	
Diluted earnings per share	\$1.10	\$0.97	13 %	\$1.77	\$1.59	11 %	
Operating profit margin	26.1 %	24.4 %		41.0 %	39.7 %		

<i>(in millions, except per share data and percentages)</i>	GAAP			Non-GAAP			
	Q3 YTD 2022	Q3 YTD 2021	% Change	Q3 YTD 2022	Q3 YTD 2021	% Change	
Revenue	\$1,371.4	\$1,251.0	10 %	\$1,378.2	\$1,270.1	9 %	
Net income	\$265.8	\$251.5	6 %	\$428.5	\$401.8	7 %	
Diluted earnings per share	\$3.04	\$2.86	6 %	\$4.90	\$4.56	7 %	
Operating profit margin	24.2 %	21.9 %		38.9 %	38.6 %		

### / Fourth Quarter 2022 Guidance

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

<i>(in millions, except percentages and per share data)</i>	GAAP	Non-GAAP
Revenue	\$621.3 - \$656.3	\$621.8 - \$656.8
Revenue Growth Rate	(5.2%) - 0.1%	(6.0%) - (0.7%)

## CIMdata PLM Industry Summary

<i>Revenue Growth Rate — Constant Currency</i>	2.5% - 7.8%	1.7% - 6.9%
Diluted earnings per share	\$1.91 - \$2.28	\$2.58 - \$2.90

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 \$0.5 million for the quarter ending December 31, 2022.

<i>(in millions, except percentages)</i>	<b>Other Financial Metrics</b>
ACV	\$761.3 - \$786.3
<i>ACV Growth Rate</i>	0.8% - 4.1%
<i>ACV Growth Rate — Constant Currency</i>	8.1% - 11.4%

### / 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	\$1,992.7 - \$2,027.7	\$2,000.0 - \$2,035.0
<i>Revenue Growth Rate</i>	4.5% - 6.3%	3.5% - 5.4%
<i>Revenue Growth Rate — Constant Currency</i>	11.1% - 13.0%	10.1% - 11.9%
Diluted earnings per share	\$4.95 - \$5.31	\$7.48 - \$7.80

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>	<b>Other Financial Metrics</b>
ACV	\$1,975.0 - \$2,000.0
<i>ACV Growth Rate</i>	5.6% - 6.9%
<i>ACV Growth Rate — Constant Currency</i>	12.0% - 13.4%
Operating cash flows	\$570.0 - \$600.0

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.

The impact of currency on our results continues to be significant and driven by the macroeconomic environment. 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

# CIMdata PLM Industry Summary

August:

<i>(in millions, except per share data)</i>	Mid-point of Guidance in August	Incremental Operational Performance	November mid- point of Guidance at August Exchange Rates	Currency Fluctuations from August to November Guidance	November mid- point of Guidance at Current Exchange Rates
ACV	<b>\$2,000</b>	\$8	<b>\$2,008</b>	(\$20)	<b>\$1,988</b>
Revenue	<b>\$2,030</b>	\$12	<b>\$2,042</b>	(\$24)	<b>\$2,018</b>
Diluted earnings per share	<b>\$7.69</b>	\$0.12	<b>\$7.81</b>	(\$0.17)	<b>\$7.64</b>
Operating cash flows	<b>\$590</b>	\$2	<b>\$592</b>	(\$7)	<b>\$585</b>

Additionally, when compared to the 2021 currency rates, our full-year 2022 guidance is negatively impacted on ACV by approximately \$120 million and on operating cash flow by approximately \$40 million.

## / Conference Call Information

Ansys will hold a conference call at **8:30 a.m. Eastern Time** on November 3, 2022 to discuss third 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 2575039. The archived webcast can be accessed, along with other financial information, on Ansys' website at <https://investors.ansys.com/events-presentations/events>.

## *Autodesk Extends Invitation to Join Financial Results Conference Call*

1 November 2022

[Autodesk](#), Inc. announced it will broadcast its third quarter fiscal 2023 financial results conference call via its website Tuesday, November 22, 2022, at 2:00 p.m. Pacific Time. Autodesk will host a live webcast call Tuesday, November 22, 2022, at 2:00 p.m. PT at [www.autodesk.com/investors](http://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](http://www.autodesk.com/investors).

## *Capgemini - Strong growth momentum sustained in Q3*

27 October 2022

Capgemini Group reported consolidated revenues of €5,553 million in Q3 2022, up +22.0% year-on-year at current exchange rates and +15.7% at constant exchange rates\*.

# CIMdata PLM Industry Summary

Aiman Ezzat, Chief Executive Officer of the Capgemini Group, commented: “We continue to see double-digit growth across geographies and business lines, and to gain market share in digital transformation.

We are reaping the benefits of our strategy and market positioning, with our unique capabilities from consulting to technology and engineering combined with relevant industry expertise. As a strategic business and technology partner, we bring industry-specific solutions that create concrete business outcomes across the whole value chain of our clients’ organization.

We continue to invest in the high demand areas of cloud, data and AI, Intelligent industry and cybersecurity, where Capgemini is recognized as a leader by many industry analysts. We are accelerating our investments in the ‘what’s next’ with a focus on sustainability, quantum computing and metaverse.

We were just awarded an EDGEplus certification recognizing our outstanding commitment towards gender and intersectional equity across the globe.

Given this very good Q3 performance, we now feel comfortable with the top end of our growth outlook for 2022.”

	(in millions of euros)		Change	
Revenues	2021	2022	At current exchange rates	At constant exchange rates*
Q3	4,552	5,553	+22.0%	+15.7%
9 months	13,263	16,241	+22.5%	+17.5%

Capgemini’s growth momentum remained strong in Q3 2022. Group revenues grew +15.7% at constant exchange rates to €5,553 million, and organic growth\* (i.e. excluding the impacts of currency fluctuations and changes in Group scope) reached +14.3%. Therefore, given the higher comparison basis, the Group maintained in Q3 the underlying growth momentum recorded since the beginning of the year. For the first nine months of the year, growth reached +22.5% on a reported basis and +17.5% at constant exchange rates, while organic growth stood at +16.2%.

Cloud and Data are at the core of the digital transformation projects of Capgemini’s clients, whether to support growth initiatives or optimize costs. These projects drive Group momentum, particularly in the Intelligent Industry and Customer First business areas.

## OPERATIONS BY REGION

All Group regions recorded another quarter of strong double-digit constant currency growth, extending the robust momentum recorded across regions since the beginning of the year.

Revenues in **North America** (33% of Group revenues in Q3 2022) grew by +14.7% at constant exchange rates, driven mainly by the Financial Services, Manufacturing and TMT (Telecom, Media and Technology) sectors.

The **United Kingdom and Ireland** region (12% of Group revenues) continued to report strong

# CIMdata PLM Industry Summary

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momentum with growth of +17.2% at constant exchange rates, boosted by the Public Sector as well as the Financial Services and Energy & Utilities sectors.

**France** (18% of Group revenues) reported revenue growth of +12.7% at constant exchange rates, with a particularly strong performance in the Manufacturing and Consumer Goods & Retail sectors.

The **Rest of Europe** region (28% of Group revenues) grew +15.5% at constant exchange rates, with the Manufacturing and Consumer Goods & Retail sectors remaining the top drivers.

Finally, revenues in the **Asia-Pacific and Latin America** region (9% of Group revenues) increased sharply by +24.1% at constant exchange rates, with the scope impact of 2021 Group acquisitions is now decreasing compared to prior quarters. Underlying momentum was particularly robust in the the Financial Services and Manufacturing sectors.

## OPERATIONS BY BUSINESS

All Group business lines also reported double-digit constant currency growth rates of their total revenues\* in Q3 2022, in line with prior periods.

**Strategy & Transformation** services (8% of Group revenues in Q3 2022) posted a very strong growth of +28.5% at constant exchange rates, reflecting the Group's positioning well ahead of clients' digital transformation projects.

**Applications & Technology** services (62% of Group revenues and Capgemini's core business) reported growth of +15.9% at constant exchange rates, on sustained client demand for modernizing and optimizing their digital environment.

**Operations & Engineering** services (30% of Group revenues) grew +13.8% at constant exchange rates, driven by robust Engineering and Cloud infrastructure services.

## HEADCOUNT

At September 30, 2022, the Group's total headcount stood at 358,400, up +16% year-on-year, with a +19% increase in employees in offshore centers to 210,600 (59% of the total headcount).

## BOOKINGS

Bookings totaled €5,427 million in Q3 2022, a +13% increase at constant exchange rates year-on-year. Considering the usual bookings seasonality, this solid growth translates into a book-to-bill ratio of 0.98.

## OUTLOOK

The Group's financial targets for 2022 are:

- revenue growth of +14% to +15% at constant currency (objective raised on publication of the half-year results on July 28, 2022);
- operating margin of 12.9% to 13.1%;
- organic free cash flow above €1,700 million.

The inorganic contribution to the growth objective is unchanged and should be around 1.5 points.

## CONFERENCE CALL

Aiman Ezzat, Chief Executive Officer and Carole Ferrand, Chief Financial Officer, will present this press release during a conference call in English to be held **today at 8.00 a.m. Paris time (CET)**. You can follow this conference call live via webcast at the following [link](#). A replay will also be available for a period of one year.

All documents relating to this publication will be placed online on the Capgemini investor website

# CIMdata PLM Industry Summary

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at <https://investors.capgemini.com/en/>.

## PROVISIONAL CALENDAR

February 21, 2023 FY 2022 results  
May 4, 2023 Q1 2023 revenues  
May 16, 2023 Combined Shareholders' Meeting

The full and always up-to-date calendar is available at <https://investors.capgemini.com/en/calendar/>.

## ***CENIT KEEPS ON GROWING: GROUP REVENUES INCREASE BY AROUND 11.5% TO EUR 115,863 K EUR COMPARED TO PREVIOUS YEAR***

3 November 2022

**Continued strong consulting and service business (vs previous year: +35.4%) as well as increased license sales determine the sales growth (vs previous year: +11,908, +11.5%) in the first nine month 2022. The consulting and service business, which was already growing strongly in the first half year (vs previous year +18.9%) continued in the third quarter (+67.3%) and was also boosted by a significant increase in the sale of third-party software licenses (vs previous year: +73.8%) and a general increase in proprietary software business (vs previous year: +11.4%).**

After nine months, CENIT Group has generated sales revenues of EUR 115,863 k (previous year: EUR 103,955 k/+11.5%). Sales revenues in the CENIT consulting and services segment increased by 35.4% to EUR 38,352 k (previous year: EUR 28,334 k). Sales of third-party software increased by 1.7% to

EUR 65,351 k (previous year: EUR 64,242 k). Sales of CENIT's own software also increased from EUR 11,364 k to EUR 12,105 k (+6.5%).

Gross profit (operating performance less cost of materials) amounted to EUR 64,101 k (previous year: EUR 55,181 k) and thus increased by 16.2%. CENIT achieved EBITDA of EUR 6,132 k (previous year: EUR 6,217 k/-1.4%) and EBIT of EUR 2,582 k (previous year: EUR 2,436 k/+6.0%). Earnings per share amounted to Cent 14.7 (previous year: Cent 19.4).

Looking at the third quarter alone, the following development can be noticed compared to the third quarter of 2021. Thus, consolidated sales increased by 22.2% to EUR 41,952 k (previous year: EUR 34,323 k), EBITDA increased by 2.1% to EUR 2,754 k (previous year: EUR 2,697 k) and EBIT amounted to EUR 1,463 k after EUR 1,500 k in the previous year (-2.5%).

### **Asset and Financial Situation**

As of the balance sheet date, equity amounted to EUR 38,253 k (Dec. 31, 2021: EUR 43,645 k). The equity ratio amounted to 34.0% (Dec. 31, 2021: 47.0%). Bank balances and cash and cash equivalents amounted to EUR 22,766 k as of the balance sheet date (Dec. 31, 2021: EUR 26,361 k). The operating cash flow reached EUR 11,316 k (previous year: EUR 8,382 k).

### **Employees**

As of September 30, 2022, the number of employees in the Group was 858 (previous year: 675). Personnel expenses amounted to EUR 48,956 k in the CENIT Group in the reporting period (previous year: EUR 43,004 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. This forecast is subject to the express provision 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.

## ***DXC Technology Reports Second Quarter Fiscal Year 2023 Results***

3 November 2022

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

Mike Salvino, DXC Chairman, President and Chief Executive Officer commented: "I am pleased with our second quarter results where we delivered organic revenue, margin, and EPS at the top end of our guidance range. This is the kind of strong performance that we are accustomed to, as our revenue performance is one of the best results we have delivered, and our margins are clearly benefiting from our cost optimization program. All of this gives us confidence that we have built a quality company that is well positioned to achieve our short-term and long-term goals."

### **Financial Highlights - Second Quarter of Fiscal Year 2023**

Revenue was \$3.57 billion for the second quarter of fiscal year 2023, down 11.4% as compared to prior year period, and down 1.5% on an organic basis. Second quarter revenues came in within our guidance range.

Net income was \$28 million, or 0.8% of sales for the second quarter of fiscal year 2023, compared to \$(187) million, or (4.6)% of sales, in the prior year quarter. EBIT was \$70 million or 2.0% of sales. Net income and EBIT in the quarter included the following items: amortization of acquired intangible assets of \$101 million, restructuring costs of \$53 million, loss on disposition of \$32 million, a settlement charge of \$8 million, a mark-to-market pension charge of \$1 million, and transaction, separation, and integration costs of \$4 million. Excluding these items, Adjusted EBIT margin was 7.5% in the second quarter, a reduction of 110 bps as compared to the prior year quarter.

Diluted earnings per share was \$0.12 and Non-GAAP diluted earnings per share was \$0.75 for the second quarter of fiscal year 2023. Compared to the prior year quarter, non-GAAP diluted earnings per share was adversely impacted by unfavorable currency fluctuations, lower pension income, and higher than expected tax expense, partially offset by lower interest expenses and a lower share count.

On a trailing twelve months basis, the company delivered a book to bill of 1.04x.

### **Financial Information by Segment**

GBS segment revenue was \$1,713 million in the second quarter of fiscal year 2023, down 8.5% compared to the prior year period and up 3.4% on an organic basis. GBS performance was driven by strong growth in the Analytics & Engineering business, where revenue increased 14.0% on an organic basis. GBS segment profit was \$218 million and segment profit margin was 12.7%, down 320 bps compared to prior year period, due mainly to investments in our workforce 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 0.96x, and 1.18x on a trailing twelve months basis.

GIS segment revenue was \$1,853 million in the second quarter of fiscal year 2023, down 14.0% compared to the prior year period, and down 5.8% on an organic basis. GIS segment organic revenue performance improved slightly, due to a lower level of declines in Cloud Infrastructure & ITO revenues, which declined by 0.9% on an organic basis. GIS segment profit was \$114 million with a segment profit

# CIMdata PLM Industry Summary

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margin of 6.2%, a 70 bps margin expansion as compared to second quarter of fiscal year 2022. GIS bookings were \$1.3 billion in the quarter for a book-to-bill of 0.71x, and 0.91x on a trailing twelve months basis.

## 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.

## Earnings Conference Call and Webcast

DXC Technology senior management will host a conference call and webcast to discuss these results on November 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 November 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 Third Quarter Financial Results***

2 November 2022

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

"Customer demand across our served markets remained healthy, with revenue on a constant currency basis of \$91.5 million, increasing 14% year on year and up 9% sequentially. Due to continued strengthening of the US dollar, sales on an actual currency basis were \$85.3 million, up 8% compared to the prior year period," stated Michael Burger, President and Chief Executive Officer. "Together with the building momentum of our recent product releases, the recent acquisition of GeoSLAM and the launch of FARO Sphere for cloud-based 3D model creation and collaboration, we have one of the industry's most comprehensive suites of digital 3D solutions. I am excited by the early customer response we have received on our combined offerings and the enormous market opportunity represented by digitalizing the physical world."

### **Third Quarter 2022 Financial Summary**

- Total sales of \$85.3 million, up 8% compared to the prior year period
- Total sales on a Non-GAAP constant currency basis of \$91.5 million, up 14% compared to the prior year period

# CIMdata PLM Industry Summary

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- Software sales, of \$10.6 million or 12% of revenue, down from 14% in the prior year period due to the relative strength of our hardware offerings
- Recurring revenue of \$16.6 million or 19% of revenue on an actual currency basis, was up 2% year on year
- Gross margin of 50.7%, compared to 53.5% in the prior year period with the reduction primarily a result of the strengthening US dollar to foreign currency exchange rates
- Non-GAAP gross margin of 51.0%, compared to 53.7% in the prior year period
- Operating expenses of \$50.4 million, compared to \$47.5 million in the prior year period
- Non-GAAP operating expenses of \$44.3 million, compared to \$42.4 million in the prior year period
- Net loss of \$6.3 million, or (\$0.34) per share compared to \$3.9 million, or (\$0.21) per share in the prior year period
- Non-GAAP net income of \$0.5 million, or \$0.03 per share compared to net loss of \$0.1 million, or (\$0.01) per share in the prior year period
- Adjusted EBITDA of \$2.0 million, or 2.3% of total sales compared to \$2.7 million, or 3.4% of total sales in the prior year period
- Cash and short-term investments of \$48.5 million, compared to \$102.0 million as of June 30, 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 Fourth Quarter 2022**

For the fourth quarter ending December 31, 2022, FARO currently expects:

- Revenue in the range of \$99.0 to \$107.0 million
- Non-GAAP earnings per share in the range of \$0.25 to \$0.45

Note: Constant currency revenue performance is provided such that users of the financial statements may assess our underlying performance excluding the effect of foreign currency rate fluctuations. To present this information, current period performance for entities reporting in currencies other than United States dollars are converted to United States dollars at the exchange rates in effect on September 30, 2021.

## **Conference Call**

The Company will host a conference call to discuss these results on Wednesday, November 2, 2022 at 5:00 p.m. ET. Interested parties can access the conference call by dialing (800) 245-3047 (U.S.) or +1 (203) 518-9708 (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.

## ***HONEYWELL DELIVERS STRONG THIRD QUARTER RESULTS AND BEATS GUIDANCE ON SEGMENT MARGIN AND EARNINGS; RAISES FULL YEAR OUTLOOK***

27 October 2022

Honeywell announced results for the third quarter, which met or exceeded the company's guidance. The company also raised the low end of its full-year organic growth and adjusted EPS guidance<sup>2,3</sup> ranges and raised its full-year segment margin guidance range.<sup>2</sup>

The company reported third quarter sales growth of 6% and organic sales growth<sup>1</sup> of 9%, or 10% excluding the impact of the wind down of operations in Russia,<sup>4</sup> with double-digit organic sales growth in Honeywell Building Technologies, Performance Materials and Technologies, and Aerospace. Operating margin expanded by 90 basis points to 19.5%, or 110 basis points excluding the year-over-year impact of Quantinuum. Segment margin<sup>1</sup> expanded by 60 basis points to 21.8%, or 90 basis points excluding the year-over-year impact of Quantinuum,<sup>1</sup> led by 250 basis points of segment margin expansion in Safety and Productivity Solutions. Earnings per share was \$2.28, up 27% year over year. Adjusted earnings per share<sup>1</sup> was \$2.25, up 11% year over year and 5 cents above the high end of the company's guidance range. Operating cash flow was \$2.1 billion, up 86% year over year, with an operating cash flow margin of 23.3%. Free cash flow<sup>1</sup> was \$1.9 billion, up 108% year over year, with a free cash flow margin<sup>1</sup> of 21.2%, driven by working capital as a result of improved receivables and inventory.

"Honeywell executed exceptionally well in the third quarter, meeting or exceeding guidance for all metrics," said Darius Adamczyk, chairman and chief executive officer of Honeywell. "Despite ongoing challenges across supply chains, we grew sales by 6% on a reported basis and 9% organically,<sup>1</sup> with strong double-digit growth in our advanced materials, commercial aerospace, and building products businesses. Our backlog remains near record levels, closing the third quarter at \$29.1 billion,<sup>5</sup> up 9% year over year, and providing us with confidence in our demand expectations against an increasingly uncertain macroeconomic backdrop. We continued to reap the benefits of our Honeywell Digital transformation investments made over the past few years and we leveraged these digital tools to drive agile commercial and operational actions, which enabled us to stay ahead of the inflation curve, expand margins, and beat the high end of our adjusted EPS guidance. We also executed on our capital deployment strategy, deploying \$1.2 billion in the quarter, including \$0.4 billion of share repurchases, and raising our dividend for the 13th time over 12 consecutive years."

Adamczyk continued, "The Honeywell playbook continues to deliver outstanding results as we successfully maneuver through a challenged operating environment. These operating principles, combined with our attractive end-market exposures and differentiated portfolio of solutions, will allow us to maintain resiliency and continue successfully navigating the current economic crosscurrents. The third quarter was a strong performance for Honeywell, and I remain confident that our best quarters lie ahead."

As a result of the company's third-quarter performance and management's outlook for the remainder of the year, full-year sales are now expected to be in the range of \$35.4 billion to \$35.7 billion, up 6% to 7% organically, or up 8% to 9% excluding the one-point impact of COVID-driven mask sales declines and one-point impact of lost Russian sales. Segment margin expansion<sup>2</sup> is now expected to be in the range of 60 to 80 basis points, including an approximate (30) basis point impact from investments in the Quantinuum business. Adjusted earnings per share<sup>2,3</sup> is now expected to be in the range of \$8.70 to \$8.80. Operating cash flow is expected to be in the range of \$5.2 billion to \$5.6 billion and

# CIMdata PLM Industry Summary

free cash flow<sup>1</sup> is expected to be \$4.7 billion to \$5.1 billion. A summary of the company's full-year guidance changes can be found in Table 1.

## Third-Quarter Performance

**Honeywell** sales for the third quarter were up 6% year over year on a reported basis and 9% year over year on an organic basis.<sup>1</sup> The third-quarter financial results can be found in Tables 2 and 3.

**Aerospace** sales for the third quarter were up 10% year over year on an organic basis<sup>1</sup> led by growth in commercial aviation. Commercial aftermarket demand remained strong as flight hours continued to recover, with both air transport aftermarket and business and general aviation aftermarket sales growing over 20% organically. Commercial original equipment sales increased 30% year over year in the third quarter, primarily driven by higher shipset deliveries to air transport customers. Increased commercial aviation sales were partially offset by lower defense volumes. Segment margin expanded 40 basis points to 27.5%, led by commercial excellence partially offset by cost inflation.

**Honeywell Building Technologies** sales for the third quarter were up 19% on an organic basis<sup>1</sup> year over year including 23% organic sales growth in the building products portfolio. Building solutions also grew double digits organically in the quarter, led by increased project volumes. Segment margin expanded 60 basis points to 24.1% due to commercial excellence, partially offset by cost inflation.

**Performance Materials and Technologies** sales for the third quarter were up 14% on an organic basis<sup>1</sup> year over year despite an approximate 3% headwind from Russia. Sales growth was led by advanced materials, which grew more than 30% organically due to continued pricing actions and improved volumes. Sales strength was also driven by refining catalyst shipments and thermal solutions, both of which were up double digits in the quarter. This growth was partially offset by lower equipment volumes in UOP and lost Russian sales.<sup>2</sup> Orders increased double digits year over year, headlined by strength in fluorine products within advanced materials. Segment margin expanded 40 basis points to 22.6%, primarily due to commercial excellence, partially offset by cost inflation.

**Safety and Productivity Solutions** sales for the third quarter decreased 4% on an organic basis<sup>1</sup> year over year. Strength in the advanced sensing and gas detection portions of our sensing and safety technologies business and growth in productivity solutions and services was offset by lower volumes in warehouse and workflow solutions and personal protective equipment. Segment margin reached the highest level since 4Q18, expanding 250 basis points year over year to 15.7%, primarily driven by commercial excellence and favorable business mix, partially offset by cost inflation.

In July, the safety and retail and advanced sensing technologies business units were aligned into a new business unit within the Safety and Productivity Solutions segment named sensing and safety technologies, which we will use for reporting purposes going forward. We recast historical periods to reflect this realignment.

## Conference Call Details

Honeywell will discuss its third-quarter results and updated full-year guidance during an investor conference call starting at 8:30 a.m. Eastern Daylight Time today. A live webcast of the investor call as well as related presentation materials will be available through the Investor Relations section of the company's website ([www.honeywell.com/investor](http://www.honeywell.com/investor)). A replay of the webcast will be available for 30 days following the presentation.

**TABLE 1: FULL-YEAR 2022 GUIDANCE<sup>2</sup>**

	Previous Guidance	Current Guidance
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## CIMdata PLM Industry Summary

Sales	\$35.5B - \$36.1B	\$35.4B - \$35.7B
<i>Organic Growth</i>	5% - 7%	6% - 7%
<i>Organic Growth Excluding Impact of COVID-Driven Mask Sales Declines and Lost Russian Sales<sup>4</sup></i>	7% - 9%	8% - 9%
Segment Margin	21.3% - 21.7%	21.6% - 21.8%
<i>Expansion</i>	<i>Up 30 - 70 bps</i>	<i>Up 60 - 80 bps</i>
<i>Expansion Excluding the Impact of Quantinuum</i>	<i>Up 60 - 100 bps</i>	<i>Up 90 - 110 bps</i>
Adjusted Earnings Per Share <sup>3</sup>	\$8.55 - \$8.80	\$8.70 - \$8.80
<i>Adjusted Earnings Growth<sup>3</sup></i>	6% - 9%	8% - 9%
Operating Cash Flow	\$5.5B - \$5.9B	\$5.2B - \$5.6B
Free Cash Flow	\$4.7B - \$5.1B	\$4.7B - \$5.1B
<i>Excluding Impact of Quantinuum</i>	\$4.9B - \$5.3B	\$4.9B - \$5.3B

**TABLE 2: SUMMARY OF HONEYWELL FINANCIAL RESULTS**

	3Q 2022	3Q 2021	Change
Sales	8,951	8,473	6 %
<i>Organic Growth<sup>1</sup></i>			9 %
Operating Income Margin	19.5 %	18.6 %	90 bps
Segment Margin <sup>1</sup>	21.8 %	21.2 %	60 bps
Earnings Per Share	\$2.28	\$1.80	27 %
Adjusted Earnings Per Share <sup>1</sup>	\$2.25	\$2.02	11 %
Cash Flow from Operations	2,083	1,119	86 %
<i>Operating Cash Flow Conversion</i>	134 %	89 %	45 %
Free Cash Flow <sup>1</sup>	1,899	911	108 %
<i>Adjusted Free Cash Flow Conversion<sup>1</sup></i>	124 %	64 %	60 %

**TABLE 3: SUMMARY OF SEGMENT FINANCIAL RESULTS**

AEROSPACE	3Q 2022	3Q 2021	Change
Sales	2,976	2,732	9 %
<i>Organic Growth<sup>1</sup></i>			10 %

## CIMdata PLM Industry Summary

Segment Profit		818		740		11 %
Segment Margin		27.5 %		27.1 %		40 b
<b>HONEYWELL BUILDING TECHNOLOGIES</b>						
Sales		1,526		1,370		11 %
<i>Organic Growth<sup>1</sup></i>						19 %
Segment Profit		368		322		14 %
Segment Margin		24.1 %		23.5 %		60 b
<b>PERFORMANCE MATERIALS AND TECHNOLOGIES</b>						
Sales		2,720		2,510		8 %
<i>Organic Growth<sup>1</sup></i>						14 %
Segment Profit		615		558		10 %
Segment Margin		22.6 %		22.2 %		40 b
<b>SAFETY AND PRODUCTIVITY SOLUTIONS</b>						
Sales		1,727		1,861		(7 %)
<i>Organic Growth<sup>1</sup></i>						(4 %)
Segment Profit		271		245		11 %
Segment Margin		15.7 %		13.2 %		250

### ***Informatica Reports Third Quarter 2022 Financial Results***

26 October 2022

Informatica, an enterprise cloud data management leader, announced financial results for its third quarter 2022, ended September 30, 2022.

“We delivered subscription ARR growth above expectations with strong bottom-line performance despite the uncertain macroeconomic environment. Our financial discipline, combined with a strong balance sheet and a geographic and product-diverse footprint, demonstrates the resilience and durability of our business,” said Amit Walia, Chief Executive Officer at Informatica. “We continue to transition from a cloud-first to a cloud-only company with significant momentum and ample longer-term growth opportunities. As mission-critical workloads expand, we’ve scaled the IDMC platform to process over 44 trillion cloud transactions per month, up from 23 trillion cloud transactions a year ago.”

#### **Third Quarter 2022 Financial Highlights:**

- GAAP Total Revenues increased 3% year-over-year to \$372.0 million. Third quarter total revenues included a negative impact of approximately \$15 million from foreign currency exchange rates (“FX”) year-over-year.
- GAAP Subscription Revenues increased 10% year-over-year to \$214.0 million.

# CIMdata PLM Industry Summary

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- Total ARR increased 14% year-over-year to \$1.47 billion. Third quarter total ARR included a negative impact of approximately \$8 million from FX year-over-year.
- GAAP Operating Income of \$2.6 million and Non-GAAP Operating Income of \$83.7 million.
- GAAP Operating Cash Flow of \$53.3 million.
- Unlevered Free Cash Flow (after-tax) of \$76.8 million.

A reconciliation of GAAP to non-GAAP financial measures has been provided in the tables included in this press release. An explanation of these measures is also included below under the heading “Non-GAAP Financial Measures.”

## **Third Quarter 2022 Business Highlights:**

- Processed 44.5 trillion cloud transactions per month for the quarter ended September 30, 2022, as compared to 23.3 trillion cloud transactions per month in the same quarter last year, an increase of 91% year-over-year.
- Reported 191 customers that spend more than \$1 million in subscription ARR at the end of September 30, 2022, an increase of 50% year-over-year.
- Reported 1,852 customers that spend more than \$100,000 in subscription ARR at the end of September 30, 2022, an increase of 17% year-over-year.
- Achieved a subscription net retention rate of 112% at the end of September 30, 2022.

## **Product Innovation:**

- Expanded partnership with Microsoft to help enterprises operationalize AI/ML capabilities in the Microsoft Intelligent Data Platform (MIDP). Informatica was named an initial partner in the MIDP Partner Ecosystem program.
- Launched a new strategic partnership with Abu Dhabi Digital Authority (ADDA) to offer enterprise data management services to 76 government entities in Abu Dhabi. Informatica was selected as a recommended technology in the Abu Dhabi Data Enablement Program, which aims to empower government entities with standardized technologies to help develop and build data programs.
- Launched Intelligent Data Management Cloud (IDMC) for Higher Education vertical to further enable education institutions to modernize their data infrastructure with an AI-powered, secure, and scalable solution to connect the academic community, make data-led decisions, and support innovative teaching and learning.

## **Industry Recognition:**

- Recognized as a Leader in the 2022 Gartner® Magic Quadrant™ for Data Integration Tools report. This makes 17 consecutive years of being a Leader, and Informatica is once again positioned furthest on the axis for completeness of vision and highest on the ability to execute axis.
- Recognized as a Leader in the IDC MarketScape: Worldwide Data Catalog Software 2022 Vendor Assessment. This is the second consecutive time Informatica was named a Leader.
- Informatica scored highest in all four data integration tools use cases in the 2022 Gartner® Critical Capabilities for Data Integration Tools report.
- Named a 2022 Gartner® Peer Insights™ Customers’ Choice for Data Masking.
- Awarded the 2022 STAR Award for innovation and excellence in three key categories: Customer

# CIMdata PLM Industry Summary

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Growth & Renewal, Customer Success and Support Services Automation, all in one year by the Technology & Services Industry Association® (TSIA), the leading association for today's technology and services organizations. Informatica enters the TSIA “Hall of Fame” as a winner in five TSIA STAR award categories since 2020.

- Informatica CEO, Amit Walia, named Top Cloud Executive in 2022 Stratus Awards for Cloud Computing.

## **Fourth Quarter and Full-Year 2022 Financial Outlook**

The Company provides the financial guidance below based on current market conditions and expectations and subject to various important cautionary factors described below. Guidance includes the impact from macroeconomic conditions and foreign exchange headwinds. Based on information available as of October 26, 2022, guidance for the fourth quarter of 2022 and full-year 2022 is as follows:

### **Fourth Quarter 2022 Ending December 31, 2022:**

- GAAP Total Revenues are expected to be in the range of \$398 million to \$408 million, representing flat year-over-year growth at the midpoint of the range. Fourth quarter total revenues guidance includes a negative impact of approximately \$15 million from FX year-over-year.
- Subscription ARR is expected to be in the range of \$980 million to \$990 million, representing approximately 23% year-over-year growth at the midpoint of the range.
- Cloud ARR is expected to be in the range of \$425 million to \$431 million, representing approximately 35% year-over-year growth at the midpoint of the range.
- Non-GAAP Operating Income is expected to be in the range of \$93 million to \$103 million.

### **Full-Year 2022 Ending December 31, 2022:**

- GAAP Total Revenues are now expected to be in the range of \$1,505 million to \$1,515 million, representing approximately 5% year-over-year growth at the midpoint of the range. Full-year total revenues guidance includes a negative impact of approximately \$47 million from FX year-over-year.
- Total ARR is now expected to be in the range of \$1,505 million to \$1,521 million, representing approximately 11% year-over-year growth at the midpoint of the range. Full-year total ARR guidance includes a negative impact of approximately \$23 million from FX year-over-year.
- Subscription ARR is now expected to be in the range of \$980 million to \$990 million, representing approximately 23% year-over-year growth at the midpoint of the range.
- Cloud ARR is now expected to be in the range of \$425 million to \$431 million, representing approximately 35% year-over-year growth at the midpoint of the range.
- Non-GAAP Operating Income is now expected to be in the range of \$330 million to \$340 million.
- Unlevered Free Cash Flow (after-tax) is expected to be in the range of \$290 million to \$310 million.

In addition to the above guidance, the Company is also providing a fourth quarter and full-year 2022 weighted-average number of basic and diluted share estimates for modeling purposes. For the fourth quarter 2022, we expect basic weighted-average shares outstanding to be approximately 284 million shares and diluted weighted-average shares outstanding to be approximately 288 million shares. For the

# CIMdata PLM Industry Summary

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full-year 2022, we expect basic weighted-average shares outstanding to be approximately 281 million shares and diluted weighted-average shares outstanding to be approximately 286 million shares.

Reconciliation of non-GAAP operating income and unlevered free cash flow after-tax guidance to the most directly comparable GAAP measures is not available without unreasonable effort, as certain items cannot be reasonably predicted because of their high variability, complexity, and low visibility. In particular, the measures and effects of our stock-based compensation expense specific to our equity compensation awards and employer payroll tax-related items on employee stock transactions are directly impacted by the timing of employee stock transactions and unpredictable fluctuations in our stock price, which we expect to have a significant impact on our future GAAP financial results.

## **Webcast and Conference Call**

A conference call to discuss Informatica's third quarter 2022 financial results and financial outlook for the fourth quarter and full-year 2022 is scheduled for 1:30 p.m. Pacific Time today. To participate, please dial 1-844-200-6205 from the U.S. or 1-929-526-1599 from international locations. The conference passcode is 619433. A live webcast of the conference call will be available on the Investor Relations section of Informatica's website at [investors.informatica.com](http://investors.informatica.com) where presentation materials will also be posted prior to the conference call. A replay will be available online approximately two hours following the live call for a period of 30 days.

## ***Procore Announces Third Quarter 2022 Financial Results***

2 November 2022

**[Procore Technologies, Inc.](#)**, a leading global provider of construction management software, announced financial results for the third quarter ended September 30, 2022.

"Our excellent third quarter performance reflects the value that our investments in our platform continue to deliver to our customers," said Tooley Courtemanche, Founder, President, and CEO of Procore.

"Procore is designed to solve real problems while driving better business outcomes for our customers."

"We delivered another quarter of impressive results on the top and bottom line, highlighted by growth across stakeholders and customer sizes, as well as operating margin improvement," said Paul Lyandres, CFO of Procore. "These results are a testament to our deepening partnership with the industry, our focus on scaling efficiently, and the significant opportunity ahead of us. We look forward to sharing more at our upcoming Investor Day."

### **Third Quarter 2022 Financial Highlights:**

- Revenue was \$186 million, an increase of 41% year-over-year.
  - Including an \$8.5 million contribution from Levelset.
- GAAP gross margin was 80% and non-GAAP gross margin was 84%.
- GAAP operating margin was (39%) and non-GAAP operating margin was (7%).
- Operating cash inflow for the third quarter was \$7 million.
- Free cash outflow for the third quarter was \$6 million.

A reconciliation of GAAP to non-GAAP financial measures has been provided in the tables included in this press release. An explanation of these measures is also included below under the heading "Non-GAAP Financial Measures."

### **Recent Business Highlights:**

# CIMdata PLM Industry Summary

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- Added 683 net new organic customers in the third quarter, including 189 customers from LaborChart, which was integrated into our sales process in the third quarter, ending with a total of 14,086 organic customers.
  - Excluding over 3,000 customers from Levelset.
- Added 683 net new organic customers in the third quarter, including 189 customers from LaborChart, which was integrated into our sales process in the third quarter, ending with a total of 14,086 organic customer
- Launched [Procore Workforce Management](#), a new end-to-end solution for the construction industry.
- Partnered with FMI Corp. to release [The State of Global Preconstruction Report](#), discussing the current environment for preconstruction and the characteristics of organizations that do it well.
- Opened a [new Middle East and North Africa office](#) in Dubai, UAE following our [successful launch in the region last year](#).

## Leadership Updates:

On August 15, 2022, Procore announced the appointment of Steve Davis as Procore's President of Product & Technology. In this role, Mr. Davis will lead Procore's product, design, and engineering organizations.

Effective as of October 31, 2022, Dennis Lyandres resigned from his position as Procore's Chief Revenue Officer and transitioned to a new position as Special Advisor to the CEO. In this new role, Mr. Lyandres will focus on certain areas of strategic importance to Procore's future success, including international expansion and scale.

## Fourth Quarter and Full Year 2022 Outlook:

Procore is providing the following guidance for the fourth quarter and full year 2022:

- Fourth Quarter 2022 Outlook:
  - Revenue is expected to be in the range of \$189 million to \$191 million, representing year-over-year growth of 29% to 31%.
  - Non-GAAP operating margin is expected to be in the range of (10%) to (11%).
- Full Year 2022 Outlook:
  - Revenue is expected to be in the range of \$707 million to \$709 million, representing year-over-year growth of 37% to 38%.
    - Including \$30 million from Levelset.
  - Non-GAAP operating margin is expected to be in the range of (11%) to (12%).

A reconciliation of non-GAAP guidance measures to corresponding GAAP measures is not available on a forward-looking basis without unreasonable effort due to the uncertainty of expenses that may be incurred in the future and cannot be reasonably determined or predicted at this time, although it is important to note that these factors could be material to Procore's future GAAP financial results.

## Quarterly Conference Call

Procore Technologies, Inc. will hold a conference call to discuss its third quarter results at 2:00 p.m., Pacific Time, on Wednesday, November 2, 2022. A live audio webcast will be accessible on Procore's

# CIMdata PLM Industry Summary

investor relations website at <http://investors.procore.com>.

## November 9, 2022 Investor Day

Procore Technologies, Inc. will host its inaugural **Investor Day** on Wednesday, November 9, 2022 from 9:00 a.m. to 1:00 p.m., Central Time. The event will be held in-person in conjunction with **Groundbreak 2022**, Procore's leading construction technology conference, taking place at the Ernest N. Morial Convention Center in New Orleans, Louisiana.

A live webcast of the event will begin at 9:00 a.m., Central Time, on November 9, 2022. Interested parties can access the webcast by registering [here](#). A replay of the webcast will also be made available on Procore's investor relations website at <http://investors.procore.com>.

## PROS Holdings, Inc. Reports Third Quarter 2022 Financial Results

1 November 2022

**PROS** Holdings, Inc., the CFO's best-kept secret for profitable growth, announced financial results for the third quarter ended September 30, 2022.

"I'm proud of our team for delivering 17% subscription revenue growth along with strong improvements to profitability in the quarter," stated CEO [Andres Reiner](#). "Year-to-date we more than doubled our deal count as compared to last year; the momentum we're seeing in our business reflects the unique value proposition of the PROS Platform which generates significant revenue uplift and margin improvements for our customers, fueling profitable growth."

### Third Quarter 2022 Financial Highlights

Key financial results for the third quarter 2022 are shown below. Throughout this press release all dollar figures are in millions, except net loss per share. Unless otherwise noted, all results are on a reported basis and are compared with the prior-year period.

	GAAP			Non-GAAP		
	Q3 2022	Q3 2021	Change	Q3 2022	Q3 2021	Change
<b>Revenue:</b>						
Total Revenue	\$70.3	\$62.7	12%	n/a	n/a	n/a
Subscription Revenue	\$51.8	\$44.1	17%	n/a	n/a	n/a
Subscription and Maintenance Revenue	\$58.8	\$52.6	12%	n/a	n/a	n/a
<b>Profitability:</b>						
Gross Profit	\$42.7	\$36.6	17%	\$45.3	\$38.0	19%
Operating Loss	\$(16.2)	\$(15.8)	\$(0.4)	\$(3.3)	\$(6.3)	\$3.0
Net Loss	\$(13.9)	\$(17.5)	\$3.7	\$(2.9)	\$(5.9)	\$3.1
Net Loss Per Share	\$(0.31)	\$(0.39)	\$0.08	\$(0.06)	\$(0.13)	\$0.07
Adjusted EBITDA	n/a	n/a	n/a	\$(2.2)	\$(4.4)	\$2.3

### Cash:

# CIMdata PLM Industry Summary

Net Cash Used in Operating Activities	\$(9.0)	\$(8.2)	\$(0.8)	n/a	n/a	n/a
Free Cash Flow	n/a	n/a	n/a	\$(9.1)	\$(8.5)	\$(0.5)

The attached table provides a summary of PROS results for the period, including a reconciliation of GAAP to non-GAAP metrics.

## Recent Business Highlights

- Welcomed new [customers](#) who are adopting PROS solutions such as ABB, GE Healthcare, Phillips Pet Food, Rapido Group, Summit Electric Supply, and Vistara, among others.
- Published our [customer value assessment results](#) on [pros.com](#), highlighting that our solutions generate for our customers, on average, 8% revenue uplift, 200 basis points of margin improvement, and 67% improvement in efficiency gain.
- Extended our digital offer marketing solutions with the launch of the [EveryMundo Marketplace](#), an application store that connects third party developers building eCommerce applications on the EveryMundo platform to enterprise customers.
- Launched [buildwith.pros.com](#), our new developer portal, to give customers and partners access to our library of PROS APIs empowering them to integrate with and embed PROS data, insights, and services within enterprise applications, decreasing development time and accelerating time-to-market. Learn more by watching [this YouTube video](#).
- Awarded the [2022 International Business Stevie Award for Artificial Intelligence and Machine Learning Solutions](#), in recognition of PROS industry-leading solutions that process over two trillion transactions per year and drive significant, measurable ROI by powering businesses of any size to automate smart decision-making.

## Financial Outlook

PROS currently anticipates the following based on an estimated 45.5 million basic weighted average shares outstanding for the fourth quarter of 2022 and a 22% non-GAAP estimated tax rate for the fourth quarter and full year 2022. For the full year 2022, we are raising our guidance for total revenue, subscription revenue, and adjusted EBITDA.

	Q4 2022 Guidance	v. Q4 2021 at Mid- Point	Full Year 2022 Guidance	v. Prior Year at Mid- Point
Total Revenue	\$68.5 to \$69.5	6%	\$273.75 to \$274.75	9%
Subscription Revenue	\$52.1 to \$52.6	11%	\$203.0 to \$203.5	14%
ARR	n/a	n/a	\$246.0 to \$250.0	9%
Subscription ARR	n/a	n/a	\$224.0 to \$228.0	16%
Non-GAAP Loss Per Share	\$(0.14) to \$(0.11)	\$0.04	n/a	n/a
Adjusted EBITDA	\$(5.2) to \$(4.2)	\$1.7	\$(22.5) to \$(21.5)	\$2.8
Free Cash Flow	n/a	n/a	\$(25.0) to \$(21.0)	\$(2.8)

## Conference Call

# CIMdata PLM Industry Summary

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In conjunction with this announcement, PROS Holdings, Inc. will host a conference call on Tuesday, November 1, 2022, at 4:45 p.m. EDT to discuss the Company's financial results and business outlook. To access this call, dial 1-877-407-9039 (toll-free) or 1-201-689-8470. The live and archived webcasts of this call can be accessed under the "Investor Relations" section of the Company's website at [www.pros.com](http://www.pros.com).

A telephone replay will be available until Tuesday, November 15, 2022, 11:59 PM EDT at 1-844-512-2921 (toll-free) or 1-412-317-6671 using the pass code 13733111.

## ***PTC ANNOUNCES FOURTH FISCAL QUARTER AND FULL YEAR 2022 RESULTS***

2 November 2022

[PTC](#) reported financial results for its fourth fiscal quarter and full year ended September 30, 2022.

"In our fourth fiscal quarter, we again delivered strong results. We reported ARR growth of 7%, organic ARR growth of 6%, and organic constant currency growth of 15%. The Codebeamer business, which we acquired in the third quarter, continued to perform well and added an additional point of ARR growth, taking constant currency ARR growth to 16% for the 4<sup>th</sup> quarter and full year. In fiscal 2022, our cash from operations was \$435 million, up 18% year over year, and our free cash flow was \$416 million, up 21% year over year. While currency headwinds have impacted our ARR, our solid execution, the timing of our collections, and prudent cost controls have mitigated the impact on cash flow," said James Heppelmann, President and CEO, PTC.

"Our differentiated product portfolio and industry-leading SaaS capabilities align well to the manufacturing industry's push for digital transformation. Despite challenging economic conditions, the strong resiliency of our business due to our subscription model and our strong market position, coupled with strong execution, has allowed PTC to surpass all of our key guidance measures throughout fiscal 2022. We are positioned for continued solid performance in fiscal 2023," concluded Heppelmann.

### **Fourth Quarter 2022 and Full Year Highlights<sup>11</sup>**

Key operating and financial highlights are set forth below. For additional details, please refer to the Q4'22 earnings presentation and financial data tables that have been posted to the Investor Relations section of our website at [investor.ptc.com](http://investor.ptc.com). Revenue and, as a result, operating margin, operating profit, and earnings per share are impacted by revenue recognition under ASC 606.

- **ARR** as reported was \$1,572 million at the end of Q4'22, up 7% compared to \$1,468 million in Q4'21. On a constant currency basis, Q4'22 ARR was \$1,706 million, up 16%, compared to \$1,468 million in Q4'21, and exceeded guidance. On an organic basis (excluding Codebeamer, which was acquired in Q3'22), Q4'22 ARR was \$1,556 million, up 6% compared to \$1,468 million in Q4'21. On an organic constant currency basis, Q4'22 ARR was \$1,688 million, up 15% compared to \$1,468 million in Q4'21. Foreign exchange rate fluctuations had a \$134 million negative impact on our Q4'22 reported ARR, compared to our Q4'22 constant currency ARR. ARR at the end of Q4'22 includes a \$4 million reduction associated with discontinuing our business operations in Russia in Q2'22.
- **Cash flow** from operations was \$38 million, free cash flow was \$29 million, and adjusted free cash flow was \$33 million in Q4'22, compared to cash flow from operations of \$45 million, free cash flow of \$32 million, and adjusted free cash flow of \$33 million in Q4'21. For FY'22, cash flow from operations was \$435 million, free cash flow was \$416 million, and adjusted free cash flow was \$468 million, up compared to FY'21 by 18%, 21%, and 20%, respectively. Cash flow

# CIMdata PLM Industry Summary

results for Q4'22 and FY'22 exceeded guidance. Foreign exchange rate fluctuations had an approximately \$30 million negative impact to our FY'22 free cash flow.

- **Revenue** was \$508 million in Q4'22, up 6% compared to \$481 million in Q4'21. On a constant currency basis, revenue was up 12% compared to Q4'21. For FY'22, revenue was \$1,933 million, up 7% compared to \$1,807 million in FY'21, and in-line with guidance. On a constant currency basis, FY'22 revenue was up 11% compared to FY'21. We do not provide constant currency revenue guidance.
- **Operating margin** was 29% in Q4'22, compared to 24% in Q4'21. Non-GAAP operating margin in Q4'22 was 40%, compared to 37% in Q4'21. For FY'22, operating margin was 23%, compared to 21% in FY'21. Non-GAAP operating margin was 38% in FY'22, compared to 35% in FY'21.
- **Earnings per share** was \$0.90 in Q4'22, compared to \$2.46 in Q4'21. Non-GAAP earnings per share in Q4'22 was \$1.27, compared to \$1.10 in Q4'21. For FY'22, earnings per share was \$2.65, compared to \$4.03 in FY'21. Non-GAAP earnings per share was \$4.58 in FY'22, compared to \$3.97 in FY'21. Our Q4'21 and FY'21 GAAP earnings per share benefitted from a \$69 million gain on our investment in Matterport, Inc. and a \$137 million release of our U.S. valuation allowance.
- **Total cash and cash equivalents** as of the end of Q4'22 was \$272 million. Gross debt was \$1.36 billion as of the end of Q4'22. We repaid \$75 million on our revolving credit facility in Q4'22. At the end of Q4'21, total cash and equivalents was \$327 million and gross debt was \$1.45 billion.
- **Stock repurchases** were \$125 million in FY'22.

<sup>[1]</sup> The definitions of our operating and non-GAAP financial measures and reconciliations of non-GAAP financial measures to comparable GAAP measures are included below and in the reconciliation tables at the end of this press release.

## Fiscal 2023 and Q1'23 Guidance

"PTC delivered solid fourth quarter results. With strong bookings performance and significantly improved churn, we beat our ARR and free cash flow guidance for the quarter and the year. Balancing our momentum and forecast with potential macro uncertainties, we are establishing ARR guidance for fiscal 2023 that represents 10% to 14% constant currency growth over fiscal 2022. We expect revenue, which is significantly impacted by both ASC606 revenue recognition and currency fluctuations, to be approximately flat on a year over year basis. Given the resilience of the business model, our consistent execution, operational discipline and the actions we have taken to align our investments with growth expectations, we expect free cash flow of approximately \$560M in fiscal 2023," said Kristian Talvitie, EVP and CFO, PTC.

"For Q1'23, we are establishing ARR guidance of 14% to 15% constant currency growth compared to Q1'22, and free cash flow guidance of approximately \$165 million," concluded Talvitie.

In millions except percentages	FY'22 Actual	FY'23 Guidance	FY'23 YoY Growth Guidance	Q1'23 Guidance
ARR at Constant Currency <sup>(1)</sup>	\$1,572	\$1,730 - \$1,790	10% - 14%	\$1,580 - \$1,600
Cash from Operations <sup>(2)</sup>	\$435	~\$580	~33%	~\$170
Free Cash Flow <sup>(2),(3)</sup>	\$416	~\$560	~35%	~\$165
Adjusted Free Cash Flow <sup>(2),(3)</sup>	\$468	~\$562	~20%	~\$166

# CIMdata PLM Industry Summary

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- Revenue \$1,933 \$1,910 - \$1,990 (1)% - 3%
- (1) On a constant currency basis, using our FY'23 Plan foreign exchange rates (rates as of September 30, 2022) for FY'22 actual ARR, FY'23 ARR guidance, and Q1'23 ARR guidance; FY'22 actual ARR at constant currency using our FY'22 Plan foreign exchange rates (rates as of September 30, 2021) was \$1,706 million.
- (2) FY'23 cash from operations and free cash flow guidance include restructuring payments of approximately \$1 million and acquisition and transaction-related payments of approximately \$1 million, both of which are excluded from FY'23 adjusted free cash flow guidance; Q1'23 cash from operations and free cash flow guidance include expected restructuring payments of approximately \$1 million which is excluded from Q1'23 adjusted free cash flow guidance.
- (3) Free cash flow and adjusted free cash flow guidance are net of expected capital expenditures of approximately \$20 million in FY'23 and \$5 million in Q1'23.

## **Our FY'23 and Q1'23 financial guidance includes the assumptions below:**

- We provide ARR guidance on a constant currency basis, using our FY'23 Plan foreign exchange rates (rates as of September 30, 2022) for all periods.
- We expect FY'23 organic churn to be ~5.5%.
- For cash flow, due to invoicing seasonality, and consistent with the past 2 years, we expect the majority of our collections to occur in the first half of our fiscal year and for Q4'23 to be our lowest cash flow generation quarter.
- At the mid-point of ARR guidance, we expect FY'23 GAAP operating expenses to decrease approximately 4% to 5% and non-GAAP operating expenses to increase approximately 0% to 1% compared to FY'22.
- FY'23 GAAP P&L results are expected to include the items outlined below, totaling \$216 million to \$231 million, as well as their related tax effects:
  - \$160 million to \$175 million of stock-based compensation expense
  - \$56 million of intangible asset amortization expense
- Our FY'23 GAAP and non-GAAP tax rate is expected to be approximately 22%.
- FY'23 capital expenditures are expected to be approximately \$20 million.
- Our long-term goal, assuming our Debt/EBITDA ratio is below 3x, is to return approximately 50% of our free cash flow to shareholders via share repurchases, while also taking into consideration the interest rate environment and strategic opportunities.

## **PTC's Fiscal Fourth Quarter Results Conference Call**

The Company will host a conference call to discuss results at 5:00 pm ET on Wednesday, November 2, 2022. To participate in the live conference call, dial (888) 330-2508 or (240) 789-2735 and provide the passcode 7328695, or log in to the webcast, available on [PTC's Investor Relations website](#). A replay will also be available.

## ***Rockwell Automation Reports Fourth Quarter and Full Year 2022 Results; Introduces Fiscal 2023 Guidance***

2 November 2022

Rockwell Automation, Inc. reported fiscal 2022 fourth quarter and full year results and introduced fiscal 2023 guidance.

"We had a great finish to this fiscal year, with our Q4 organic sales and earnings both growing double digits year over year and sequentially. Rockwell delivered very strong operating performance amidst continued supply chain volatility, significant inflation, and currency headwinds. Our strong orders and sales performance in fiscal 2022 reflect the compelling value we provide to our customers across many industries and regions," said Blake Moret, Chairman and CEO.

### **Fiscal Q4 2022 Financial Results**

Fiscal 2022 fourth quarter sales were \$2,126 million, up 17.6% compared to \$1,808 million in the fourth quarter of fiscal 2021. Organic sales increased 20.5%, currency translation decreased sales by 4.8%, and acquisitions increased sales by 1.9%.

Fiscal 2022 fourth quarter net income attributable to Rockwell Automation was \$339 million or \$2.91 per share, compared to \$78.5 million or \$0.67 per share in the fourth quarter of fiscal 2021. The increases in net income attributable to Rockwell Automation and EPS were primarily due to fair value adjustments recognized in the fourth quarter of fiscal 2021 in connection with our investment in PTC (the "fourth quarter PTC adjustment"). Fiscal 2022 fourth quarter Adjusted EPS was \$3.04, up 30.5% compared to \$2.33 in the fourth quarter of fiscal 2021, primarily due to higher sales, partially offset by a higher tax rate and unfavorable currency impact.

Pre-tax margin was 19.1% in the fourth quarter of fiscal 2022 compared to 0.2% in the same period last year. The increase in pre-tax margin was primarily due to the fourth quarter PTC adjustment.

Total segment operating earnings were \$495 million in the fourth quarter of fiscal 2022, up 53.1% compared to \$323 million in the same period of fiscal 2021. Total segment operating margin was 23.3% in the fourth quarter compared to 17.9% a year ago. The increase in segment operating margin was primarily due to higher sales and positive price/cost, partially offset by unfavorable currency impact.

Cash flow provided by operating activities in the fourth quarter of fiscal 2022 was \$399 million, compared to \$204 million in the fourth quarter of fiscal 2021. Free cash flow was \$359 million compared to \$160 million in the fourth quarter of fiscal 2021. Increases in cash flow provided by operating activities and free cash flow were primarily due to higher pre-tax income.

### **Fiscal 2022 Full Year Financial Results**

Sales were \$7,760 million in fiscal 2022, up 10.9% from \$6,997 million in fiscal 2021. Organic sales increased 11.3%, currency translation decreased sales by 2.7%, and acquisitions increased sales by 2.3%.

Fiscal 2022 net income attributable to Rockwell Automation was \$932 million or \$7.97 per share, compared to \$1,358 million or \$11.58 per share in fiscal 2021. The decreases in net income attributable to Rockwell Automation and EPS were primarily due to fair value adjustments recognized in fiscal 2022 and fiscal 2021 in connection with our investment in PTC (the "full year PTC adjustments"). Fiscal 2022 Adjusted EPS was \$9.49, up 0.6% compared to \$9.43 in fiscal 2021. The increase in Adjusted EPS was primarily due to higher sales and lower incentive compensation, partially offset by higher investment spend, higher tax rate, and a prior year favorable legal settlement.

# CIMdata PLM Industry Summary

Pre-tax margin was 13.8% in fiscal 2022, compared to 21.8% last year. The decrease in pre-tax margin was primarily due to the full year PTC adjustments.

Total segment operating earnings were \$1,543 million in fiscal 2022, up 10.9% from \$1,391 million in fiscal 2021. Total segment operating margin was 19.9% compared to 19.9% a year ago. The positive impact from higher sales and lower incentive compensation was offset by higher investment spend and negative price/cost.

Cash flow provided by operating activities in fiscal year 2022 was \$823 million, compared to \$1,261 million in fiscal 2021. Free cash flow was \$682 million compared to \$1,141 million last year. Decreases in cash flow provided by operating activities and free cash flow were driven by higher working capital and the timing of bonus payments.

## **Outlook**

The table below provides guidance for sales growth and earnings per share for fiscal 2023. Our guidance reflects record backlog and assumes continued supply chain stabilization.

<b>Sales Growth Guidance</b>	<b>EPS Guidance</b>
Reported sales growth 7.5% - 11.5%	Diluted EPS \$9.54 - \$10.34
Organic sales growth <sup>(1)</sup> 9.0% - 13.0%	Adjusted EPS <sup>(1)</sup> \$10.20 - \$11.00
Inorganic sales growth ~ 1.0%	
Currency translation ~ (2.5)%	

<sup>(1)</sup> Organic sales growth and Adjusted EPS are non-GAAP measures. See **Adjusted Income, Adjusted EPS, and Adjusted Effective Tax Rate Reconciliation** for more information on these non-GAAP measures.

Note: Guidance includes estimated impact of CUBIC acquisition in fiscal year 2023.

“As we look to 2023, we are confident in our ability to execute our strategy. Our record backlog, underlying customer demand, and a more resilient operating model position us well for another year of profitable double-digit growth. I’m proud of how our teams have navigated this challenging year. Now more than ever, Rockwell is committed to investing in attracting and retaining key talent. It’s the people who bring our strategy to life by supporting the immediate needs of our customers while focusing on continued innovation and investments for the future,” Moret continued.

Following is a discussion of quarter and full year results for our business segments.

## **Intelligent Devices**

Intelligent Devices fiscal 2022 fourth quarter sales were \$957 million, an increase of 11.7% compared to \$857 million in the same period last year. Organic sales increased 16.3% and currency translation decreased sales by 4.6%. Segment operating earnings were \$213 million in the fourth quarter of fiscal 2022 compared to \$166 million in the same period last year. Segment operating margin increased to 22.3% in the fourth quarter of fiscal 2022 from 19.4% a year ago, primarily due to higher sales and positive price/cost, partially offset by unfavorable currency impact.

Intelligent Devices fiscal 2022 sales were \$3,545 million, an increase of 7.0% from \$3,312 million last year. Organic sales increased 9.7% and currency translation decreased sales by 2.7%. Segment operating

# CIMdata PLM Industry Summary

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earnings were \$718 million in fiscal 2022 compared to \$702 million in fiscal 2021. Segment operating margin decreased to 20.2% in fiscal 2022 from 21.2% a year ago, primarily due to negative price/cost and higher investment spend partially offset by higher sales and lower incentive compensation.

## **Software & Control**

Software & Control fiscal 2022 fourth quarter sales were \$657 million, an increase of 33.0% compared to \$494 million in the same period last year. Organic sales increased 32.2%, currency translation decreased sales by 5.3%, and acquisitions increased sales by 6.1%. Segment operating earnings were \$227 million in the fourth quarter of fiscal 2022 compared to \$120 million in the same period last year. Segment operating margin increased to 34.5% in the fourth quarter of fiscal 2022 from 24.2% a year ago, primarily related to higher sales and positive price/cost, partially offset by unfavorable currency impact.

Software & Control fiscal 2022 sales were \$2,313 million, an increase of 18.8% from \$1,947 million last year. Organic sales increased 13.8%, currency translation decreased sales by 2.7%, and acquisitions increased sales by 7.7%. Segment operating earnings were \$667 million in fiscal 2022 compared to \$531 million in fiscal 2021. Segment operating margin increased to 28.8% in fiscal 2022 from 27.3% a year ago, primarily due to higher sales and lower incentive compensation, partially offset by higher investment spend and the impact of acquisitions.

## **Lifecycle Services**

Lifecycle Services fiscal 2022 fourth quarter sales were \$512 million, an increase of 12.1% compared to \$457 million in the same period last year. Organic sales increased 15.8%, currency translation decreased sales by 4.6%, and acquisitions increased sales by 0.9%. Segment operating earnings were \$54.7 million in the fourth quarter of fiscal 2022 compared to \$37.1 million in the same period last year. Segment operating margin increased to 10.7% in the fourth quarter of fiscal 2022 from 8.1% a year ago, primarily due to higher sales.

Lifecycle Services fiscal 2022 sales were \$1,903 million, an increase of 9.5% from \$1,739 million last year. Organic sales increased 11.4%, currency translation decreased sales by 2.5%, and acquisitions increased sales by 0.6%. Segment operating earnings were \$158 million in fiscal 2022 compared to \$158 million in fiscal 2021. Segment operating margin decreased to 8.3% in fiscal 2022 from 9.1% a year ago, primarily due to supply chain constraints and higher investment spend, partially offset by higher sales and lower incentive compensation.

## ***Simulations Plus Reports Fourth Quarter and Full Fiscal Year 2022 Financial Results***

26 October 2022

Simulations Plus, Inc., a leading provider of modeling and simulation software and services for pharmaceutical safety and efficacy, reported financial results for its fourth quarter and full-year fiscal 2022, ended August 31, 2022.

“Simulations Plus delivered a strong fourth quarter, resulting in full-year revenue growth above our guidance, which, when combined with a heavy software mix and operating leverage, led to gross margin expansion and higher income and adjusted EBITDA growth rates,” said Shawn O’Connor, chief executive officer of Simulations Plus. “Improved cross-selling and increasing industry adoption of modeling and simulation solutions contributed to sustainable growth in our software business while we built a robust backlog for services, especially for PBPK and PKPD services. In addition, we increased our global footprint by expanding our presence in Europe, Asia, and Latin America, and further penetrated smaller biotech firms with our offerings.”

# CIMdata PLM Industry Summary

**Fourth Quarter Fiscal 2022 Financial Highlights** (compared with the corresponding period last fiscal year):

- Total revenue increased 19% to \$11.7 million;
- Software revenue increased 10% to \$5.9 million, representing 50% of total revenue;
- Services revenue increased 30% to \$5.8 million, representing 50% of total revenue;
- Gross profit increased 28% to \$9.1 million; gross margin was 77%;
- Net income of \$1.0 million, or \$0.05 per diluted share, compared to net income of \$0.3 million, or \$0.01 per diluted share;
- Adjusted EBITDA of \$2.3 million, representing 20% of total revenue.

**Full Year Financial Highlights** (compared with the corresponding period last fiscal year):

- Total revenue increased 16% to \$53.9 million;
- Software revenue increased 18% to \$32.6 million, representing 61% of total revenue;
- Services revenue increased 13% to \$21.3 million, representing 39% of total revenue;
- Gross profit increased 20% to \$43.1 million; gross margin was 80%;
- Net income of \$12.5 million, or \$0.60 per diluted share, compared to \$9.8 million or \$0.47 per diluted share;
- Adjusted EBITDA of \$21.0 million, representing 39% of total revenue.

## ***Fiscal 2023 Guidance and Commentary***

	<b>Fiscal 2022 Results</b>	<b>Fiscal 2023 Guidance</b>	<b>Increase</b>
Revenue	\$53.9M	\$59.3M - 62.0M	10-15%
Software mix	61%	60-65%	-
Services mix	39%	35-40%	-
Diluted earnings per share	\$0.60	\$0.63-\$0.67	5-10%

“Our expected revenue growth rate for fiscal 2023 is in line with our long-term organic growth rate target of 10-15%,” added Mr. O’Connor. “However, we expect seasonal revenue patterns to shift with changes in our renewal patterns due to successful and ongoing cross-selling initiatives, as well as the impact of somewhat slower renewal patterns on the part of our clients, which we have seen in the back half of fiscal 2022 and expect to continue into fiscal 2023. While this sets us up for lower-than-normal first fiscal-quarter revenue growth, roughly flat year-over-year, we do not anticipate a meaningful net impact on the full-year revenue results, and we expect full-year renewal rates to be in-line with historical patterns.”

“From a cost perspective, we are seeing a competitive market for modeling and simulation professionals, and accordingly, we expect to invest in employee growth, recruiting and retention,” concluded Mr. O’Connor. “The net impact of these investments is expected to be increased operating expense levels in fiscal 2023 as we digest these incremental costs. However, over the medium to long-term, we expect to see a return to higher levels of operating leverage and margins as we deliver on our long-term organic revenue growth targets of 10-15%.”

## **Environmental, Social, and Governance**

We focus our Environmental, Social, and Governance (ESG) efforts where we can have the most positive impact. To learn more about our latest initiatives and priorities, please visit our website to read our [ESG Report](#).

## **Webcast and Conference Call Details**

Shawn O'Connor, chief executive officer, and Will Frederick, chief financial officer, will host a conference call and webcast today at 5 p.m. Eastern Time to discuss details of the company's performance for the fiscal year and certain forward-looking information. The call may be accessed by registering [here](#) or by calling 1-201-389-0879. The webcast will be available on our website under [Conference Calls & Presentations](#). A replay of the webcast will be available on the website approximately one hour following the call.

## **Non-GAAP Definition**

Adjusted EBITDA is defined as earnings (loss) before interest, taxes, depreciation and amortization, stock-based compensation, and any acquisition or financial transaction-related expenses. Adjusted EBITDA represents a measure that we believe is customarily used by investors and analysts to evaluate the financial performance of companies in addition to the GAAP measures that we present. Our management also believes that Adjusted EBITDA is useful in evaluating our core operating results. However, Adjusted EBITDA is not a measure of financial performance under accounting principles generally accepted in the United States of America and should not be considered an alternative to net income or operating income as an indicator of our operating performance, or to net cash provided by operating activities as a measure of our liquidity. The company's Adjusted EBITDA measure may not provide information that is directly comparable to that provided by other companies in its industry, as other companies in its industry may calculate non-GAAP financial results differently, particularly related to non-recurring, unusual items.

## ***TRIMBLE ANNOUNCES THIRD QUARTER 2022 RESULTS***

2 November 2022

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

### **Third Quarter 2022 Financial Highlights**

- Revenue of \$884.9 million, down 2 percent on a year-over-year basis, up 6 percent year-over-year, excluding the effects of divestitures, acquisitions, and foreign currency translation
- Annualized recurring revenue (ARR) was \$1.55 billion, up 13 percent year-over-year, up 16 percent on an organic basis
- GAAP operating income was \$122.4 million and non-GAAP operating income was \$209.9 million
- GAAP net income was \$85.8 million and non-GAAP net income was \$164.0 million
- Diluted earnings per share was \$0.34 on a GAAP basis and \$0.66 on a non-GAAP basis
- Adjusted EBITDA of \$228.1 million, 25.8 percent of revenue
- Share repurchases of \$90.0 million

### **Executive Quote**

"Trimble is transforming and digitizing industries that support how we live, what we eat, and how we

# CIMdata PLM Industry Summary

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move," said Rob Painter, Trimble's president and chief executive officer. "Our third quarter results simultaneously reflect the quality of the Trimble financial model and the reality of evolving macroeconomic challenges. We remain committed to executing our Connect and Scale strategy, which enhances productivity and sustainability outcomes for our customers."

## Forward Looking Guidance

For the full-year 2022, Trimble now expects to report revenue between \$3,665 million and \$3,715 million and GAAP earnings per share of \$1.76 to \$1.81, and non-GAAP earnings per share between \$2.61 and \$2.67. GAAP guidance assumes a tax rate of 23.5 percent and non-GAAP guidance assumes a tax rate of 18.3 percent. Both GAAP and non-GAAP earnings per share assume approximately 250 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 November 2, 2022 at 8:00 a.m. ET to review its third quarter 2022 results. An accompanying slide presentation will be made available on the "Investors" section of the Trimble website, [www.trimble.com](http://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. Thereplay will also be available on the web at the address above.

## Implementation Investments

### *ALOHAS Steps Up Omnichannel Strategy with Centric PLM™*

3 November 2022

ALOHAS, the world's first sustainable on-demand fast fashion brand, has selected Centric Software's Product Lifecycle Management (PLM) solution. 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.

ALOHAS was founded in 2015 in Hawaii by current CEO Alejandro Porras. Originally, ALOHAS focused on reinventing the traditional Spanish Espadrille. After receiving acclaim in Hawaii, the brand grew its product range to include ready-to-wear, handbags and jewelry, as well as their range of finely crafted shoes.

After experiencing rapid growth, it became clear to ALOHAS that they needed to upgrade their digital solutions in order to streamline and condense production timelines.

"Teams were working in Google Sheets and Excel, which are prone to errors and can often lead to confusion regarding version control and product status," says Jordi Marzà Capel, COO at ALOHAS. "We wanted to give our teams better tools, so they can work more effectively and create better products."

Although their legacy ERP system was equipped with a PLM module, ALOHAS needed a more robust, fashion-focused solution. They carefully evaluated five PLM vendors before selecting Centric PLM.

"I liked that Centric had deep expertise in the fashion industry, is cloud-based, very easy to use and is customer-oriented," shares Jordi Marzà Capel.

# CIMdata PLM Industry Summary

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ALOHAS has deployed Centric PLM rapidly across the entire company and is seeing improvements in product quality, customer experience and sustainability. They will also feed data directly from Centric PLM into their e-commerce system, ERP, warehouses and B2B portal to radically transform their processes.

“We have much more control over materials and product changes and we are able to keep track of sustainability features within Centric PLM,” says Jordi Marzà Capel. “All of the product material and development information we collect in Centric PLM can also be made available to our customers on our e-commerce platform. Centric PLM is helping us better understand the behaviors and preferences of our consumers.”

By working within a ‘single version of the truth’, ALOHAS will streamline product data sheets from development to delivery. Centric PLM’s table of measures feature means customers will find their perfect fit with every product, enhancing the customer journey.

“Centric PLM will enable us to maintain our growth trajectory and we anticipate launching three to four times more products by 2023,” says Jordi Marzà Capel. “ALOHAS will leverage product data across the entire organization and use it in our data science and artificial intelligence projects to grow the business.”

ALOHAS also utilizes the power of Centric PLM to store all information on factories, audits and CSR certifications, which is crucial for their sustainability initiatives.

“We are thrilled that ALOHAS is now using Centric PLM to drive their omnichannel strategy,” says Chris Groves, President and CEO of Centric Software. “We are proud to partner with this cutting-edge fashion brand as they propel their growth trajectory.”

## ***Atos to deploy and manage intelligent network for Siemens Healthineers with seven-year contract***

26 October 2022

Atos announces the win of a seven-year contract with Siemens Healthineers to provide, deploy and manage Software Defined Access (SDA)-enabled global LAN (local area network) services in close to 60 customer locations in 15 countries. This contract showcases Atos’ ability and commitment, as global network infrastructure partner, to support Siemens Healthineers on its journey towards a modernized and independent LAN network based on Cisco SDA.

Siemens Healthineers is striving for a network technology that addresses the challenges of a changing world where experts and R&D teams need to collaborate, independent of their location across the globe. To that end, the provided SDA LAN service will replace the legacy LAN service and will help to bring together the worlds of Siemens Healthineers and Varian by enabling global network collaboration.

By relying on a SDA-enabled LAN technology, Siemens Healthineers will not only benefit from a stable and robust but also from a more flexible network, including all the advantages of an automated network, an easy-to-handle access administration and a secure environment with a ZeroTrust approach.

The solution ensures reliable, IoT ready and stable operations by leveraging Atos’ deep understanding of the business intentions of Siemens Healthineers for its network. It also builds on Atos’ state-of-the-art network management practices, supported and continuously improved by our own network experts.

The solution proposed by Atos leverages the results of the SDA-specific Design Project conducted by Siemens Healthineers and Atos in partnership with Cisco. The result demonstrates innovative features, such as micro segmentation, automation and how they can be incorporated into the solution design and

operational set-up.

As the current provider, Atos can reuse recently refreshed SDA-ready devices from the installed base, as well as the customer specific tool interfaces and IT service management (ITSM) processes, enabling a seamless, cost-efficient 24-month transformation with no or minimal impact on business users and their processes.

**Nourdine Bihmane, co-CEO in charge of Tech Foundations, Atos** said “We are delighted to support Siemens Healthineers in their digitization journey and help transform their network infrastructure with the purpose of enhancing collaboration throughout the company. The project in partnership with Cisco is yet another example of Atos’ mission to securely deliver innovative technologies for business change while maintaining continuity.”

**Dr. Stefan Henkel, Head of IT of Siemens Healthineers** said “With this agreement, we are renewing our trust in our partnership with Atos to transform and innovate network services for our manufacturing sites and R&D labs towards a Zero-Trust-Architecture. This transformation program is an essential cornerstone of our journey to Digitalize the Core of Siemens Healthineers. We look forward to executing the program together with Atos, to build an innovative, resilient, and efficient foundational service for our new network infrastructure.”

## ***Blue Spirit Aero Accelerates the Development of Its Hydrogen-Powered Aircraft with Dassault Systèmes***

3 November 2022

Dassault Systèmes announced that Blue Spirit Aero, the France-based aviation startup harnessing the power of hydrogen fuel cell technology, is using Dassault Systèmes’ 3DEXPERIENCE platform on the cloud to accelerate the development of its hydrogen-electric light aircraft and advance the certification of accessible clean aviation.

The aircraft, “Dragonfly,” which relies on Blue Spirit Aero’s proprietary electro-propulsive technology optimized for clean performance, is being developed with a view to certification and entry into service in 2026. In only a few months, Blue Spirit Aero has used Dassault Systèmes’ “Reinvent the Sky” industry solution experience based on the 3DEXPERIENCE platform to complete the detailed 3D design of Dragonfly’s shapes, and test and validate its performance in terms of aerodynamics, structure and energy. From the outset, the platform’s virtual environment on the cloud enabled the startup to structure its internal processes and streamline communication between experts across disciplines and locations for more efficient decision-making and full traceability.

“The 3DEXPERIENCE platform is the technology of reference in the aviation industry,” said Olivier Savin, CEO and founder, Blue Spirit Aero. “By using it to develop our aircraft from concept to certification, not only are we relying on one platform for all aspects of our product development, we are giving credibility to each milestone achieved. We can show potential investors, partners, employees, suppliers, customers and regulators that viable hydrogen solutions are being developed with the same software that has made the most technologically advanced commercial airliners possible.”

The global aviation industry is striving to achieve net-zero carbon emissions by 2050. Transforming technological breakthroughs into real solutions requires new ways of working that combine the expertise of stakeholders and enable efficient certification processes. Regulators are working to establish certification processes for solutions involving disruptive hydrogen technologies. Blue Spirit Aero will be a catalyst in this by using the 3DEXPERIENCE platform to demonstrate the feasibility of these solutions.

# CIMdata PLM Industry Summary

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“Blue Spirit Aero exemplifies a dynamic startup driving the hydrogen economy that shares our vision for more sustainable aviation,” said David Ziegler, Vice President, Aerospace & Defense Industry, Dassault Systèmes. “‘Reinvent the Sky’ and the scalability offered by the cloud allow it to deploy new capabilities as its project matures, optimize program execution, and reduce costs. These are ‘must-haves’ for a startup paving the way toward the certification of a new category of vehicles.”

## ***Construction machinery giant Kobelco selects IFS Cloud for greater agility and customer responsiveness***

1 November 2022

IFS, the global cloud enterprise software company, announced that Kobelco Construction Machinery CO., LTD. (Kobelco Construction Machinery), the global leader in construction equipment, has selected IFS Cloud™ to improve their ability to respond to customers. The solution will introduce advanced digital transformation in the field and improve market responsiveness within its entire supply chain, from procurement to manufacturing, sales, and service management, at a time of continuing disruption worldwide.

This major agreement will see IFS Cloud implemented for 8,000 users across Kobelco's operations in 11 countries, starting with its home market in Japan.

Its construction equipment can be customized in the field and requires individualized management even after sale, and Kobelco found its previous platform was unable to support the required functionality without the development of a huge add-on system. IFS Cloud, by contrast, provides unmatched functionality, the ability to handle customer's customization management and integration with services, improving the quality and speed of service Kobelco provides to customers. The IFS suite of solutions will optimize all of Kobelco's global operations in production, supply chain management, logistics, final assembly, service and sales.

"IFS Solutions has a proven track record of supporting the core operations of global machinery manufacturers and has a high level of expertise that contributes to the realization of business transformations." said Hiroyuki Hosomi, Managing Executive Officer, Kobelco Construction Machinery. "We expect it to also have the ability to achieve a high level of responsiveness to expanding global customers."

The implementation of IFS Cloud will be executed by IBM Japan, Ltd. (IBM Japan) a leading systems integrator with a proven track record of implementing ERP solutions for many companies in Japan and globally. This is the first time IFS has collaborated with IBM Japan in ERP, and IFS will continue to expand this collaboration.

"Kobelco Construction Machinery is transforming to meet customer requirements through innovation, excellence, and the ability to adapt quickly to changes in demand. We are proud to partner with them on their digitalization journey," said Michael Ouissi, Group Chief Operating Officer, IFS. "IFS will deliver the next-generation ERP capabilities and comprehensive solution set that Kobelco needs for end-to-end optimization in today's rapidly-changing markets where organizational agility and responsiveness are essential."

## ***Infosys and Microsoft modernise Spark New Zealand's corporate functions to accelerate business growth and resilience***

2 November 2022

Infosys, a global leader in next-generation digital services and consulting, and Microsoft announced the successful migration of Spark's corporate functions to Microsoft Dynamics 365. This is set to enhance business resilience, operational simplicity, workplace agility and customer experience for New Zealand's largest telecommunications and digital services company.

Infosys was chosen to assist Spark on this journey for its rich Enterprise Resource Planning (ERP) experience, Microsoft Dynamics 365 expertise, and ability to deliver digital and business transformation solutions in an agile and scalable manner.

As part of the engagement, leveraging Infosys Cobalt, Infosys delivered a platform-led transformation to de-risk and accelerate end-to-end ERP service delivery and data-driven decision making through Microsoft Dynamics 365 implementation. Infosys and Microsoft consultants collaborated with Spark stakeholders to strategically align their business processes with out-of-the-box best practice capabilities and functions provided by Microsoft Dynamics 365 for process harmonisation.

The implementation is now live across all Spark NZ's support service functions, from finance and human resources to supply chain, procurement, and billing.

**Mark Beder, Chief Operating Officer, Spark** said, "As we embarked on a journey to revamp our business operations and step out of our legacy systems, we were looking for partners that understand and provide strength to our vision for an ERP-driven business transformation. It has been great working with Infosys and Microsoft as our transformation partners. The level of ERP implementation expertise and scale they bring to the table in this endeavor underpinned by best-fit digital solutions and resources is helping us to unshackle legacy system constraints and will help us improve operational simplicity, workplace agility and customer experience."

**Vanessa Sorenson, Managing Director, Microsoft NZ** said, "Spark was looking to continuously raise the operational performance bar by modernizing business practices and to continue to serve as the trusted digital partner of their customers. Our successful engagement with Spark to deliver a purposeful transformation of business operations while implementing modern end-to-end ERP solutions is a testament to the longstanding relationship and synergy we enjoy with Infosys. This implementation will set new benchmarks for us in the space going forward."

Commenting on the implementation, **Anand Swaminathan, Executive Vice President & Global Industry Leader Communications, Media and Technology, Infosys** said, "The agility afforded by a modern ERP system combined with simplified business operations and informed decision making will significantly help an organization compete in today's fast-paced business environment. Our long-term collaboration with Microsoft in delivering end-to-end Microsoft Dynamics 365 implementations has enabled us to drive exceptional operational excellence and business value for Spark, supplemented by fresh digital experiences. This new cloud based ERP platform supports their agile work culture and enables more engaging digital experiences for staff and customers."

## ***Outdoor Research Selects Centric PLM™ Based on Intuitive User-Experience, High Functionality and Value***

1 November 2022

Outdoor Research, the Seattle based and globally distributed outdoor gear and accessory company, has selected Centric Software®'s Product Lifecycle Management (PLM) solution. Centric Software provides the most innovative business solutions to plan, design, develop, source and sell products such as apparel, footwear, sporting goods, furniture, décor, cosmetics, food & beverage and luxury to achieve strategic and operational digital transformation goals.

Outdoor Research (OR) was founded by Ron Gregg following an experience that cut a Denali climbing trip short. Gregg's partner experienced a failure in his leg gaiters and had to be airlifted off the mountain due to frostbite. Afterward, Gregg sought to build a pair of gaiters that would have saved that trip, and the company was born. Outdoor Research produces functional, quality outdoor gear that pushes the limits of innovative possibility. The main distribution channel is wholesale, with e-comm and a brick-and-mortar store in the mix.

Outdoor Research knew they needed to upgrade an older PDM system. Caroline MacMillan, Director of Product Development and Operations at Outdoor Research says, "The system we're currently using is very outdated and coming up on being unsupported, so that forced our hand."

Says MacMillan, "We researched all the solutions available in the space right now, especially those that focus on apparel. We were seeking a combination of usability, functionality and price that fits where we are in our growth." The winning solution also needed to address the complexity of multiple manufacturing locations in Asia and the US, and a SKU count of about 1000 styles annually, spread across 7 categories.

In the end, OR selected Centric PLM. "Centric hit that sweet spot for us, with the user-friendly interface putting it over the top." says MacMillan. "One of our primary criteria was ease of use because we know we'll get better adoption that way. Tools are only useful if people are willing to use them."

The expectations after implementation are improved efficiency throughout the product lifecycle and reduced errors due to not having to update information in multiple spreadsheets. MacMillan says that having a single source of truth will also give users a bird's eye view of what they are working on, leading to more strategic decision-making. "We'll be able to look at information in real-time to get status and assess priorities. That's a huge efficiency over pulling information from multiple spreadsheets into one roll-up every time." She continues to describe how the current system can cause bottlenecks in their process because there is only a small subset of people in the company who are trained on it due to its difficulty of use. MacMillan says, "It's a major headache—work slows to a crawl because there's a limited number of people who can execute it. We're hoping that Centric PLM democratizes the process; there'll be more people who can get into the system and perform different activities and the system will be intuitive enough for each function to take care of its own piece."

Adding another wish, MacMillan says, "We're hoping that by having better information to start with and better access to that information, we'll become both more efficient and more sustainable, avoiding the waste caused by late changes, dropped styles and over-development. We're looking forward to making our own lives easier on a day-to-day basis and streamlining operations by using a tool that allows us to get better information faster."

Chris Groves, President and CEO of Centric Software says, "I am so pleased that Outdoor Research has selected Centric PLM. We are happy to have a thriving outdoor company take advantage of the

functionality that our user-friendly solution brings to making better decisions that will drive efficiency into their process.”

## ***ScandiNova Set for Powers Ahead with the Infor Cloud***

31 October 2022

Infor<sup>®</sup>, the industry cloud company, announced that Swedish ScandiNova Systems AB (ScandiNova) has selected Infor CloudSuite Industrial Enterprise to help unify and standardise its operational and manufacturing processes. Delivered via multi-tenant cloud, powered by Amazon Web Services (AWS), the system will be deployed by local Infor partner Midport Scandinavia.

ScandiNova develops, manufactures and sells pulse modulators and radio frequency units with high power levels that have a key function in applications such as radiotherapy, scientific research, cargo scanning and weather radar. ScandiNova is growing rapidly and needs to deepen the use of enterprise resource planning (ERP) and business intelligence.

The company was looking for a solution to bring a commonality to its processes across all business sites, planning to unify and standardise systems to create a platform from which to pursue further growth.

Following a tender process, ScandiNova selected Midport with the Infor CloudSuite industry-leading manufacturing ERP system based on Infor LN. The solution’s ability to handle complex processes and its industry-specific functionality set it apart from the competition, representing a truly global solution that can deliver the level of business agility that ScandiNova seeks to achieve. A multi-tenant cloud deployment was also a crucial factor in ScandiNova’s decision, ensuring the business can benefit from continuous updates with minimal administrative burden on the in-house IT team, as well as enabling the swift on-boarding of new entities.

“ScandiNova has a unique product with industry-leading performance, but our day-to-day struggle is very similar to that of other manufacturing companies,” comments Per Benkowski, ScandiNova’s IT manager. “With Midport and Infor, we strive for a standardized solution in an industry-leading ERP system. The move to a new ERP system is very much a change process and, with Midport and Infor, we got a well-developed and documented implementation project already in the tender process. This gave us confidence in Infor CloudSuite as a product and Midport as an integration supplier. This was the main difference between different systems and suppliers.”

“We are pleased that ScandiNova has chosen Midport and Infor's ERP solution. The decision confirms that Midport’s experience and expertise in a project-centric industry, together with Infor’s modern multi-tenant cloud ERP solutions offer the industry-specific functionality needed to simplify and streamline operations, in combination with the agility and flexibility to support even the most ambitious growth plans,” says Niels Mejer of Midport. “This is an important win for us and Infor in the region as it confirms our common strategy to grow our footprints in the Nordics and especially in Sweden.”

“We are happy to welcome such an exciting and innovative company to the Infor family. With the Infor CloudSuite, ScandiNova has chosen a true multi-tenant solution to empower the move toward higher agility in manufacturing. We are proud to be part of this transformation,” concludes Henning Dransfeld, Infor’s industry lead for the high tech & electronics industry.

## Product News

### ***Ansys Announces the Launch of Ansys Gateway powered by AWS***

31 October 2022

Ansys announced availability of Ansys Gateway powered by Amazon Web Services (AWS), which allows customers to use popular Ansys products in one unique workspace on AWS – helping simplify access to faster, more flexible, and highly scalable engineering solutions. Ansys Gateway powered by AWS is available in AWS Marketplace and makes it possible for customers to easily access, subscribe and configure Ansys applications from a single location. Customers will also benefit from the accelerated performance of Ansys applications enhanced on AWS.

Ansys Gateway powered by AWS features on-demand access to Ansys applications and high-performance computing (HPC) resources on the cloud as part of a strategy designed to make simulation software more affordable. Customers can manage and control computer-aided design (CAD) / computer-aided engineering (CAE) cloud consumption and costs on AWS while taking advantage of the scalable hardware and compute capacity. This offering provides seamless cloud support for both Ansys applications as well as other popular CAE/CAD software. With control over their hybrid architecture, customers can bring their own licenses to Ansys Gateway powered by AWS and easily manage user access, permissions, data and security.

With Ansys Gateway powered by AWS, customers gain instant, intuitive access to Ansys applications. In addition to reducing time to market, customers can reduce costs by paying for cloud resources only when they are being used.

“We were surprised by how easy and seamless it is to switch from our internal cluster to the cloud with Ansys Gateway powered by AWS,” said Steve Collie, aerodynamics coordinator at Emirates Team New Zealand. “We can quickly set up a workstation or cluster and select the best hardware. We can replace our hardware every day if we want, instead of replacing physical resources every four years. It’s fast and intuitive to switch back and forth from cluster to cloud as our needs change.”

"Our goal at Ansys has always been to make simulation accessible to as many startups, students and businesses – large and small – as possible. Providing easy, affordable access to Ansys' solutions makes greater innovation and efficiency possible for all of our customers," said Shane Emswiler, senior vice president of products at Ansys. "By working with AWS, we are able to allow broader access to HPC by bringing down the traditional hardware barriers that have limited innovation for many of our customers."

"Working together with the company, we are excited about the launch of Ansys Gateway powered by AWS," said Bill Vass, vice president of engineering at AWS. “Now, customers can access and deploy Ansys’ portfolio through AWS, helping customers remove barriers to scale globally, perform more simulations, and innovate faster.”

### ***Bricsys® PROMISES TO DEMOCRATIZE INNOVATIONS IN CAD WITH FLEXIBLE LICENSING FOR ALL USERS***

31 October 2022

Bricsys®, a global provider of CAD and construction CDE software, held its annual Digital Summit to showcase the launch of the new BricsCAD® Version 23 and the updated Bricsys® 24/7.

The new release of BricsCAD® Version 23 for the Bricsys® computer aided design (CAD) product

# CIMdata PLM Industry Summary

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family, available to watch, has added more intuitive, AI-driven CAD tools for design, construction, engineering, and manufacturing workflows.

At the Digital Summit, the teams from Bricsys® addressed the challenges for design, construction and engineering professionals to invest in business and their productivity, Rahul Kejriwal CEO at Bricsys® spoke out against the inflexible licensing models for CAD software, negatively impacting digital adoption across small and larger companies in the AEC, design, engineering and manufacturing sectors, and said:

*“Bricsys will never trap your data in walled gardens’ and ‘we will offer new and flexible business models to serve users who need the best, most accessible design, modelling and collaboration software.”*

Highlighting the innovations for users in BricsCAD® v23, **Jan Syssauw, Head of BricsCAD® Product Management and Development** for BricsCAD® Pro/Lite, BricsCAD® Mechanical and BricsCAD®BIM, presented the greater accessibility and capability for designers and engineers working in CAD.

*“BricsCAD will continue to invest heavily in R&D. ... CAD is very much alive.... We are on a mission to take the design efficiency and productivity to the next level.”*

At the Summit, Bricsys’ senior product teams detailed how the new innovations inside BricsCAD® v23 addresses the operational and economic challenges of business and users.

**Cathi Hayes, Vice-President for Go-to-Market at Bricsys**, spoke to audiences’ operational challenges in the AEC and Construction sectors - low margins, high risk and skills-gap. And she presented Bricsys’ product strategies to give CAD users and businesses the innovative tools to work productively and intuitively:

*“True agility is achieved through three characteristics: integration, automation, and usability. Bricsys is the only vendor with a single platform for CAD, BIM and Mechanical design; ... Simple and easy-to-learn so you, your workflows and your projects perform better.”*

Speaking as a keynote highlight at the Summit, **Thomas Harring, President of Geosystems at Bricsys’ parent company Hexagon**, commented on the interoperability of BricsCAD and Leica Geosystems’ tools and solutions for AEC and Construction:

‘With the reality that half of all construction projects face overrunning costs, having a design technology partner with a focus on automation and intuitive use is of paramount importance. The new version of BricsCAD® is more exciting and more intuitive than ever before and is a testament to the investment Bricsys® has made in research and development across its 20 years history.’

## **HEADLINE FEATURE AND COMMAND UPDATES in BricsCAD® Version 23**

Commenting on the product demo highlights featured at the Bricsys® Digital Summit, **Jans Syssauw, Head of BricsCAD® Product and Development**, commented that Bricsys is:

*“ ... creating powerful tools with a really **amazing user experience**. CAD will remain a powerful platform. ... We are committed to unlocking interoperability. ... Open, with the full power of all features, through industry-standard APIs.’*

### **BricsCAD® Pro and Lite**

New features added and commands enhanced in Bricsys’ flagship, and core DWG-based, product: set of Drawing Health Management tools and significant expansion of its drawing recovery tools. As part of the Hexagon family, For the Civil Sector, BricsCAD® also includes Civil and Point Cloud capabilities.

# CIMdata PLM Industry Summary

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Using AI and Machine Learning, the new v23 automates as many workflows as possible; examples of these intuitive commands featured at the Bricsys® Digital Summit 2022 include Blockify, Propagate and CopyGuided. The new BricsCAD® v23 also includes upgraded Optimize 3D and CopyGuided 2D features. The product team shows how BricsCAD® is interoperable and open for importing and exporting data across platforms, compatible with DWG and IFC standards.

## **BricsCAD® BIM**

Bricsys' mission for BricsCAD® BIM is to offer simple, accessible BIM workflows in a familiar CAD environment. It's designed and built for users who work and participate in BIM workflows, with capability and compatibility for IFC, RVT and RFA. The product focus is for users and businesses to design and build a familiar UI and environment, with automated workflows for 2D drawings from 3D models. The product and BIM experts showcase the new features in BricsCAD® BIM v23, such as improved Stair 2D representation and the Type Plans feature, which will allow elements of Scan-to-BIM modelling to be achieved automatically.

## **BricsCAD® Mechanical**

BricsCAD® Mechanical in V23 speeds up design-to-manufacture on a single dwg-CAD and modeling platform with AI-powered tools. The Bricsys' product development teams have added to the capability of the 3D mechanical design tool. The product team demonstrates how users can easily generate 2D production drawings downstream, such as automated bill of materials creation, comprehensive 2D drawing detailing capabilities, and unique sheet metal design-to-manufacture workflows.

## **Bricsys® 24/7**

The Bricsys® Digital Summit 2022 featured the latest update to Bricsys® 24/7, the company's Common Data Environment (CDE) cloud for professionals in AEC and Construction to manage project data and exchange multi-format documents. The updated Bricsys® 24/7 cloud CDE platform has made workflows intuitively easy for all stakeholders and building owners to automatically manage data and documentation for projects, with real-time visibility of mission-critical data, in the right place at the right time. Demonstrations at the Bricsys Digital Summit 2022 include workflows for tender documents, building drafts, building models, site plans and bills of materials, as examples. Bricsys® 24/7 is open to an unlimited number of users working on large projects in Building and Construction or large retail portfolios. It is compatible with designs in 2D, 3D and BIM.

## **BricsCAD® Ultimate**

Bringing together the innovations across the Bricsys' family of products is BricsCAD® Ultimate, the interoperable 2D/3D CAD, modelling and BIM package which gives users a powerful tools, promising: 'one licence, one tool, one skill', from BIM to Mechanical designed on an all-in-one CAD platform. BricsCAD® Ultimate provides designers and engineers with the tools to build accurate 3D models for engineering work for fabrication and steel detailing. The BricsCADs® Ultimate package gives users the flexibility to handle low-detail mass modeling, and detailing for highly detailed fabrication, in the same modeling with scan-to-BIM for steel structures.

## ***COMSOL Releases Version 6.1 of COMSOL Multiphysics®***

1 November 2022

COMSOL announced the release of the latest version of its modeling and simulation software, COMSOL Multiphysics® version 6.1. Every aspect of the software's simulation environment — from the

# CIMdata PLM Industry Summary

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ability to perform multiphysics analyses to the functionality for creating apps — delivers feature additions and workflow enhancements. "This version provides our users with powerful multiphysics simulation tools in areas of highly competitive R&D, like audio technology and vehicle electrification," says Bjorn Sjodin, VP of product management at COMSOL. "We have also strengthened the software's foundation with new capabilities for optimization and the modeling of turbulent flow and mechanical contact."

## Fluid and Mechanical Simulations

This release brings major upgrades to the fluid flow and mechanical simulation products. The CFD Module now includes high-fidelity turbulent flow with detached eddy simulation (DES). This yields the accuracy of large eddy simulation (LES) with substantially less computational effort. A new and fast method for mechanical contact is included in the Structural Mechanics Module and the MEMS Module. It introduces new functionality for solids, shells, and membranes with full support for self-contacting surfaces. There is a new method for assigning materials to thin structures that makes it easier to analyze gaskets, adhesive layers, and claddings.

## Transducer Design for Audio Products

Version 6.1 further expands the software's capabilities for modeling speakers and microphones in consumer electronics with additional functionality for thermoviscous acoustics. "We have a large and growing community of users among leading developers of audio technology. They use our software to analyze everything from smartphone speakers to earbuds and hearing aids. The functionality in this release completes the Acoustics Module simulation environment for analyzing electrovibroacoustics of microtransducers and microacoustic systems," says Mads Herring Jensen, acoustics technology manager at COMSOL.

## Analysis Tools for Vehicle Electrification

COMSOL continues its commitment to providing powerful simulation tools for engineers working on the electrification of vehicles. When assessing the operational reliability and safety of battery technology, users of the Battery Design Module will enjoy several important additions, including support for setting up thermal runaway propagation models. "I am excited about our new user interface for battery packs," says Henrik Ekstrom, electrochemistry technology director at COMSOL. "It will be very practical for battery developers interested in charge–discharge dynamics and thermal management simulations." In the AC/DC Module, new functionality for rapid layout of motor windings and magnet arrays ensures a smooth workflow for electric motor design and analysis.

## Additional Highlights

- Version control of reports and CAD assemblies in the Model Manager
- Automatic simplification of imported ECAD layouts for faster meshing and solving
- Topology optimization with manufacturing constraints for milling
- Multidimensional interpolation and inverse uncertainty quantification
- Magnetohydrodynamics simulation with a library of liquid metals
- Flowmeter analysis that includes coupled piezoelectric, structural, acoustics, and fluid flow effects
- Simulation of acoustic streaming applications where ultrasound induces fluid motion
- Analysis of fuel cell performance that includes effects of fuel impurities
- Electrostatic discharge (ESD) simulation and prediction of lightning-induced damage to

electronic components

- Thermal analysis of satellites in orbit

## ***Desktop Metal Announces Broad Availability of the Shop System™ Forust Edition, the World's First High-Speed 3D Printer for Upcycled Wood Parts***

31 October 2022

Desktop Metal, a global leader in additive manufacturing technologies for mass production, announced broad availability of the Shop System™ Forust Edition, a binder jet 3D printing system for the high-speed production of functional, end-use wood parts using upcycled sawdust from the wood milling industry.

The Forust wood printing process was first announced in May 2021 with an online storefront serving customers with custom parts and beta printer system deliveries. After serving customers and refining the process, Desktop Metal is now shipping easy-to-use, turnkey wood printing systems.

With the Shop System Forust Edition, architects, designers, and manufacturers can produce luxurious custom wood pieces that combine design and functionality for home decor and lighting, consumer products, architectural design, and automotive applications.

“Our new Shop System Forust Edition makes it easy to create custom and complex wood designs with a 3D printer on demand, circumventing supply chain challenges and delivering all-new design possibilities,” said Ric Fulop, Founder and CEO of Desktop Metal. “One of the great things about binder jet 3D printing technology is it can transform virtually any powder material into functional, end-use parts. Beginning with an ample supply of sawdust byproduct from the traditional wood milling industry, we are using our technology to build cradle-to-cradle manufacturing for wood. We believe this concept has the ability to deliver a meaningful sustainability impact and expand to other powdered waste materials over time.”

### **A Turnkey Wood Printing Solution**

Through advanced printheads and high-speed binder jetting technology, the Shop System™ Forust Edition delivers high-resolution 3D printing of wood parts with realistic grain patterns. Additive manufacturing also offers a viable use for wood waste and intricate, complex designs previously unobtainable with traditional subtractive wood processing methods.

The complete system incorporates key safety features to enable 3D printing combustible wood powder and includes:

- Fabricate MFG build prep software, which allows users to print parts with no grain pattern or four grain patterns that can replicate ash, mahogany, and more.
- Shop System Forust Edition binder jet 3D printer with a build box of 350 x 222 x 200 mm (13.8 x 8.7 x 7.9 in) and a print speed of up to 1,600 cc/hr. That is about 21 mm or ⅔ of an inch in Z-height per hour.
- Forust Powder Station, which allows users to remove printed parts from the build box and recover loose sawdust powder for immediate reuse in the printer.
- Forust Wood Powder, a special blend of raw or unfinished sawdust from the traditional wood milling industry.
- Forust Binder, which comes in clear and brown colors to bind wood powder particles and create natural-looking wood grain patterns that flow across the entire part.

- A wood parts post-process guide that walks users through a recommended workflow for infiltrating parts after 3D printing with USDA certified bio-based resins.

After infiltration, Forust parts can be sanded, stained, polished, dyed, coated, and refinished in the same manner as traditionally manufactured wood products. Infiltrated Forust parts have strength similar to traditional wood and can be screwed or nailed.

Currently, the Shop System Forust Edition printer processes Desktop Metal-provided wood powders from verified and consistent supply sources. Guidelines are in development to allow customers to print their own recycled sawdust powders in the future.

Binder jetting is a 3D printing process that transforms powdered materials — metal, sand, ceramic or other powders — into highly dense and functional precision parts at high speeds. An industrial printhead selectively deposits a binder into a bed of powder particles creating a solid part one thin layer at a time, just like printing on sheets of paper. The technology is viewed as a desirable and sustainable production method, largely because of its high speed, low waste and cost, as well as material flexibility, as demonstrated by the Shop System Forust Edition.

## ***Dyndrite and SLM Solutions to Cooperate on Full Support for SLM Solutions AM Metal Printing Machines***

25 October 2022

Dyndrite™, providers of the GPU-accelerated™ computation engine used to create next-generation digital manufacturing hardware and software, announced a collaboration with SLM Solutions for support of the SLM® file format within its Application Development Kit (ADK). Through Dyndrite, SLM® customers will be able to design parameters based on unique aspects, or their unique needs, developing new IP, protecting any know-how, and gaining competitive advantage.

Dyndrite delivers an ADK which provides GPU-powered 3D CAD-to-print software development. Dyndrite provides the software power for generating toolpaths and rasterizing 3D data for additive manufacturing processes, including binder jetting, photopolymers and laser powder bed. Additionally, through an integrated Python API, Dyndrite brings full automation of CAD-to-print data workflows at a speed that fulfills even the most challenging production workflows or data requirements.

Dyndrite software enables the development of additive CAM, materials and process development, process qualification & calibration and automated production lines.

“The future of additive manufacturing is open,” said Harshil Goel, CEO, Dyndrite. “Only through democratization will the industrialization of additive manufacturing advance at a faster pace. Innovators need to rapidly experiment, protect their IP and be able to bring new solutions to market. SLM Solutions’ open architecture is an exemplar for the market.”

“At SLM, we enable and promote end-to-end AM solutions; it’s crucial to the success of our customers that this also entails materials and process parameters as essential ingredients outside the machine itself,” said Garrett Purdon, Vice President of NA Sales at SLM Solutions. “SLM Solutions’ Open Architecture initiative enables Dyndrite and others to manipulate and make adjustments in order to provide our install base a competitive edge in their segment - adding software as a weapon in their arsenal.”

Dyndrite will immediately incorporate SLM® single and multi-optic support directly within its ADK. The companies will work together to ensure that users can fully create SLM® parameters and toolpaths to fit their individual needs, maximizing materials development and application or part-specific build rate strategies.

## ***Fadata and NTT DATA Together Deliver the Global Insurance Industry a Cloud-Based Managed Service Solution***

30 October 2022

Fadata and NTT DATA have joined forces, combining operational capacity and knowledge and expertise in the insurance industry to offer insurance companies worldwide a streamlined single solution for digital transformation. The new strategic partnership utilises the breadth and versatility of Fadata's specialised software, INSIS, and its capabilities as a managed service solution and harnesses NTT DATA's ability to innovate IT and business services across the globe to roll it out. Formed from mutual ambitions, the collaboration of these two companies promises to modernise the insurance industry's legacy software with a managed service hosted solution facilitated by a fast-onboarding process, which shortens time to market.

Global IT solutions and service provider, NTT DATA, will begin onboarding and operating the INSIS software solution as a single cloud-based service solution. The two companies have collaborated harmoniously to achieve cloud transformation, by packaging the most advanced and comprehensive insurance process platform available across all lines of business and multiple geographies to fully exploit the cloud architecture. Insurers can now tap into the combined industry expertise, product knowledge and people of Fadata and NTT DATA. Already, the new partnership and its core software solution has resulted in a landmark deal with one of the largest, most well-known and respected insurance Groups in the world.

Vito Treccarichi, Partner for Global Account Management, NTT DATA, commenting on the new partnership says: "NTT DATA is committed to expanding our services to the insurance industry. Our ambition is to utilise our expertise in the cloud to help insurers overcome the key challenges they face when approaching their often daunting digital and technology transformation process. Collaborating with Fadata, we have reached an important milestone in our integration of insurance services. Offering software as a single service solution for global clientele, with a firm foothold in the cloud setting, we are confident that the value of the platform will ensure we become a leader in the evolution of the insurance industry."

Anders Holm, Chief Commercial Officer, Fadata, adds: "This is a testament of the Fadata growth strategy with our particular focus to - at a fast pace - provide business value to the European market through onboarding of standard solutions. Working in unison with NTT DATA to satisfy global customer requirements, we are proud to offer a single managed solution that is not only able to serve in many jurisdictions, but also cover the entire spectrum of Property & Casualty, Health and Life & Pension insurances. Notably, collaborating with NTT DATA has enabled us to be extremely resourceful and competitive in the cloud landscape and we are looking forward to the future of our exclusive joint venture and the many clients we can support to adapt and thrive in the rapidly growing digital format."

## ***Informatica Launches Intelligent Data Management Cloud for State and Local Government***

1 November 2022

Informatica®, the enterprise cloud data management leader, announced the availability of the Intelligent Data Management Cloud™ (IDMC) platform for state and local governments at the Informatica World Tour in Washington, DC.

In recent years, state and local governments experienced firsthand how digital transformation can help them better serve citizens. All levels of government require trusted data to digitize their day-to-day operations. These departments must integrate disparate, legacy data sources such as demographic and census data, motor vehicle information, and municipal records into a single, trusted enterprise view.

“Data is critical for achieving situational awareness in any health system. When COVID-19 arrived in New York City, we needed to support our medical workforce with actionable data to better respond to the pandemic — Informatica helped us do just that,” said Alexander Izaguirre, Chief Data Officer, NYC Health and Hospitals.

Informatica's IDMC platform that currently processes over 44 trillion transactions on the cloud each month is designed to help state and local government agencies deliver timely and efficient public services that offer the following capabilities:

### **Enhance Digital Citizen Experiences**

As government leaders look to shape cities of the future, they are actively responding to citizen needs for better services. Citizens today expect timely solutions from government agencies as they do in their personal lives. Agencies need to modernize legacy information systems to unlock data and integrate hundreds of applications and data sources, including those from third parties. Siloed, duplicated, and incomplete views of citizen identity and information need to be combined, cleansed, cataloged, and governed to improve data quality for more accurate insights, thus enhancing citizen experiences. Informatica's IDMC provides a 360-degree view of the citizen information that unifies data across different departments and agencies. This helps increase access to consistent, trusted information, allowing workers to provide faster, more reliable, and more comprehensive services while reducing the risk of fraud, threat, and misuse of data.

### **Manage Crisis Response and Recovery Quickly**

The success of an organization's response to a crisis hinges on its ability to manage the accompanying deluge of data in a timely manner. Whether responding to a natural disaster or a disease outbreak, the capability to leverage data as an asset is critical. Organizations must establish a way to collect and store data and ensure that all users, from data scientists to policymakers, make decisions based on high-quality data. Trusted data serves as the basis for informed decision-making and coordinated and centralized systems for better identifying citizen needs and assisting vulnerable populations. Informatica's IDMC improves visibility across agencies and enhances collaboration and real-time analysis by delivering actionable data that improves situational awareness

### **Increase Cybersecurity, Privacy, and Compliance**

Agencies must provide the proper data security, privacy, and protection level to meet compliance mandates. To ensure compliance and protect personally identifiable information (PII), organizations need data security solutions that de-identify, de-sensitize, and anonymize sensitive data. IDMC supports compliance with the CCPA and is certified for SOC2, TX-RAMP, and FedRAMP, providing the peace of mind that companies need to operate safely in cloud platforms. It offers unified governance and

# CIMdata PLM Industry Summary

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privacy solutions to automate discovery and protect citizens' data. Furthermore, the platform complies with regulations while enabling safe data democratization, consumption, and responsible use.

"The passage of new infrastructure spending legislation in the United States requires state and local agencies to ensure that taxpayer money is responsibly budgeted, allocated, tracked, and audited. With complex projects such as highway and bridge repair, smart cities, and traffic control, organizations need solutions to aggregate, clean, catalog, govern, and master their data," said Jitesh Ghai, Chief Product Officer at Informatica. "State and local agencies can improve the effectiveness and efficiency of social program implementation by powering real-time, decision-making with fit-for-purpose data."

## ***New in SprutCAM 16.3.2 release***

31 October 2022

What's new

1. New constrained toolpath calculation mode
2. New parameter and transition types in the Additive operation

New in constrained toolpath calculation

In this release, we have added a new toolpath calculation mode when working with work order constraints. To enable a new toolpath calculation, you need to go to the properties of the restricted zone.

New in the Additive operation

Added the ability to set a certain distance for safe transitions if it should differ from the level of the safe plane. Also added the ability to select the type of the first and the last approaches.

What we made easier

- Updated cycles in interpreters
- Added Nachi and Doosan robots to the MachineMaker library
- Added a check for the adequacy of the created machines in MachineMaker
- Localized CAD module
- Returned work with inlets and outlets at machines in the drop-down list

What's fixed

- Fixed bugs when working with equipment
- Fixed errors when importing files in 3dm format
- Fixed bugs in the job zone and restricted area
- Fixed a bug when changing units of measurement in the system settings
- Fixed bugs in the MachineMaker interface
- Fixed bugs in CLData for the postprocessor to work correctly
- Fixed bugs with Pick and Place operations
- Fixed errors with the installation of the program
- Fixed bugs in the Hole machining operation
- Fixed bugs related to localization
- Fixed errors in the 3D contour operation

# CIMdata PLM Industry Summary

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- Fixed bugs when working with the pencil machining strategy
- Fixed bugs in the Engraving operation
- Fixed errors with visualization of spindle rotation during multi-channel machining
- Fixed errors in the Rough layered operation
- Fixed errors in recognition of geometric elements
- Fixed bugs when working with the robot map
- Fixed bugs with polar interpolation
- Fixed the occurrence of critical errors
- Fixed a bug when closing SprutCAM
- Fixed preview bugs
- Fixed bugs when working with the U axis
- Fixed errors when transferring machines from MachineMaker to SprutCAM
- Fixed bugs when working with a robot on rails
- Fixed errors when working with TCP in robotic cells
- Fixed a bug when working with a work order
- Fixed a bug in the operation Horizontal sections machining
- Fixed errors in thread milling cycle parameters
- Fixed bugs in the distribution postprocessor for Fanuc
- Fixed errors during the SprutCAM installation
- Fixed bugs with subscription Practice
- Fixed bugs with toolpath correction in the rough waterline
- Fixed errors when saving the project
- Fixed errors when working in Windows 7
- Fixed bugs in holder control
- Fixed bugs with freezes when calculating the toolpath
- Fixed errors when setting a safe level
- Fixed bugs in 2.5D Contour operation

Total 156 changes were made to SprutCAM containing bug fixes and workflow improvements.

## Conclusion

Users with active technical support have already received notifications about the release of the new release and can upgrade.

If you have any issues, please, contact our support team.

## ***Release Announcement of CADdoctor for NX Ver.4.3***

31 October 2022

Elysium has released CADdoctor for NX Ver.4.3.

Enhancement

Changed supported CAD version

- Supported versions: NX 2007 Series, NX 2206 Series

## ***SCIA Engineer 22: Usability enhanced***

3 November 2022

SCIA, the European market leader in structural analysis software and part of the Nemetschek group, announces the launch of SCIA Engineer 22. The company's core purpose is to delight its customers by helping them create their best structural designs. In doing so, SCIA regularly improves its software with extended and enhanced functionalities.

Last year, with SCIA Engineer 21, the company launched a revolutionary new interface, placing its software at the forefront of global structural analysis software.

The focus of SCIA Engineer 22 is on SCIA customers and streamlining their daily workflow. The new version allows users to have a better insight in the economy of the design, helping save material. Not unimportant in the current economic conditions!

With time efficiency in mind, SCIA sped up lots of commonly used actions performed in the software: numerous input operations now require fewer clicks, while others benefit from newly added templates or automation. What's more, version 22 offers better, clearer and, if required, more compact presentations of both input data and results.

### Time efficiency

Some of the most striking updates that translate into a boost in time efficiency include new reinforcement templates for columns in concrete, the automatic design of reinforcement with SLS requirements taken into account and an Extended AutoDesign report. For results too, there are some notable updates: there's a hotkey to refresh the results, a user-assigned hotkey to repeat the last command, and an easier way to close the results panel.

### Material savings

Next to time efficiency, material efficiency is an important aspect of a civil engineer's job. Especially for concrete structures, important improvements have been put in place. It is now possible to evaluate the economy of the design via the weight of reinforcement per cubic meter of concrete in the extended AutoDesign report.

Nele Deckers, Director Product & Design, says: "Our customers are at the heart of everything we do. Improving the user experience is one of the focus points, and this was already started with the previous release, so now with SCIA Engineer 22, we prioritised improvements based on the feedback we received. But next to this, we are also proud to deliver various functionalities for the design of concrete, steel and timber structures."

## ***Siemens expands access to advanced simulation with Simcenter Cloud HPC***

1 November 2022

Siemens Digital Industries Software announced that it has added scalable, on-demand, high performance simulation capabilities to Siemens Xcelerator as a Service (XaaS) with the launch of Simcenter™ Cloud HPC software. As part of the ongoing collaboration between Siemens and Amazon Web Services (AWS), the new service is hosted on AWS, optimized for Simcenter solver technologies, and managed by Siemens.

# CIMdata PLM Industry Summary

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This service can help reduce the costs traditionally associated with on-premise high performance computing (HPC) deployment, allowing organizations of all sizes to access the benefits of advanced simulation, gain deeper insight into the performance for their products, and drive more informed engineering decision making.

“Having access to sufficient HPC resources is essential to get the most value from engineering simulation and this issue is a constant challenge for engineering departments with evolving needs,” says Jean-Claude Ercolanelli, Senior Vice President, Simulation and Test Solutions, Siemens Digital Industries Software. “By providing flexible, accessible and scalable HPC resources in the cloud, we are offering our customers a new freedom to rapidly scale up or down as their business requires, avoiding locked capital and paying only for what is used.”

Simcenter Cloud HPC is accessible seamlessly from the desktop simulation tool with no additional configuration needed. It provides immediate access to near-unlimited compute capacity, avoiding the complexity and cost of accessing third-party cloud services. Organizations of any size can benefit from instant-on HPC availability.

For small and medium-sized businesses that struggle with the cost of on-premise heavy compute hardware, this solution can help these businesses be more competitive in the industry. Larger enterprises can supplement on-premise clusters with near-unlimited cloud compute when extra capacity is needed to meet deadlines. This opportunity allows for significant capital expenditure (CapEx) savings by reducing the amount of long-term investment needed for HPC.

By using the accessibility of the technology platform provided by Siemens and AWS, including Amazon Elastic Compute Cloud (Amazon EC2), the engineering team at Heraeus Noblelight sees the potential to advance the accuracy and fidelity of their simulations while continuing to meet project deadlines and reducing run times for large models from days to hours. “Models are becoming more accurate, and we need to capture more physical realism. You can guarantee that we will frequently require more powerful HPC resources in the future,” said Dr Larisa von Riewel, Group Leader - CAE, Heraeus Noblelight. “Simcenter Cloud HPC offers that agility, which translates into a more competitive offering for our customers”

“We continue to expand access to AWS’s extensive HPC resources including Amazon EC2 instances that use the latest generation of processors, and Elastic Fabric Adapter (EFA) which allows customers to run applications requiring high-levels of inter-node communications at scale on AWS. Through these resources, our customers are able to meet the engineering challenges of tomorrow, and accelerate innovation,” said Ian Colle, general manager Batch Computing and HPC at AWS.

## ***SimScale Launches Online Learning Center for Cloud-Native Engineering Simulation***

2 November 2022

SimScale is a fully cloud-native simulation platform accessed through a web browser and used by engineers globally. The platform is used by leading engineering and design firms in diverse industries, including construction, automotive, turbomachinery, electronics, industrial products, and medical devices. With easy CAD handling and simple yet powerful features, engineers use SimScale for computational fluid dynamics (CFD), Finite Element Analysis (FEA), and related analysis types.

The new learning center has 85 videos so far and targets all levels, from beginners to advanced users. It includes structured learning paths for CFD and FEA, integrating both the theory and applied examples that are common in industry. The learning center is developed for enterprise-wide deployment where distributed teams of engineers can access on-demand learning resources and onboard faster.

# CIMdata PLM Industry Summary

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The learning paths contain introductory training videos and resources on the SimScale platform, an introduction to the simulation interface, CAD import and cleanup, meshing, and post-processing with results analysis. Specific case studies in the CFD track are aimed at a broad audience. They include rotating machinery examples, electronics cooling, indoor thermal comfort, pedestrian wind comfort, and building aerodynamics. Similarly, the FEA learning path has valuable examples including non-linear static analysis, such as snap-fit applications and drop test/impact testing.

Engineers can use the on-demand training videos, corresponding CAD models, and course notes included in the learning center. The learning center is free to all Professional Plan subscribers, and more topics are being added regularly. It comes with a structured certification program for each skill level completed that can be easily shared on a user's LinkedIn profile.

## ***VOLTA and modeFRONTIER 2022R3 available now***

4 November 2022

**VOLTA expands its Business Process Management usability with a new Data Flow tool designed to create executable BPMN models faster. modeFRONTIER comes with improved node configuration usability.**

### **BUSINESS PROCESS MANAGEMENT**

#### **New Data Flow tool facilitates business processes mapping**

Manually creating a consistent data flow of various elements in a BPMN graphical representation is often time-consuming. With the new Data Flow tool, available in the VOLTA Modeler environment, you can easily connect all the elements of your complex process to create error-free BPMN models ready to be executed in the VOLTA Process Manager.

### **USABILITY**

#### **One-click closer to node configuration in modeFRONTIER**

Running a simulation workflow often requires a series of time-consuming node configurations. You can now speed up and make more efficient the integration and process automation process by configuring all of your in-house or third-party CAD, CAE and general use software in one-click within the modeFRONTIER workflow environment.

#### **Speed up your Design Space Exploration strategies**

The VOLTA Planner Source Data Module enables you to re-use both data generated by previous design studies and datasets. And, it automatically checks session compatibility with plan configuration, the model and model dependencies. This gives you even more opportunities to utilize existing design knowledge to fine-tune your exploration or optimization strategy and obtain better designs in less time.

#### **New format tool in modeFRONTIER**

When defining the variable formats of input, output, objective, constraint and expression, you can now either choose from a list of the most common formats or simply type your custom format. This usability improvement also includes the possibility to define the format of different types of variables at project level.

#### **Save time with the new run option in VOLTA Planner**

VOLTA design optimization technology now immediately recognizes which designs are potentially unfeasible because they break constraints on inputs. This is beneficial especially in the context of complex parametric design projects. You can save a considerable amount of computation time by opting

# CIMdata PLM Industry Summary

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not to run unfeasible designs.

## **Enriched Python ecosystem in modeFRONTIER**

With the new charts module available in pyCONSOLE, the environment that integrates Python and the design space, you can now plot and customize Designs, Distribution and RSM charts in the Design Space.