

# PLM Weekly Summary

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### CIMdata News

Altair Continues to Expand Solution Portfolio for Simulation and Analysis of Mechatronics Systems CIMdata Commentary

12 Nov 2019

Key takeaways:

- Altair's vision to provide systems modeling and simulation for cyber-physical systems is driving portfolio expansion beyond the traditional mechanical domain.
- Altair's 2017 IPO provided capital investment to aggressively pursue expansion.
- SimSolid technology has the potential to significantly expand the usage of analysis to design engineers as well as to add value to simulation specialists.
- Polliwog, a leader in Korean Mechatronics solutions for LG and Samsung, is the latest acquisition by Altair supporting expansion into electronics/PCB design and analysis.
- The Datawatch acquisition in 2018 is now integrated with the Altair platform and rebranded as KnowledgeWorks to bring Artificial Intelligence (AI) and data analytics directly into play for up-front CAE.
- Altair predicts CAE specialists will become leaders in the application of data analytics throughout the product development lifecycle.

Products in all industries are becoming more and more dependent on electronics and software functionality including being connected as "smart" Internet of Things (IoT) devices. The design and development of complex cyber-physical systems requires well integrated capabilities for cross-disciplinary mechatronics simulation, analysis, and design optimization supported by advanced data analytics. Altair continues to round out its systems modeling and simulation portfolio to enable their vision of model-based and simulation-driven design. <sup>1</sup>

As part of this vision and product strategy, Altair's KnowledgeWorks solution has been developed from the 2018 acquisition of Datawatch. The SimSolid technology was also acquired in the latter part of 2018 and this solution is now integrated with the HyperWorks platform. And at the recent 2019 Altair Global Advanced Technology Conference (ATC) event, the acquisition of Polliwog was also formally announced.

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<sup>&</sup>lt;sup>1</sup> Travel and/or other expenses related to this commentary were provided by Altair.

### Altair's Vision for Engineering

Altair has been a recognized leader in mechanical design optimization with the OptiStruct technology and the application of high-performance computing (HPC) for state-of-the-art multi-physics simulation. The robust exploration of potential design spaces to create new product innovations continues to drive the need for advanced modeling and simulation solutions leveraging and supported by affordable and scalable cloud solutions combined with HPC.

Altair's position is that simulation and modeling should drive 3D design rather than just be a verification of a robust design. Mr. Jim Scapa, CEO and co-founder, summed up this vision as transforming engineering decisions from the very beginning of concept development. Altair has pursued this vision for over two decades and has recently expanded their application suite to include new technologies for rapid analysis of CAD geometry including assemblies (SimSolid), advanced data analytics (Datawatch), and PCB/electronics simulation and design (Polliwog), and is hosting their applications in the cloud via the Altair 365 platform.

Altair is focused on integrating advanced data analytics to deliver on their vision of transforming engineering decision making and believes that the use of AI/machine learning technologies will have a game changing impact on the way that product development and manufacturing are done.

### IPO Raised Capital for Investments in Technology and Skills

In 2017 Altair raised capital by executing an initial public offering of company shares on the NASDAQ market with symbol ALTR. The capital raised has enabled Altair to make a number of strategic acquisitions over the past two years including *SimSolid*, Datawatch, and Polliwog. Furthermore, they invested in developing a vendor agnostic cloud platform including a patented "Rapid Scaling Algorithm" and also invested in an improved, consistent user experience for the HyperWorks platform and suite of applications.

The recently acquired *SimSolid* technology is quite unusual and intriguing. Based on a set of a proprietary algorithms developed by Dr. Victor Apanovich, it enables certain types of simulation models, including even reasonably large and full featured CAD assemblies, to be rapidly modeled and solved with the complexity of the finite element model preparation, meshing, and solving largely hidden from the user. While initially targeted more at design engineers who are not experts in FEA and CAE, because it is so much easier to learn and use, the extremely fast and almost interactive computational solver has led to early adoption even by traditional CAE simulation specialists. However, Altair expects that with *SimSolid* technology integrated with its other design-oriented tools, more and more design engineers will get comfortable doing their own baseline CAE analyses before they release a part to a simulation expert for more detailed analysis and validation (as required) or to manufacturing engineering. It should be noted that *SimSolid* works best on materials with well-known and homogenous or continuous properties—so it is not yet appropriate for composites or other types of advanced hybrid materials. Altair customer's like Don-Bur are praising the speed improvements SimSolid is delivering.<sup>2</sup>

#### 2019 ATC Event in Detroit

The annual global Altair Technology Conference (ATC) was recently held in Detroit with over 1,000 registrations and a full venue at the MGM Resort. Mr. Scapa stated that sales in 2018 were nearly \$400M, and their growth is strong and steady.

Mr. Scapa stated that more and more of their customers are applying OptiStruct in concert with the HyperWorks suite of S&A applications to address their complex engineering processes. Optimization,

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<sup>&</sup>lt;sup>2</sup> See Don-Bur video: https://www.altair.com/resource/simsolid-drives-down-analysis-time-at-don-bur

data analytics, and the need for computing speed were emphasized with customer examples from across different industries.

A fascinating discussion and associated market forecast "AI and the Future of Product Lifecycles" was made by Mr. Mamdouh Refaat, Chief Data Scientist, as he discussed AI and data science applications to CAE. He believes that CAE analysts will become simulation data scientists faster than any other professional role because they already understand the way to apply CAE tools with HPC to solve complex analyses. He presented Figure 1 when summarizing the artificial intelligence promise. He also contends that the IoT big data analytics process is very similar in nature to performing simulations—preparation, constructing the model (data grooming), executing the model (learning), and post-processing. Combining simulation with field data will improve the product development process as well in service operations.

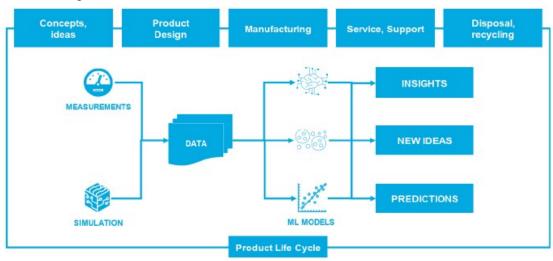


Figure 1—The AI Promise

(Courtesy of Altair)

CIMdata also had the opportunity to interview several of Altair's senior technical leads on their plans and goals: Mr. Sam Mahalingam, Mr. Uwe Schramm, Mr. Jeff Brennan, and Mr. James Dagg. It was satisfying to see the passion and consistency of overall vision and purpose from these senior executives, even though each is focused on different aspects of the ultimate solution—simulation lifecycle management/IDE services, simulation solvers, cloud expansions, and consistent user experience. From their different points of view, they discussed the "Challenge Champion Model" which allows continuous training of the data sets/models as new data (i.e. experience) is discovered. Two additional Altair data scientist leaders, Mr. Christian Kehrer and Ms. Fatma Kocer-Poyraz, explained the need for closed-loop learning throughout the product lifecycle. They have a clear definition of Digital Twin—a math based representation of a product *throughout its life*. Their vision is that a digital twin is organic, and it must continuously evolve as experiences are discovered from products and systems operating in real world user environments using field data to make the digital model representation higher and higher fidelity as those experiences are discovered.

In the age of IoT and Industry 4.0 where data is collected continuously from products in service, the digital twin simulation models can continuously be refined to accurately predict the ongoing performance of a product. Field upgrades and maintenance can be improved after product introduction with insights harvested using this digital twin capability. Figure 2 shows the digital twin throughout a products life using Altair's Connect. Altair is assembling a portfolio of applications to enable such

lifecycle improvements based on simulation, optimization and analytics. Smart IoT systems obviously have a large amount of electronics content and so Altair took action to find a solution for EDA/ PCB engineering tools. The Polliwog acquisition announced October 10<sup>th</sup> should provide a more comprehensive bridging of the disciplines involved in the systems engineering process.

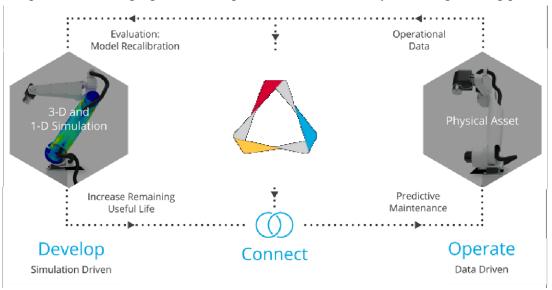


Figure 2—Digital and Physical Data Connected (Courtesy of Altair)

CIMdata looks forward to seeing how connecting the digital twin and applying optimization throughout and across the mechanical and electronics domains can be improved now that Altair owns a proven PCB modeling and design tool. Altair technology principals clearly appear to understand the power that AI/machine learning/deep learning can bring to engineering decision making. They recognize that selling value-added engineering solutions is more compelling than selling merely a CAE platform and this is what drives their acquisitions. These new capabilities will be essential to their customers in achieving value from investments in digital engineering and digital twin initiatives in the years ahead.

Altair's flexible licensing model across the desktop, the cloud, and HPC is designed to make the initial use and expansion of Altair technology straightforward and cost effective for companies of all sizes, especially for small to mid-size organizations that have limited IT resources and expertise. Given their simulation and HPC track record, CIMdata believes that Altair has a well architected solution set for the flexible use of the engineering technologies they provide. And based on the cross section of industries represented at the ATC, it is indeed encouraging that they are expanding their customer base globally and beyond their historical base of the automotive/vehicle industry.

#### **Conclusion**

CIMdata believes that the Altair solutions and their flexible licensing model offers an appealing choice for any discrete manufacturing company who has the need to improve decision making through product concept, design, and virtual validation. They have expanded their proven HyperWorks platform for simulation modeling, analysis, and data management to utilize the cloud as well as HPC and provided an integrated data analytics capability. Investment in a modern and consistent user interface across all the HyperWorks applications should greatly improve ease of use for a broader range of users as well as a reduced learning curve for new adopters. And the *SimSolid* technology has the potential to be a major factor in the long time quest towards the democratization of simulation.

We expect to see more from Altair as the simulation and data analytics capabilities expand to include decision making across the entire product lifecycle. Altair has now positioned itself to model, simulate, and analyze mechatronics products and their connection as smart IoT devices and services—be they robots, cars, or home appliances/gadgets.

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Leading the Challengers: 2019 IFS World - CIMdata Commentary

13 November 2019

Key takeaways:

IFS has seen significant growth in the last several years and plans to greatly exceed those results by 2021.

The company has invested significantly to unify their global operations enabled, in part, by running IFS on IFS, and working to dramatically expand their global partner ecosystem.

IFS continues to emphasize their portfolio beyond ERP.

IFS is expanding investment in their platform to improve the user experience and to deliver these capabilities on-premise and in the cloud.

CIMdata had the pleasure to attend the IFS World Conference 2019 held from 8-10 October 2019 at the Hynes Convention Center in Boston, MA. According to Mr. Darren Roos, the CEO of IFS, this was their biggest event ever, with 40% more attendees than in 2018. Mr. Roos explained that IFS went to great lengths to make this event truly customer-centric with coffee and snacks provided by different IFS customers, and many attendees flying to the event on planes maintained using IFS solutions. This commentary summarizes CIMdata's impressions of the event and the great progress made by the company in its transformation over the last eighteen months.

Travel and/or other expenses were provided by IFS.

#### One Company

Mr. Roos joined IFS from SAP just before IFS World Conference 2018. He joined a growing company that aspired for market success well beyond their Nordic roots. IFS sees themselves as an underdog in the global enterprise software market but with a particular niche. Their customers were not necessarily number 1 or number 2 in their markets, but many strove for those positions. IFS would help them get there, as suggested by their hashtag for the event "#forthechallengers."

While IFS is smaller in revenues than other enterprise software companies, they are not really a challenger in several key application segments: enterprise asset management (EAM); field service management (FSM); and maintenance, repair, and overhaul (MRO). In stark contrast with their claimed status as a challenger, IFS regularly gets kudos from the leading IT analyst firms in their market reports on EAM and FSM, demonstrating their strengths. Their enterprise resource planning (ERP) capabilities score high against other mid-market ERP solutions. Given these consistent results, the company is clearly starting from a position of relative strength. During the event they added to this strength by announcing their acquisition of Astea International, a market leader in FSM.3 Mr. Roos claimed that adding Astea to their existing solutions would make them the undisputed number 1 in the segment, with

<sup>&</sup>lt;sup>3</sup> https://astea.com/resources/blog/2019/10/ifs-astea-announce-definitive-agreement-to-strengthen-global-leadership-in-fsm-business/

over 1,000 customers from IFS and Astea, and over 8,000 WorkWave FSM customers (a 2017 acquisition).

But there was still a lot of work to do to reach their corporate goals. To better serve their global customers IFS had to work like one company stated Mr. Roos. Different regions were selling different solutions in different ways. It was difficult for their customers to engage with each region acting independently. According to Mr. Roos, their first big shift was moving from 8 regions working mostly independently to 3 regions all working on a standardized business model.

They also considered taking a step that other enterprise software companies have taken before them: running their company on their own software. IFS was not a good target for using IFS Applications stated Mr. Roos. They considered other enterprise solutions but, in the end, decided that they needed to learn their own solutions by using them deeply. The company implemented IFS Applications 10–including finance, human resources, and procurement, the "full gamut" according to Mr. Roos–in 24 weeks. He said it was a great learning experience that taught the company a lot about how to make it easier for their customers to adopt their solutions, including important lessons around localization and data migration.

The company has grown strongly over the last few years, but their goals are even loftier. IFS reported calendar year 2018 revenues of \$606 million, but plans to grow to \$1 billion by 2021, a 65% increase, with over 50% of revenues coming from new customers. IFS knows it cannot get there alone and is working hard to grow their partner ecosystem to help them collectively meet that stretch goal.

### Growing the Ecosystem

During his remarks, Mr. Roos pledged to triple their partner ecosystem resources. This will certainly help. Mr. Michael Ouissi, IFS' Chief Customer Officer, talked about how IFS is using those new resources. Mr. Ouissi positioned IFS as experts in five industries: Aerospace & Defense; Energy, Utilities & Resources; Engineering, Construction & Infrastructure; Manufacturing; and Service Industries. Mr. Ouissi stated that by focusing on specific industries and specific solutions—ERP, EAM, and Service Management—they can deliver a superior customer experience. They do not have to sell ERP to every customer in the world, just where it makes sense.

Mr. Ouissi said that IFS has indeed tripled their investment in their channel resources. Their goal is to have 100% of partner service resources certified by IFS. IFS wants to decrease their service delivery and focus more on delivering more high value-added services. This makes sense, and echoes moves by their competitors. Services are necessary, as they help IFS stay closer to customers on the ground, but they are a drag on margins. IFS needs to get partners skilled up and fast. Several presentations included a chart showing that, in 2019, IFS has trained more partner resources than their own, and project significant growth in partner training in the coming years. In his remarks, Mr. Roos highlighted their success to date: in the Americas IFS saw a 171% year on year (YoY) increases in partner license revenue and 30% YoY growth in partner certifications; in Europe there was a 45% YoY partner license revenue increase, with 50 new channel partners added year to date; and in Asia-Pacific, they saw a 280% YoY increase in partner license revenue, with 22 new channel partners added year to date. This is great news, but to reach their expansive goals they must keep up this pace. They have some global services leaders like Tata Consultancy Services (TCS), Accenture, BearingPoint, DXC Technology, Infosys, and Tech Mahindra, as well as a growing roster of services partners around the world. To achieve their goals, IFS and their partners will have to grow services capabilities from scratch, as many services companies struggle to hire experienced people. IFS is also using social approaches to democratizing access to global IFS expertise. Their IFS Community is an on-line resource to help users engage with their peers around the world. Mr. Roos also spoke of a new concept, IFS Heroes, that will

provide access to 3,700 IFS experts drawn from their technical and consulting ranks. This new platform is intended to aggregate needs and provide more ready access to able assistance.

During the Influencer track sessions, IFS also provided an update on the IFS Applications platform.

### Delivering the Platform

IFS Applications has long been known for delivering a comprehensive enterprise platform offering a range of applications. Figure 1 shows how IFS is positioning their platform today. It reflects their focus on their five core industries and three key enterprise applications.

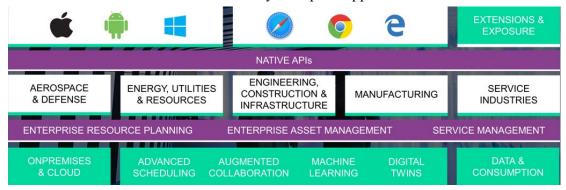


Figure 1—The IFS Applications Platform (Courtesy of IFS)

Over the last several years, all of the leading enterprise application providers have taken steps to refresh their user experience. The consumerization of IT has raised user expectations and IFS' answer is Aurena, announced at last year's conference. Like their enterprise software competitors, IFS is working to provide a new, up to date, immersive user experience. According to Mr. Christian Pedersen, IFS' Chief Product Officer, Aurena is everywhere in their suite, delivered ahead of schedule. Aurena renders IFS to different browser types and form factors as suggested in the top layer of Figure 1. Mr. Pedersen claimed that mobile was now a "first class citizen" in user experience design, using the same framework and same business rules across all delivery options. The IFS Aurena Bot, their intelligent assistant, provides a new way to interact with IFS. It can be accessed from a user's favorite messenger app or Aurena natively. Users can react to prompts and issue voice commands to kick off business processes. It can be set up to be a real assistant, claimed Mr. Pedersen, so that it proactively alerts you about new information or pending tasks, for example.

Mr. Dan Matthews, IFS' Chief Technology Officer, took over to dig deeper into the stack and how they are delivering it. People-centric design is a core tenet, according to Mr. Matthews, one that he believes is powering their move forward. Over 4 billion people use the Internet each day, with over 3 billion on social media. User experience in enterprise software should leverage familiar patterns and people's IT expectations in clever ways. It can be simple things, like Favoriting something to make it easy to find the next time. Their use of the Progressive Web Applications framework, Mr. Matthews continued, helps make their applications feel more like installed software.

One of the things IFS users like about the solution is the ability to "Make It Yours." This almost always offers additional value, stated Mr. Matthews. He went on to describe three ways that IFS enables their customers to tailor their experience: configure; extend on the inside, and extend on the outside. These are all areas of continued investment according to Mr. Matthews.

Extending on the outside, using solutions like Mendix, PowerApps, Microsoft .NET, and JavaScript only works if these solutions have applications programming interfaces (APIs) to talk to. This is one

reason why, Mr. Matthews stated, IFS just made over 15,000 APIs available across IFS Applications and IFS Service Management, shown as a layer in Figure 1. These are RESTful APIs, the more modern way to integrate solutions, Mr. Matthews continued, an approach favored by developers. IFS believes this approach performs better and is more stable. In fact, Aurena relies on these same APIs. Mr. Matthews claimed that anything you can do in their software you can do using their APIs. They strongly believe that more people are taking an open APIs approach and joined the OpenAPI Initiative to lend their support.4 They have started to work with their partners to update their integrations using this new approach. CIMdata strongly agrees with this strategy and believes openness will enhance IFS' success.

IFS delivers their platform on-premise or on the cloud through managed services. The cloud version is the same code base as the on-premise version. Customers can buy perpetual licenses or Software-as-a-Service (SaaS). Mr. Matthews acknowledged that more of the audience was starting to choose SaaS and cloud, as evidenced in their financial reporting. But the choice remains with the customer. CIMdata believes that IFS is smart to offer their customers choice and to let them move in their own time. Several leading solution providers have forced their customers to move to subscription, with their customers' displeasure splashed across the Web. This is one of many reasons that IFS will continue to be rated highly by their customers, as customer satisfaction survey results showed during the event suggest.

#### Conclusion

CIMdata was impressed with the rapid progress made by Mr. Roos and his team in the last year. He joined IFS from SAP just before the IFS World Conference 2018 and clearly hit the ground running. During his remarks, Mr. Roos claimed that they are outgrowing the ERP market by a factor of three, with 100% of that growth being organic, a stark contrast to the growth through acquisition reported by their competitors. (Of course, IFS makes acquisitions too, with the Astea purchase announced during the event as an example.)

More importantly, 50% of revenues are coming from net new customers, stated Mr. Roos, with 50% win rates against SAP and 80% against Infor. If true, their success rates are exceptional and will be necessary for IFS to achieve their 2021 goals. Their partner programs are clearly on the right path and designed to rapidly grow partner capabilities. Again, they cannot succeed without growing that channel. Their focus on five industries and leveraging their best solutions will provide the focus they seek, and includes more than enough industrial prospects to keep IFS and their partners busy for years. IFS has refreshed its platform across the board, with Aurena offering a modern user experience across all delivery vehicles. The API approach should help them help customers to rapidly configure IFS to indeed make the solution the customer's own. Delivering IFS on Microsoft Azure is a great fit for their target audience and has shown good progress to date. CIMdata hopes that IFS is looking beyond their current architecture to a multi-tenant future, since it appears this is where industry is headed. But if IFS reaches their lofty financial goals they will certainly have the money to support the work necessary and to continue to lead the "challengers," their customers, to continued market success.

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Make Everything Smarter: Inforum 2019 – A CIMdata Commentary

14 November 2019

<sup>&</sup>lt;sup>4</sup> <a href="https://www.openapis.org/">https://www.openapis.org/</a> includes Atlassian, Bloomberg, CA Technologies, eBay, Google, IBM, IFS, Microsoft, PayPal, and SAP, among others.

### Key takeaways:

Infor made an early commitment to multi-tenant cloud with their industry-focused CloudSuite strategy.

With judicious acquisitions like GT-Nexus (now Infor Nexus) and Birst, and internal developments like Coleman, Infor is ready to move to third-generation "Intelligent CloudSuites."

Infor is innovating across the board, applying analytics and AI in their products, for implementation, and to support on-going use to help customers optimize business outcomes.

CIMdata had the pleasure of attending Inforum 2019 held in New Orleans, LA on 23-26 September. Infor held an Analyst Event on September 23rd leading into the main conference sessions through September 26. CIMdata attended the analyst event and a few main tent sessions upon which this commentary is based.

Travel and/or other expenses were provided by Infor.

### Changes at the Top

CIMdata attended the Infor Innovation Summit in June 2019, which provided an excellent update on Infor, their strategy, and offerings.5 One would think that not much could change in a few short months. But the only constant is change, as some have said, and Infor saw big changes in the executive suite in August.6 Mr. Charles Philips, the former CEO, is now Chairman of the Board, and Kevin Samuelson, a 14-year Infor veteran of M&A and CFO roles, was named CEO, a big transition, as Mr. Philips led Infor in a time of great change and significant growth. Mr. Samuelson clearly helped architect some of this success in his M&A and finance roles. He is well positioned to take over company leadership. The same press release listed new expanded roles for other company veterans. Mr. Soma Somasundaram, the CTO, also now fills a newly created President of Products position.

The other change was in the way that Infor's executives and their lead investor, Koch Equity Development (KED), spoke about a potential initial public offering. Over the last two years, public statements by the company talked of an IPO in the near future. As recently as January 2019 a press release announcing a \$1.5 billion infusion from KED was titled "Infor Announces \$1.5 Billion Investment Ahead of Potential IPO" that suggested an IPO in 2019 or 2020.7 When asked a question about the IPO at the Analyst Event the timeline seemed to have stretched, with no target in mind. They emphasized that Golden Gate Capital has been with Infor since 2002, so they have been in it for the long term, as KED certainly is based on their comments at Inforum 2019 and previous events. This should have no practical impact on Infor's customer base as their current investors seem more than willing to keep the investment taps open as need be.

#### Third Generation "Intelligent" CloudSuites

Infor is a significant player in the enterprise software market, with FY2019 revenues of \$3.2 billion. Enterprise Resource Planning (ERP) offerings have been at the core of Infor's business just as they are at the core of businesses that adopt them across a wide range of industries. Companies need to buy things, make things, hire people, do their books, deal with customers and suppliers, and a range of other functions, and ERP solutions have evolved to provide many of these functions in one system. In his remarks at the Analyst Event, Mr. Somasundaram described ERP as an expansive solution whose

<sup>&</sup>lt;sup>5</sup>CIMdata's commentary on the event can be found here: <a href="https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/12223-designed-for-progress-2019-infor-innovation-summit-commentary">https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/12223-designed-for-progress-2019-infor-innovation-summit-commentary</a>. This commentary has background and graphics that provide more background on what is covered here.

<sup>&</sup>lt;sup>6</sup> https://www.infor.com/news/infor-announces-executive-leadership-transition

<sup>&</sup>lt;sup>7</sup> https://www.infor.com/news/infor-announces-koch-investment

boundaries have blurred. He asked: "Can one monolithic ERP system meet the needs of a wide range of industries?" Infor clearly believes the answer is no, and put industry-centricity at the core of their product strategy. They built their CloudSuites around their strongest ERP solutions, each focused on different industry segments. Infor claims to have spent over \$3 billion in R&D in recent years to rewrite these core applications as multi-tenant cloud offerings. They believe this approach will help them drive industry-specific functionality more quickly. The core is supplemented by the Infor Operating Service (OS) layer. It includes shared services like user experience (UX), security, integration, data management, and localization services. For example, Infor Ming, le provides a common UX, with their in-house design studio Hook & Loop continually enhancing the UX across the Web and mobile. The Infor OS also includes optional shared capabilities like data management, Coleman, application development functionality, and intelligent applications. These integrated, focused applications appropriate to a target industry are part of this Infor OS level. For example, one important optional solution is Infor Nexus, their global supply chain network. Mr. Andrew Kinder, Infor Vice President for Industry and Solution Strategy, cited the following statistics: connecting 65,000+ businesses and 36,000+ suppliers and factories, with 40+ financial institutions, 15,000+ carriers, and the top 80% of third-party logistics businesses results in \$1 trillion in trade and processing over \$50 billion in global payments. Many companies are turning to these commerce networks to enable more dynamism in their value chains. Infor is well positioned to support that trend. Recent CIMdata commentaries offer more detail on Infor's approach.

Data may not be the new oil, but companies are looking for answers in data from their enterprise and beyond. In 2017, Infor acquired Birst, a provider of cloud-native business intelligence (BI), analytics, and data visualization capabilities to help organizations mine their data. 8 During that same year, Infor announced Coleman, which they described as "an enterprise-grade, industry-specific AI platform for Infor CloudSuite<sup>TM</sup> applications. 9 Infor's data lake embraces open standards, making it easier in add external data to Infor's own, giving Birst and Coleman more data to ingest for business benefit. At Inforum, Infor announced Artificial Intelligence (AI) as a Service, built on Coleman. 10 The service offers a wide range of APIs to tap into the data lake. The press release included an example from Flint Hills Resources who plans to use Coleman with Infor Enterprise Asset Management (EAM) to get better insights on their asset health to help them transform the way they do maintenance. This is a good example because it illustrates how elements of the Infor stack can work in conjunction to support new use cases that enhance business outcomes.

A presentation entitled "Infor OS and Coleman Update" drove that point home. Mr. Massimo Capoccia, Infor Senior Vice President for Technology, and Mr. Rick Rider, Infor Senior Director of Product Management for Infor OS and Coleman, began their remarks with key process indicators for the Infor OS, e.g., over 18 billion data lake objects and 600 million API calls supporting 1.6 billion business events at about 10,000 customers served by 8 different Amazon Web Services (AWS) zones. They described three phases of Infor OS evolution. Their initial release was dubbed the CloudSuite "Conception" phase, where they first offered industry-focused CloudSuites. The addition of Infor ION, expanded APIs, mobile access, their data lake, and early digital assistants moved them to the CloudSuite "Productivity" phase. Now, with Coleman and other technologies enabling robotic process automation (RPA), more AI applications, and AI built into Infor Accelerators, their rapid implementation methodology, Infor is firmly in the CloudSuite "intelligent" era.

<sup>8</sup> https://www.infor.com/news/infor-to-acquire-birst-infor

<sup>&</sup>lt;sup>9</sup> https://www.infor.com/news/infor-announces-coleman-ai-platform

<sup>10</sup> https://www.infor.com/en-sg/news/infor-delivers-coleman-ai-platform

During his Analyst event remarks, Mr. Cormac Watters, General Manager, Head of International Markets for Infor, provided more detail on their vision for Infor Accelerators 4.0. Mr. Watters preannounced Infor Process Intelligence, which will look at how processes are actually executed in Infor's solutions for comparison with industry benchmarks. Infor is partnering with Signavio, a global leader in web-based business process modeling and intelligence tools, to deliver this new capability.11 This will help Infor's customers more readily adopt industry best practices during implementation, and will also be used to monitor Infor's implementation process to support continuous improvement in service delivery. According to Mr. Watters, they are rebuilding their entire implementation methodology, looking for areas of improvement and opportunities to bring tools and science to bear. Like other software providers, Infor plans to leverage Agile methodologies to achieve a more rapid time to value.

### Expanding Infor's Go-to-Market Capacity

Infor has also invested significantly in building their global routes to market (GTM). Mr. Andrew Kinder, Infor Vice President for Industry and Solution Strategy, provided a great overview at the Industry Analyst event. Mr. Kinder stated that Infor has invested heavily in this area over the last several years. Their products are designed to go to market by industry. While that may sound straightforward, Mr. Kinder emphasized that Infor's GTM had to also vary by region because their industry opportunities vary widely by region. For example, while Infor claims market leadership in healthcare in North America, they have not translated that success to Europe. That said, they also have some "best of breed" candidates that could be the tip of the spear to enter accounts, like supply chain, workforce performance management, and asset performance management. This will be supported by their Alliances Partners and Channel Partners, as shown in Figure 1. They currently have about 2,000 Channel Partners with about 1,000 sales reps. According to Mr. Kinder, they currently have about 1,700 opportunities with Alliance Partners. They are also adding boots on the ground. For example, Mr. Watters stated they Infor trained over 1,000 non-Infor consultants in the last six months. Access to skilled, experienced implementation resources is the limiting factor in technology adoption, an issue facing PLM for decades.

Beyond just sales, Mr. Kinder described how Infor is co-innovating with some of their leading Alliance Partners. Examples cited included work on the digital plant and the workforce of the future with Accenture and HCL on construction and "field service 4.0." This is a good sign because system integrators do not make this type of investment if they do not see a payoff down the line.

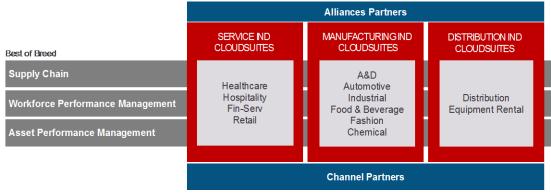


Figure 1—Infor's Routes to Market (Courtesy of Infor)

In the Tuesday general session, Mr. Watters and Mr. Rod Johnson, Infor General Manager Americas,

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<sup>11</sup> https://www.infor.com/news/infor-and-signavio-announce-strategic-partnership

laid out the various paths to Intelligent CloudSuites. They both agreed that getting your "Core-to-the-Cloud" was the most daunting path. Adopters like Flint Hills Resources used that approach—the age and complexity of their legacy application almost dictated it—and they think they got there 50% faster by biting that bullet. Going from the "Edge-to-the-Cloud" allows Infor to lead with their "world-class" offerings, like EAM, Infor Nexus, and PLM, stated Mr. Johnson. This approach is also suggested in Figure 1. Finally, they also see AI as an entry point in "AI-to-the-Cloud." Fill Infor's data lake with your enterprise data and apply Coleman and analytics to bring rapid time to value.

No matter the path, Infor will rely on Agile deployment methods to move from a "big bang" to multiple sprints. Using this approach, they expect the first working prototypes to be available in 3 months. To properly set expectations, they claim they will never change a "go live" date. If there is an issue, the delivery will be de-scoped. This can be tricky if an important function drops out of a given release but, as with much in organizational change management, setting the right expectation is half the battle in maintaining trust and organizational momentum. Mr. Johnson and Mr. Watters believe that companies will quickly get used to having multiple "go lives" making such changes routine. Infor Process Intelligence will help them learn more deeply with every implementation, improving the success of their customers overall.

Based on their comments, Infor believes that they can deliver 60% of desired functionality out-of-the-box (OOTB), with another 30% through "fine-tuning". Their industry focus could make these numbers more feasible than for other solutions. The last 10% is left for "extensions" that will be supported by "Infor OS extensibility." Enterprise software implementations have always suffered from too much customization, which is expensive and time-consuming to do, and then can lock an organization into old technology by making upgrades very difficult. Cloud is supposed to begin a new era, where companies will have to take OOTB because customization may not even be possible. Enabling "fine-tuning" and "extensions" using capabilities in the Infor technology stack is important because it allows customers to have it their way to the greatest extent possible. Infor claimed that some recent customers are seeing 50% reduction in deployment times. At the close of their session, Mr. Johnson and Mr. Watters mentioned the stretch goal facing their teams: pushing Infor to do it twice as fast at half the cost. That is something their customers would certainly endorse.

#### Conclusion

Inforum 2019 is an expansive event with a lively exhibit hall, The Hub, and many parallel sessions. This is as you would expect for an enterprise solution provider with a broad and deep portfolio. Infor pushed faster into the cloud than some others, committing to redesigning their solutions for multi-tenant cloud and using them to power their CloudSuite strategy. They have expanded their portfolio with key acquisitions like GT-Nexus (since rebranded as Infor Nexus) and Birst, and built some innovative solutions like Coleman to support their third generation Intelligent CloudSuites. Infor has also invested significantly in their GTM apparatus, including co-innovating with leading Alliance Partners like Accenture and HCL on new capabilities.

This is important because the enterprise software market is in a time of change that could provide significant opportunities for Infor. The move to the cloud in general is causing industrial firms to rethink their IT landscape, providing an opportunity. SAP introduced a step function into the product roadmap with HANA, their in-memory database. Companies will have to move to HANA and some may be rethinking their commitment to SAP. Oracle is trying to balance their Software-as-a-Service business (SaaS) with their role as a cloud infrastructure provider. This uncertainty may also induce some customers to consider a new provider.

Infor will need to be ready. If done well, Agile methodologies should make the implementation process

more efficient, increasing throughput potential and reducing stress in their customers. But they will still need to have access to more sales and implementation resources, another area of investment for both Infor and their partners.

While doing all this with a new management team might seem risky on the surface, the fact that Infor filled the positions from within bodes well for maintaining focus. Many on their team were the architects of their business and technical success. It was this team that made the bet on the cloud and it appears Infor is ready to cash in.

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## Acquisitions

# Accenture Announces Intent to Acquire Consulting Firm Silveo to Help Clients Reinvent Supply Chains and Manufacturing Processes

15 November 2019

Accenture has announced its intent to acquire Silveo, a French consulting company that provides solutions and services for supply chains and manufacturing. Silveo would join Accenture Industry X.0 — the part of Accenture that uses digital technologies to improve how companies engineer and manufacture products and services and operate industrial facilities.

The acquisition requires prior consultation with the relevant works councils and would be subject to customary closing conditions. Financial terms of the transaction were not disclosed.

Adding the capabilities of Silveo would enhance Accenture's ability to help clients reinvent their manufacturing and supply chain processes faster. This is important for manufacturers whose customers are demanding increasingly more personalized products and services.

Silveo was founded in 2014 and is headquartered in Neuilly sur Seine, France. Its 50 employees have strong expertise in solutions for supply chain and manufacturing, from planning to execution. Silveo offers several solutions that are based on software from SAP and Dassault Systèmes. For example, these solutions provide information from production lines in real-time, which helps companies react quickly to changes in demand, supply, and the capacity of plants.

Olivier Girard, country managing director of Accenture in France and Benelux, said: "Silveo would add valuable expertise to Accenture that would immediately reinforce our service offering and nurture our organic growth. Their team would strengthen our ability to help clients use digital innovations to efficiently manufacture and supply products that fit the quickly evolving needs of their customers."

Flavien Parrel, managing director for Accenture Industry X.0 in France and Benelux, said: "Silveo's expertise would enable us to better help clients benefit from digital technologies in industrial production. For instance, clients would be able to implement 'digital twins' of their factories. With these digital

models, they can simulate changes to the factories without actually touching them. It can make the production process much more flexible and efficient."

Silveo founders Marc-Antoine Peuch, Romain Durando, Laurent Autebert and Karim Ait El Mouden said, "We are passionate about helping companies make manufacturing and supply chains more flexible, automated, and driven by insights from data. Becoming part of Accenture Industry X.0 would be a fantastic opportunity for our team to bringing their skills to more clients and larger projects."

Other acquisitions Accenture has made in France are Cirruseo earlier this year, Arismore and altima° in 2017, and OCTO Technology in 2016; along with the recent announcement of the company's intent to acquire Sutter Mills.

Accenture has bought other companies to support Industry X.0 in the past two years. These include US product innovation and engineering company Nytec, UK innovation firm Happen, Irish consulting and manufacturing services provider ESP, and German technology consultancy Zielpuls.

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### Accenture Interactive Completes Acquisition of French Data Marketing Firm Sutter

15 November 2019

Accenture has completed its acquisition of Sutter Mills, a French firm that specializes in developing and executing data-driven marketing strategies for clients. Accenture Interactive previously announced its intent to acquire Sutter Mills on October 11.

The acquisition brings additional capabilities in data-driven marketing strategy, adtech and martech, strengthening Accenture Interactive's ability to help brands deliver relevant experiences at scale across all customer touchpoints.

Headquartered in Paris, Sutter Mills works with some of the most well-known French and European companies across various industries, including luxury goods, automotive and financial services, helping them develop more engaging relationships with their customers. The firm provides consulting and implementation services that enable clients to improve customer insights, increase the efficiency of their marketing strategies, and drive higher returns on their marketing investments. Sutter Mills has expertise in all major martech and adtech platforms, as well as deep expertise in implementing the technical infrastructures required to create highly personalized experiences.

Sutter Mills employees are now part of Accenture Interactive, and the leadership team, including cofounders Guillaume Cardon, Oliver Mazeron and Xavier Cardon, remain in their current roles and will guide the integration.

Financial terms of the transaction are not disclosed.

Sutter Mills is the second acquisition made by Accenture Interactive in France, following the 2017 acquisition of French digital commerce agency Altima. It also marks Accenture's overall fifth acquisition in France in four years, following the acquisitions of OCTO Technology in 2016, Arismore and the aforementioned Altima in 2017, and Cirruseo in 2019.

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# DXC Technology Acquires Virtual Clarity to Accelerate IT Modernization for Large Scale Enterprise Clients

11 November 2019

DXC Technology announced it has acquired the outstanding shares of Virtual Clarity, a leading provider of IT-as-a-Service (ITaaS) transformation advisory services with a decade of experience in solving large scale IT modernization and application migration challenges for clients in the world's most demanding, mission-critical environments.

The acquisition of Virtual Clarity further positions DXC as a leading provider of IT modernization services for applications and infrastructure and strengthens DXC's ability to assess, design and manage transformations to cloud.

"I am excited to welcome Virtual Clarity's talented team to the DXC family," said Mike Salvino, DXC's president and CEO. "Virtual Clarity is a solid fit with our growth strategy with proven expertise in IT transformation and cloud migration. The company complements and enhances DXC's capabilities in cloud, platforms and IT modernization, enabling DXC to help our clients with their digital transformation journey and improve their business outcomes.

The addition of Virtual Clarity also builds on DXC's acquisition earlier this year of Luxoft as clients increasingly are seeking industry specific application development and innovation as part of their IT modernization approach.

Founded in 2008, Virtual Clarity is comprised of a blend of enterprise IT experts with deep knowledge of modern tools, techniques and key industries – including Financial Services, Health Care, Manufacturing, and Telecommunications.

"From inception, we've been obsessed with customer outcomes," said Virtual Clarity CEO Steve Peskin, who will report to Salvino. "Our approach to help clients transform their business quickly, seamlessly and safely complements the ability of DXC to execute globally at scale. Together with DXC, we create an immensely powerful and compelling opportunity for clients to unlock new value and competitive agility across the enterprise. We will make a real difference for clients, partners and our industry."

DXC will combine its deep cloud and application engineering services and strategic partnerships with Virtual Clarity's IT modernization capabilities to enable enterprise clients to accelerate their digital transformation, harness technology to improve efficiencies at scale, and drive business innovation:

Accelerating our customers' digital transformation journeys with Virtual Clarity's Precision Guided Transformation services and unlocking the value of DXC's application migration and modernization capabilities.

Aligning IT-as-a-Service to the needs of the business-lines quickly and safely.

Turning IT innovation into business value for customers with Virtual Clarity's "Air Traffic Control" offering – a combination of unique tools, highly experienced enterprise IT leaders, and deep understanding of what it takes to implement change in complex enterprises.

The DXC and Virtual Clarity relationship has produced several success stories in recent years, including:

Moving several thousand applications for a fortune 200 bank holding company to a hybrid cloud and

clearing long-standing regulatory concerns by implementing a solution based on migration factory (Cloud Assessment, Architecture, and Air Traffic Control) and automated IT platform.

Accelerated IT application modernization for a Major North American commercial bank by delivering a new, dynamic IT platform and Migration Factory which accelerated implementation and safeguarded the outcome. The client realized an 80%-plus reduction in IT unit costs and a 50-fold increase in the speed of change

Migration of 7,000 applications to the public cloud for a Fortune 100 telecommunications leader. DXC and Virtual Clarity analyzed the IT applications platform, assessed options and charted the most effective course of action to rapidly migrate the 7,000 applications to the public cloud.

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### OpenText to acquire Carbonite, Inc.

13 November 2019

OpenText announced that it has entered into a definitive agreement to acquire Carbonite, Inc., provider of cloud-based subscription data protection, backup, disaster recovery and end-point security to small and medium-sized businesses and consumers.

"Cloud platforms and secured, smart end-points are essential Information Management technologies as businesses transform into Industry 4.0," said Mark J. Barrenechea, OpenText CEO & CTO. "This acquisition will further strengthen OpenText as a leader in cloud platforms, complete end-point security and protection, and will open a new route to connect with customers, through Carbonite's marquee SMB/prosumer channel and products. We are very excited about the opportunities that Carbonite will bring, and I look forward to welcoming our new customers, partners and employees to OpenText."

"We entered Fiscal 2020 with a solid balance sheet and we are off to a strong start with the announced acquisition of Carbonite as part of our Total Growth strategy," added OpenText EVP & CFO, Madhu Ranganathan. "We are excited by the opportunity to bring forth exceptional leadership in operational execution and integration capabilities to Carbonite. Once integrated, we expect to increase our annual recurring revenues, deliver strong cloud growth, and expand cloud margins and adjusted EBITDA. The resulting growth in cash flows will enable us to maintain a healthy balance sheet, deliver strong earnings, and continue to deliver consistent growth in dividends to shareholders."

OpenText CEO & CTO, Mark J. Barrenechea and OpenText EVP, CFO Madhu Ranganathan will host a conference call today at 9:00 a.m. Eastern Time to discuss today's announcement. Conference call details are included further below.

The acquisition of Carbonite is expected to extend OpenText's leadership in the Enterprise Information Management (EIM) market by complementing OpenText's security offerings in data loss prevention, digital forensics, end-point detection and response with the addition of Carbonite's data protection and end-point security solutions. The acquisition also adds significantly to OpenText's Cloud business and further complements OpenText's routes to market, strong enterprise customer base in the Global10K, enhanced SMB and prosumer markets.

About the Transaction and Terms of the Agreement:

Tender offer to be commenced for all outstanding Carbonite shares for \$23.00 per share in cash(1)

Total purchase price of approximately \$1.42 billion, inclusive of Carbonite's cash and debt

Total purchase price is approximately 2.8x TTM (Trailing Twelve Months) Carbonite GAAP revenues (as of September 30, 2019), inclusive of annualized full year reported Webroot GAAP revenues, a significant acquisition which closed in March 2019

Expect significant expansion of cloud revenues, cloud margins, adjusted EBITDA and cash flows in Fiscal 2021

Current Carbonite Annual Recurring Revenues (ARR) of 90%

Accretive, and targeting to be on the OpenText operating model by end of Fiscal 2021

Funded with OpenText's existing cash on hand and revolver

Estimated OpenText net leverage ratio at closing of approximately 2.5x, with a target to return to less than 2x net leverage during the 4-6 quarters post close of transaction

Financial projections and target models will be provided upon closing of transaction

Expect the transaction to close within 90 days of this announcement

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### Siemens expands additive manufacturing portfolio through acquisition of Atlas 3D

13 November 2019

Siemens announced that it has signed an agreement to acquire Atlas 3D, Inc., a Plymouth, Indiana-based developer of software that works with direct metal laser sintering (DMLS) printers to automatically provide design engineers with the optimal print orientation and requisite support structures for additive parts in near real-time. Atlas 3D will join Siemens Digital Industries Software, where its solutions will expand additive manufacturing capabilities in the Xcelerator portfolio of software.

Sunata<sup>TM</sup> software uses thermal distortion analysis to provide a simple, automated way to optimize part build orientation and generate support structures. This approach allows the designer—rather than the analyst—to perform these simulations, thereby reducing the downstream analysis that needs to be conducted via Simcenter<sup>TM</sup> software to achieve a part that meets design requirements. Siemens plans to make the Atlas 3D solution available through its online Additive Manufacturing Network.

"We welcome Atlas 3D to the Siemens community as the newest member of our additive manufacturing team. Our solutions industrialize additive manufacturing for large enterprises, 3D printing service bureaus, design firms and CAD designers," said Zvi Feuer, Senior Vice President, Manufacturing Engineering Software of Siemens Digital Industries Software. "The cloud-based Sunata software makes it easy for designers to determine the optimal way to 3D print parts for high quality and repeatability. The combination of Sunata with the robust CAE additive manufacturing tools in Simcenter enables a 'right first time' approach for industrial 3D printing."

"Siemens is a leader in additive manufacturing, with the most integrated and functionally robust solutions in the industry, so we are excited to join the team," said Chad Barden, Chief Executive Officer of Atlas 3D. "The power of Sunata is that it equips designers to more easily design parts that are printable, which helps companies more quickly realize the benefits of additive manufacturing. As part of

Siemens, we look forward to introducing Sunata to customers who already have Siemens' AM solutions and can achieve new efficiencies in their front-end design-for-additive process, as well as companies who have yet to start their additive manufacturing journey."

The high rate of 3D print failures is a key challenge companies face in leveraging additive manufacturing for high-volume production. Parts often need to go through several design and analysis iterations before the optimal build orientation and support structures are determined. Typically, designers don't have the capabilities to consider such factors as part orientation, distortion, and heat extraction uniformity in their design. This puts the onus on engineering specialists to resolve such issues.

Atlas 3D's Sunata software solves this problem by giving front-end designers a quick, easy and automated way to get much closer to a "right first time" build. Sunata is a GPU-accelerated high-performance computing additive manufacturing software solution that can deliver results up to one hundred times faster than other build simulation solutions on the market. GPU-accelerated computing is the employment of a graphics processing unit (GPU) along with a computer processing unit (CPU) to facilitate processing-intensive operations such as deep learning, analytics and engineering applications.

The acquisition is due to close in November 2019. Terms of the transaction were not disclosed.

Siemens Digital Industries Software is driving transformation to enable a digital enterprise where engineering, manufacturing and electronics design meet tomorrow. The Xcelerator portfolio helps companies of all sizes create and leverage digital twins that provide organizations with new insights, opportunities and levels of automation to drive innovation.

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### Synopsys Completes Acquisition of DINI

15 November 2019

Synopsys, Inc. announced it has completed its acquisition of DINI Group, an established leader in FPGA-based boards and solutions, headquartered in La Jolla, California.

The rapid growth of software used in automotive, artificial intelligence (AI), 5G, and high-performance computing (HPC) applications creates an enormous hardware/software validation challenge for system-on-chip (SoC) designers. To address this challenge, SoC designers are deploying FPGA-based prototyping solutions to enable software development to start earlier and accelerate hardware verification and system validation.

DINI Group's FPGA-based solution further expands our leadership position in physical prototyping and extends our FPGA solutions into network applications and high frequency/low latency algorithmic trading.

The terms of the deal, which are not material to Synopsys financials, are not being disclosed.

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### Synopsys to Acquire Certain IP Assets from eSilicon

12 Nov 2019

Synopsys, Inc. announced that it has signed a definitive agreement to acquire certain IP assets from eSilicon. This acquisition will expand Synopsys' DesignWare® Embedded Memory IP portfolio with TCAMs and multi-port memory compilers, as well as its Interface IP portfolio with High-Bandwidth Interface (HBI) IP. The acquisition will also add a team of experienced R&D engineers to further scale Synopsys' IP development in the most advanced process technologies to address customers' evolving design requirements in growing markets such as AI and cloud. The remaining entirety of eSilicon, including its ASIC business and 56/112G SerDes design and related IP, will be acquired by Inphi Corporation.

The transaction, which is expected to close during Synopsys' first quarter of fiscal 2020, is not material to Synopsys' financials and is subject to Vietnamese regulatory approval and customary closing conditions. Terms are not being disclosed.

"Today's complex SoCs require a broad range of IP to address stringent performance, power and area requirements of advanced applications such as AI and cloud computing," said Joachim Kunkel, general manager of the Solutions Group at Synopsys. "The acquisition of eSilicon's IP will expand our portfolio and enable us to meet our customers' need for high-quality IP across advanced FinFET process technologies from a single trusted supplier with common licensing terms and support infrastructure."

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## Company News

#### Accenture Interactive Expands its Design Capability in Japan

11 November 2019

Accenture announced the opening of the Tokyo studio for Fjord, design and innovation from Accenture Interactive. The launch marks the first Fjord design studio in Japan. By introducing the capabilities of the world's largest design and innovation consultancy in the local market, Accenture Interactive strengthens its commitment to unlocking Japan's innovation potential through the power of human-centered experiences.

Founded in 2001, Fjord became part of Accenture Interactive in 2013. With more than 1,200 designers in 33 studios worldwide, Fjord is a global leader in strategic design and innovation. The new studio, opening today, is located at the Accenture Interactive Studio Tokyo in Azabu, Tokyo. Led by Kohei Bansho and Eduardo Kranz, Fjord Tokyo designers will bring design-led strategy, service design, and organizational / cultural innovation to create digital services people love and that support the business

transformation of Japanese clients.

Fjord works with some of the world's most-recognized brands to reimagine their customer experiences through a human-centric approach to design, including:

RBS, for which it invented and launched Bó by NatWest, a new 'neobank' for one of the UK's largest financial institutions, helping customers cultivate healthier financial habits

Finnair, reimagining the airline's customer experience and using advanced technology to design a mobile travel companion and other digital services, bringing peace of mind to air travelers.

Auris Health (part of Johnson & Johnson), which worked with Fjord's connected products team on revolutionizing endoscopy, allowing physicians to diagnose and treat small, hard-to-reach peripheral nodules earlier — and with greater precision.

"Faced with digital disruption, businesses in Japan are placing a growing emphasis on experience and design to meet people's diverse and ever-changing needs. By combining the power of design with the strong technical expertise Japan is known for, businesses have the potential to create the kinds of superior experiences today's consumers expect and crave," said Junichiro Kurokawa, Accenture Interactive Japan Lead. "By adding Fjord's capability to design for human impact, Accenture Interactive can further help our clients drive sustainable growth by creating experiences with purpose at their core."

Kurokawa continues: "With 'Reinvent the Experience' as our common mission, Accenture Interactive and IMJ have collaborated to solve clients' challenges with digital technologies. Now, by bringing Fjord's world-class design capabilities to the team, Accenture Interactive can further help clients design experience — from strategy to delivery — in the local market and beyond."

Kohei Bansho, studio lead of Fjord Tokyo, added, "Our diverse and skilled designers from around the world share a common passion: to make Japanese lives better. We look forward to advancing the world's leading 'Made in Japan' brands on their paths to innovation, right here from Tokyo."

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# Autodesk and AGC to Provide Construction Industry with Custom-Fitting Safety Harnesses for Women

13 November 2019

According to the Occupational Safety and Health Administration (OSHA), falls are the leading cause of private sector worker fatalities in the construction industry. Everyone who works at heights, whether it's on a roof, scaffolding, or the edge of a tall building, should have properly fitting safety harnesses, yet not all contractors have the supply they need to better protect women in construction. To help address this, Autodesk is funding a grant program with one of the largest construction trade organizations – the Associated General Contractors of America (AGC) – to supply select, in-need member contractors with fall protection harnesses sized for women who work at heights.

The program comes at a time when 80 percent of construction firms report having a hard time filling the hourly craft positions that represent the bulk of the construction workforce. Women represent approximately 10 percent of the overall construction labor force1, with even lower representation in trades positions, and one of the largest demographics with the potential to fill the gap in labor. To help

attract and retain more women in the field, jobsites need to recognize and meet the needs of a gender-diverse workforce, including properly sized and comfortable PPE.

"The construction industry agrees safety must be everyone's priority, but we also need to recognize when safety needs aren't being met for some workers. Technology is improving jobsite safety, but it's not a silver bullet," said Allison Scott, director, Autodesk Construction Solutions. "Construction is – and will continue to be – a people-driven business. The industry needs more people, and women must feel safe and welcome on jobsites if we want them to choose a career in construction. Ultimately, when we address safety for women, we improve safety for everyone."

Ill-fitting PPE can range from uncomfortable to downright dangerous. For example, a fall protection harness that's too loose may still catch a woman when the scaffolding beneath her collapses, but it could seriously injure her neck or shoulder in the process. This not only affects the injured worker, but her employer as well. The contractor incurs lost time, productivity and – potentially – a costly worker's compensation claim.

"One of the most effective ways to successfully recruit more women into high-paying construction careers is to make sure firms are able to provide safety equipment that makes them even safer," said Stephen E. Sandherr, the chief executive officer of the Associated General Contractors of America. "We want to leverage these grants to encourage our member firms to provide a wider range of safety equipment and continue to expand the diversity of our workforce."

A top concern of contractors is the safety of their employees, and many are recognizing the shifting landscape in the construction workforce and taking steps toward a more inclusive, injury-free job site. Earlier this year, Skanska created gloves and two customized safety vests designed for women and based on feedback from its own female employees. The company plans to expand the apparel line soon to include surveyor vests and high-visibility jackets for winter.

The grant program will fund the purchase of approximately 300 fall protection harnesses sized for women. AGC members can apply for the grants until the application window closes on January 10, 2020. Winners will be notified in advance and honored at the AGC's annual convention, to be held March 9-12, 2020 in Las Vegas, NV.

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#### Mastercam Celebrates BattleBot Team Witch Doctor's Success

15 November 2019

Mastercam, CAD/CAM software developed by CNC Software, Inc., was proud to be on display as a sponsorship partner of Team Witch Doctor in season 9 of Discovery's BattleBots series. Team Witch Doctor, led by Andrea Gellatly, competes in the BattleBots competition on the Discovery Channel. The collaboration was a great benefit to company culture and provided a strong platform from which to promote the benefits of STEM education.

Gellatly leads a team including her husband Mike Gellatly, Paul Grata, Christian Chiriboga, Steven Sharp, Katheryn Sharp, Jennifer Villa, and Rick Pease. They actively promote robotics and educational efforts to get youth more involved in STEM. They also started a nonprofit makerspace in Miami, Florida, for new robot builders and makers of all kinds called MakeMIA Makerspace.

According to Peter Mancini, Education Product Manager for Mastercam, "Our partnership with Team

Witch Doctor has given us extra visibility to promote the benefits of STEM education and careers in manufacturing to students. BattleBots is a very popular show, and Witch Doctor was so successful. They're a crowd favorite, for sure. Fans can see how robotics was a great launch pad for Andrea and her teammates, so when young people see this they are inspired."

Throughout the season, Witch Doctor provided a spectacle with an undefeated streak going into the finals, where the robot ultimately finished in second place after a harrowing match with Bite Force. During battles in the competition, robots are often damaged extensively, and Witch Doctor had the ability to repair rapidly in part due to the availability of replacement parts from the Mastercam Manufacturing Lab®.

Several members of Team Witch Doctor visited CNC Software headquarters in Tolland, Connecticut, to speak at a company meeting and take time to interact with CNC Software employees. Employees enjoyed a demonstration of the robot's speed and dexterity. During the visit, Team Witch Doctor shared their appreciation for everyone's support and took time with applications engineers in the Mastercam Manufacturing Lab to talk shop and thank the group for help with the design and manufacture of part of the fuel system.

President and CEO of Mastercam, Meghan West shared, "It has been so exciting for our company to come together and root for Team Witch Doctor. We organized viewing sessions and live chats with the team, and we are very proud of their accomplishments this season."

West added, "We really couldn't ask for a group better aligned with Mastercam's efforts to attract young energetic minds to our industry. The fact that it's a woman-led team adds icing to the cake. Women are underrepresented in these fields, and Team Witch Doctor is a fantastic example of what is possible for anyone with an interest in STEM and manufacturing."

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### The World Bee Project Works to Sustain Buzz with Oracle Cloud and AI

15 November 2019

The declining bee population is not just a problem for honey lovers; it's a threat to the global food supply.

Oracle announced a partnership with The World Bee Project CIC in 2018, offering the use of its cloud storage and AI analytics tools to support the organization's goals and innovations such as its BeeMark honey certification.

The World Bee Project is the first private organization to launch a global honeybee monitoring initiative to inform and implement actions to improve pollinator habitats, create more sustainable ecosystems, and improve food security, nutrition, and livelihoods by establishing a globally coordinated monitoring program for honeybees and eventually for key pollinator groups.

The World Bee Project Hive Network remotely collects data from varying environments through interconnected hives equipped with commercially available IoT sensors. The sensors combine colony-acoustics monitoring with other parameters such as brood temperature, humidity, hive weight, and apiary weather conditions. They also monitor and interpret the sound of a bee colony to assess colony behavior, strength, and health.

The World Bee Project Hive Network's multiple local data sources provide a far richer view than any

single data source to harness and enable global-scale computation to generate new insights into declining pollinator populations.

After the data has been validated by The World Bee Project database it can be fed into Oracle Cloud, which uses analytics tools including AI and data visualization to provide The World Bee Project with new insights into the relationship between bees and their varying environments. These new insights can be shared with smallholder farmers, scientists, researchers, governments, and other stakeholders.

"The partnership with Oracle will absolutely transform the scene as we can link AI with pollination and agricultural biodiversity," said Sabiha Malik, founder and executive president of The World Bee Project CIC. "We have the potential to help transform the way the world grows food and to protect the livelihoods of hundreds of millions of smallholder farmers, but we depend entirely on stakeholders such as banks, agritech, insurance companies, and governments to sponsor and invest in our work so that we can begin to step toward fulfilling our mission."

Oracle will be offering cloud computing technology and analytics tools to The World Bee Project to enable it to process data in collaboration with its science partner, the University of Reading, to enable science-based evidence to emerge.

Oracle is currently looking at funding models to support the expansion of The World Bee Project Hive Network to ensure a truly global view of the health of bee populations.

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### Topcoder Unveils Talent-as-a-Service On-Demand Workforce Model

15 November 2019

Topcoder, a Wipro company, and the world's largest technology network and on-demand digital talent platform, today unveiled Talent-as-a-Service (TaaS) at the 2019 Topcoder Open and Innovation Summit in Houston, USA. TaaS is an innovative open workforce model that provides highly skilled technology talent on-demand and empowers enterprise teams to scale quickly with proven resources from anywhere in the world.

According to the January 2019 Gartner 4Q18 Emerging Risks Survey\*, "Sixty-three percent of respondents indicated that talent shortage was a key concern for their organization." Topcoder addresses that market and staffing need with TaaS, a fast, scalable, outcome-based workforce model that allows companies to increase productivity, quality and efficiency.

"There's talk of a skills gap driving an apparent talent shortage, but at Topcoder we don't believe that's the reason companies struggle to find and hire the most qualified technologists," said Michael P. Morris, Global Head of Crowdsourcing, Wipro Limited. "There's really no war for talent, but more of a 'persistent blind spot' in innovative technology talent acquisition. Highly skilled technologists from around the world have never been more accessible. The key is figuring out how to find, attract and connect that talent with companies that need them most, and then creating project opportunities too attractive to be dismissed, as well as loyalty programs that keep them coming back."

ConsenSys, a global blockchain technology company, has leveraged TaaS for more than 50 successful projects within the past year. In addition, ConsenSys has gained access to highly skilled financial services technologists within the Topcoder Community who actively focus on its specific deliverables.

"Working with Topcoder and the Topcoder Community was fantastic: we got access to proven resources

from around the world that there's no way we could have found otherwise," said Tom Lindeman, Cofounder, ConsenSys Diligence | MythX. "We also saw that certain Topcoder members were financial services experts, so they started to deliver projects very quickly. With Topcoder, the velocity of work is really fast, we're talking days not weeks, and it's done with an incredibly high quality."

The Topcoder Community was inspired by and excited for the project opportunities presented by ConsenSys. The Topcoder Blockchain Community grew by more than 14,000 members within 12 months, which meant there were even more qualified resources for ConsenSys to leverage.

"The initial reason we chose to work with Topcoder was because our project was, essentially, a v1: while we were building up the team, we still needed to get work done," continued Lindeman. "Talent-as-a-Service from Topcoder allowed us to benefit from on-demand, globally based technologists with specialized skillsets to be a go-to workforce to get the project off the ground as we were growing. Furthermore, the Topcoder Community demonstrated a shared sense of ownership where they truly cared about the success of the products and would proactively offer input on how to make things better. The Topcoder Community really felt like an integrated part of ConsenSys' team."

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# World's Largest Survey of BI and Analytics Users Shows Top Rankings and Leading Positions for SAP Analytics Cloud

11 November 2019

SAP SE announced that the SAP Analytics Cloud solution received 17 top rankings in The BI Survey 19, the voice of the BI and analyst community.

The survey, conducted by industry analyst firm BARC and one of the largest of its kind, continued to show top rankings and leading positions of SAP Analytics Cloud across four peer groups, including large international business intelligence (BI) vendors, integrated performance management products and data discovery–focused products.

"The results of The BI Survey 19 show a very high level of user satisfaction for SAP Analytics Cloud, which provides BI, augmented analytics and planning capabilities in one solution," said Gerrit Kazmaier, executive vice president, SAP HANA & Analytics. "SAP HANA Cloud Services, which includes SAP Analytics Cloud, SAP Data Warehouse Cloud and SAP HANA Cloud, brings data and analytics much closer together so customers get more value out of their data and can make fast, confident decisions without doubt."

Key findings for SAP Analytics Cloud from The BI Survey 19 are:

97 percent of the surveyed users would recommend SAP Analytics Cloud, up from 96 percent in 2018

91 percent rate SAP Analytics Cloud functionality for creating dashboards as good or excellent, compared to 80 percent for the average BI tool

55 percent chose SAP Analytics Cloud due to SAP's high innovative capacity, compared to an average of only 16 percent across other BI tools

According to the survey, SAP Analytics Cloud ranked above the products of all other vendors in the large international BI vendors peer group for KPIs that included innovation, cloud BI, mobile BI and project length. SAP Analytics Cloud also achieved top rankings or leading positions — particularly in the large international BI vendors peer group — for business value, customer satisfaction, innovation

and competitiveness as well as functional categories including dashboards. The survey confirms that reduced costs, increased revenues and saved headcount are achieved by an above-average proportion of SAP Analytics Cloud users compared with other products.

To access the full SAP highlights report, check out The BI Survey 19.

The BI Survey 19 was conducted by BARC from March to June 2019. Altogether 3,021 respondents worldwide answered a series of questions about their BI software. The survey offers a comparison of 36 leading business intelligence tools across 34 key performance indicators including business value, customer satisfaction, customer experience and competitiveness. For more information, go to www.bisurvey.com.



### **Events**

### CONTACT Software at SPS 2019: IoT solutions set up fast

14 November 2019

The SPS is an ideal environment for CONTACT's IoT platform. In connection with automation technology, CONTACT Software presents smart solutions for shop floor management, the supply chain and service. The heart of the new, data-driven business processes is the digital twin of smart products.

With its open low-code platform Elements for IoT, CONTACT Software provides technology and application building blocks that intelligently network virtual and real products. At the SPS 2019, the company will demonstrate that Industry 4.0 projects and other digital business models can therefore be implemented flexibly and fast.

CONTACT prepares a tailor-made program for the trade fair that provides operators and manufacturers of automation solutions with comprehensive information. In Hall 5, booth 130, visitors will see live demonstrations of current industrial IoT applications. Impulse lectures highlighting the value creation potential of smart products and their digital twins will complement the program.

At CONTACT's booth, companies will meet competent experts to discuss digital strategies and clarify technical details. The trade fair team consists entirely of IoT staff from consulting and software development. Visitors will also have the possibility to approach the IoT topic in an intuitive manner. They can use VR to explore a digital bottling line and compete against a robot in the strategy game Tic-Tac-Toe.

Another highlight will be found at CONTACT's IoT partner Mitsubishi Electric in hall 7, booth 391. Here, CONTACT will use a smart factory scenario to show how companies can continuously optimize their production processes with Elements for IoT. The example is a sorting plant whose production data is linked to the Enterprise IT/OT via its digital twin.

"With our scenarios, we show that the set-up of IoT solutions is not a witch's work," says Stefan Gregorzik, who is responsible for the cross-departmental IoT activities at CONTACT Software. "In this way, we want to encourage companies to take advantage of the manifold opportunities offered by digitization."

SPS is a leading trade fair for industrial automation. Besides CONTACT Software, around 1,650 exhibitors from all over the world are expected in Nuremberg, Germany from 26 to 28 November.

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# Dassault Holding Life Sciences Day in New York: Opening Up a New World of Virtual Twin Experiences for Healthcare

13 November 2019

Dassault Systèmes is holding a Life Sciences Day for analysts and investors, today, Wednesday, November 13th, 2019 starting at 09.00 am ET in New York. The event includes presentations by the senior executive management team. The sessions are being webcast live and will be available for replay by accessing https://investor.3ds.com/events/event-details/life-sciences-day.

Bernard Charlès, Dassault Systèmes' Vice Chairman and Chief Executive Officer commented:

"Health is now core (with Life Sciences our second largest industry) we have a simple dream: help health innovators power smarter therapeutics for healthier people. In the age of precision medicine and patient experiences, it is clear that the future of healthcare will be shaped by inclusive and multi-discipline platforms enabling virtual twin experiences for healthcare. We made virtual twins of cars and airplanes possible. We will do the same for the human body.

"The 3DEXPERIENCE platform combines modeling, simulation, data science, AI, and collaboration in the virtual world to achieve sustainable innovation in Life Sciences. Today, Dassault Systèmes brings a new, unified, end-to-end approach to research and discovery, development, clinical testing, manufacturing and commercialization of new therapies and health technologies.

"From a customer perspective the opportunity is significant – with a potential reach to 4,500 pharmaceutical and biotech companies and over 50,000 medical devices companies."

Pascal Daloz, Dassault Systèmes' Executive Vice President, CFO and Corporate Strategy Officer, commented:

"In June of 2018 we initiated our 2018-2023 plan to double our non-IFRS EPS, to a goal of about €6.00. From a revenue perspective, our key growth drivers include the 3DEXPERIENCE platform and industry solution experiences, our expanding global footprint bringing diversification and balance by industry and geography, and new usage opportunities with the Cloud. Complementing our key growth drivers, is the recent addition of Medidata Solutions following the completion of its acquisition on October 28th, 2019. Based upon our assessment of its growth opportunities between 2020 and 2023, we estimate that Medidata will contribute approximately €0.70 and, more importantly, will set in motion future growth potential beyond 2023."

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### iBASEt Announces Excelerate 2020 Business Conference

14 November 2019

iBASEt announced it will host its annual business conference, Excelerate, for business leaders focused on simplifying complex manufacturing. The event will take place on Mar. 31 – Apr. 2, 2020 at the Laguna Cliffs Marriott Resort & Spa in Dana Point, California.

This conference will feature keynote speakers and educational tracks presented by industry-leading manufacturing professionals who can help educate and provide insights on how to digitally transform manufacturing, quality and MRO operations. Several high energy networking activities are planned to foster collaboration and discussion with peers.

"We are thrilled to host this year's Excelerate business conference to demonstrate how complex manufacturing challenges can be simplified with digital solutions," said Naveen Poonian, President of iBASEt. "With a strong lineup of speakers, this year's attendees can learn from informative presentations coupled with real-world case studies. We're excited to share with attendees practical, applicable strategies to maximize the value of their iBASEt investment."

Keynote speakers now confirmed for this event include:

Dave Berke, the first operational pilot ever to fly and be qualified in the F-35B, the former Commanding Officer of the Marine Corps' first F-35 squadron, and a member of Jocko Willink's Echelon Front team

Denis Mercier, former Chief of Staff of the French Air Force and Supreme Allied Commander Transformation of NATO

Rick Franzosa, Senior Director Analyst at Gartner who is responsible for Gartner's manufacturing technology systems research

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### **Financial News**

### Altair Announces Third Quarter 2019 Financial Results

11 November 2019

Altair released its financial results for the third quarter ended September 30, 2019.

"Software product revenue grew over 21% from a year ago, as we continued to execute on our vision to provide truly differentiated simulation, data analytics and high-performance cloud computing solutions that enable our customers to compete more effectively in a connected world," said James Scapa, Founder, Chairman and Chief Executive Officer of Altair.

"Our core simulation and optimization technologies performed well during the quarter and we are highly encouraged by strong demand for our SimSolid product, which has had one of the fastest new product ramps in our history. We are also pleased to see continued strong recurring software subscription revenues. While we are seeing some macro headwinds in our automotive market and continue to be impacted by foreign exchange challenges, our diversification across multiple verticals and products provides us with optimism that our momentum will continue into 2020 and beyond."

Third Quarter 2019 Financial Highlights

Software product revenue was \$77.8 million, an increase of 21% from \$64.2 million for the third quarter of 2018 highlighted by 29% growth in the Americas region.

Non-GAAP software product revenue was \$80.1 million, an increase of 25% from \$64.2 million for the third quarter of 2018.

Total revenue was \$100.4 million, an increase of 16% from \$86.8 million for the third guarter of 2018.

Non-GAAP total revenue was \$102.7 million, an increase of 18% from \$86.8 million for the third quarter of 2018.

Net loss was \$(15.9) million, compared to net income of \$0.9 million for the third quarter of 2018. Diluted net loss per share was \$(0.22) based on 71.8 million diluted weighted average common shares outstanding, compared to diluted net income per share of \$0.01 for the third quarter of 2018, based on 76.7 million diluted weighted average common shares outstanding.

Adjusted EBITDA was \$(2.3) million, compared to \$2.4 million for the third quarter of 2018.

Modified Adjusted EBITDA was \$(0.1) million, compared to \$2.4 million for the third quarter of 2018.

Non-GAAP net loss was \$(7.2) million, compared to \$(1.4) million for the third quarter of 2018. Non-GAAP diluted net loss per share was \$(0.09) based on 77.8 million non-GAAP diluted common shares outstanding, compared to non-GAAP diluted net loss per share of \$(0.02) for the third quarter of 2018, based on 77.0 million non-GAAP diluted common shares outstanding.

Free cash flow, which consists of cash flow from operations less capital expenditures, was \$(3.3) million, compared to \$0.9 million for the third quarter of 2018.

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### DXC Technology Reports Second Quarter Fiscal 2020 Results

13 November 2019

DXC Technology reported results for the second quarter of fiscal year 2020, representing the period from July 1 through September 30, 2019.

"During my first two months as CEO, I have met with many of our largest customers and most of our people around the world," said Mike Salvino, president and CEO. "I am very pleased with our global talent base, capabilities and the scale and scope of our offerings. DXC has a loyal, global customer base for whom we manage mission-critical operations. I am confident that by strengthening our focus on our people, customers and operational execution, we will deliver better financial results and be positioned to grow profitably while unlocking value for our shareholders."

Financial Highlights - Second Quarter Fiscal 2020

Diluted earnings per share from continuing operations was \$(8.19) in the second quarter, including \$(11.10) per share of goodwill impairment, \$(0.11) per share of restructuring costs, \$(0.18) per share of transaction, separation and integration-related costs, \$(0.45) per share of amortization of acquired intangible assets, \$2.43 per share of gain on arbitration award, and \$(0.11) per share of tax adjustment related to prior restructuring charges. This compares with \$0.92 in the year ago period.

Non-GAAP diluted earnings per share from continuing operations was \$1.38. This compares with \$2.02 in the year ago period.

Revenue in the second quarter was \$4,851 million. Revenue decreased 3.2% compared with \$5,013 million in the prior year.

Loss from continuing operations before income taxes was \$(1,999) million in the second quarter, including \$(2,887) million of goodwill impairment, \$(32) million of restructuring costs, \$(53) million of transaction, separation and integration-related costs, \$(151) million of amortization of acquired intangibles, and \$632 million of gain on arbitration award. This compares with \$332 million in the year ago period.

Non-GAAP income from continuing operations before income taxes was \$492 million compared with \$749 million in the year ago period.

Net loss was \$(2,115) million for the second quarter, including \$(2,887) million of goodwill impairment, \$(28) million of restructuring costs, \$(48) million of transaction, separation and integration-related costs, \$(117) million of amortization of acquired intangibles, \$632 million of gain on arbitration award, and \$(29) million of tax adjustment related to prior restructuring charges. This compares with \$259 million in the prior year period.

Non-GAAP net income was \$362 million.

Adjusted EBIT was \$529 million in the second quarter compared with \$799 million in the prior year. Adjusted EBIT margin was 10.9% compared with 15.9% in the year ago quarter.

Net cash provided by operating activities was \$1,651 million in the second quarter, compared with \$480 million in the year ago period.

Adjusted free cash flow was \$739 million in the second quarter.

Global Business Services (GBS)

GBS revenue was \$2,285 million in the quarter compared with \$2,111 million for the prior year. GBS revenue increased 8.2% year-over-year, including an unfavorable foreign currency exchange rate impact of 2.3%. GBS revenues increased 10.5% year-over-year at constant currency reflecting contribution from acquisitions, including Luxoft. GBS profit margin in the quarter was 15.7%, compared with 18.9% in the prior year, reflecting investments to support Digital hiring and capabilities. New business awards for GBS were \$1.9 billion in the second quarter.

Global Infrastructure Services (GIS)

GIS revenue was \$2,566 million in the quarter compared with \$2,902 million for the prior year. GIS revenues decreased 11.6% year-over-year, including an unfavorable foreign currency exchange rate impact of 2.5%. GIS revenues decreased 9.1% year-over-year at constant currency, reflecting declines in our traditional infrastructure businesses. GIS profit margin in the quarter was 9.5%, compared with 16.3% in the prior year, reflecting a slowdown in delivery cost take-out actions. New business awards for GIS were \$1.9 billion in the second quarter.

Returning Capital to Shareholders

During the second quarter, DXC Technology returned \$306 million to shareholders, consisting of \$56 million in common stock dividends and \$250 million in share repurchases.

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## Implementation Investments

### Cardinal Health Partners with TCS to Transform its IT Operating Model

14 November 2019

Tata Consultancy Services announced that it has expanded its partnership with Cardinal Health, a global, integrated healthcare solutions company, to transform its IT operating model toward a product-centric IT organization.

The new operating model will embrace TCS' Enterprise Agile vision and Machine-First<sup>TM</sup> Delivery Model (MFDM<sup>TM</sup>), and help Cardinal Health drive business agility, and continuous innovation and transformation to stay ahead of its competitors and disruptors.

MFDM uses automation and artificial intelligence (AI) technologies to reduce operating risk, boost velocity and increase productivity to deliver business value. At the core of this framework is TCS' cognitive automation software, ignio<sup>TM</sup>, which blends AI, machine learning, and advanced software engineering to make enterprise IT resilient and self-healing. It uses its context awareness to pre-empt problems and autonomously resolve a lot of the incidents that do occur.

Greg Boggs, Senior Vice President, Cardinal Health, said, "TCS has a strong track record of delivery with Cardinal Health. We look forward to elevating our partnership and accelerating the transformation of our IT operating model to enable growth. TCS' approach toward driving Enterprise Agility and its ability to leverage key digital technologies such as ignio and their MFDM framework positions it as a preferred transformational partner. TCS' investments align well with our strategic digital transformation roadmap."

"Cardinal Health and TCS have a great partnership built on performance and trust over the last nine years," said Nitin Kumar, Global Head, Healthcare, TCS. "Our strong contextual knowledge of Cardinal Health's business allows us to collaborate and deliver this accelerated transformation. We are very excited to embark upon this journey of innovation and transformation with Cardinal Health based on our Business 4.0TM thought leadership framework."

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### Mystery Ranch Takes a Load Off with Centric PLM

13 November 2019

Built on a heritage of function, comfort, quality and durability, Mystery Ranch manufactures packs and load carriage systems for military, hunting, wildland fire and mountaineering customers. Mystery Ranch is based in Bozeman, Montana, and is a global brand with domestic and international sales and production, as well as direct-to-consumer and wholesale business models.

Luke Boswell, Director of Product at Mystery Ranch, explains how the company reached a point where it became impossible to effectively manage product design, development and launch using their legacy PLM solution, spreadsheets and emails.

"We had an older PLM system, but it wasn't doing everything we wanted. In particular, it wasn't capable of outputting the entirety of a product package. It was very Bill of Materials [BOM] oriented so we had spreadsheet chaos in costing, sourcing, materials and testing data. We have an in-house manufacturing facility in Bozeman, Montana, as well as contract manufacturers in Asia, and we needed a PLM solution with the flexibility to handle the different ways we work with manufacturers."

Mystery Ranch implemented Centric 8 PLM to centralize and streamline product data in order to develop products more efficiently, minimize mistakes, drive innovation and ultimately serve demanding customers more effectively with high-quality products. Today, Bill of Materials accuracy has improved by 30 percent. Costing and pricing spreadsheets are history. And the company has a solid digital foundation that allows infinite room for growth.

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# Nicole Miller Upgrades to NGC Andromeda PLM to Support Growth into New Markets and Categories

11 November 2019

New Generation Computing, Inc. (NGC) today announced that renowned fashion designer Nicole Miller is upgrading to NGC's Andromeda PLM.

An iconic American brand with international reach, Nicole Miller saw an opportunity to further streamline its product development workflow and gain better visibility across its supply chain as the company expands the brand into new markets and categories. To support these initiatives, Nicole Miller will upgrade to NGC Andromeda PLM.

"After six successful years working with NGC, it was an easy decision to upgrade to Andromeda PLM to support our growth plans," said Estelle Rose, chief financial officer, Nicole Miller. "We have continuously benefited from NGC's expertise in the fashion industry and its robust solutions designed for our industry, and we anticipate additional improvements in productivity and efficiency throughout our global supply chain."

NGC Andromeda PLM will allow Nicole Miller to benefit from one global platform for all PLM-related elements including planning, merchandising, design, costing, sampling, quality and sourcing. Workflow calendars will provide updates and calendar alerts to ensure deadline compliance and faster turnaround on products. Andromeda PLM integrates closely with Nicole Miller's existing ERP system.

"Nicole Miller has been a pleasure to work with over the years, and we are excited to extend our relationship with a new wave of global innovation," said Mark Burstein, president, NGC. "By upgrading to Andromeda, Nicole Miller will have access to the latest fashion PLM technology and drive new innovations throughout the company."

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### Phoenix Group Expands Strategic Partnership with TCS to Drive Growth Plans

12 Nov 2019

Tata Consultancy Services announced an expansion of its long-term partnership with Phoenix Group, Europe's largest life and pensions consolidator, to drive the growth and transformation of the Standard Life business and meet the future needs of its customers, workplace clients and their advisers.

The expanded partnership will result in the digital transformation of Standard Life's pensions and savings operations onto the TCS BFSI Digital Platform, powered by TCS BaNCSTM. This will expand the overall scope by a further 4.2 million policies, taking the total number of policies managed by Diligenta, TCS' regulated subsidiary in the UK, on behalf of Phoenix Group, to nearly 10 million.

The highly automated, open architecture and agile platform will allow Standard Life to partner with a variety of innovators and experts as it continues to develop its wider workplace offering. Its highly flexible product definition capability will further accelerate Standard Life's speed to market to meet the evolving needs of workplace advisers, employers and their scheme members, and will provide much richer insights for workplace clients.

A key element of the partnership is TCS' commitment to expand its already significant Scottish presence and establish a TCS technology and operations service hub in Edinburgh, with a skilled team of experts from Standard Life and TCS to support the partnership and deliver excellence in customer service. Additionally, the hub will provide opportunities for Standard Life's and TCS' product experts to collaborate with end-users to envision new offerings. The transformation is expected to take

approximately three years to complete, with a number of Standard Life employees transferring to TCS by the end of that period.

Susan McInnes, CEO of Standard Life said: "We want to ensure we lead the way in meeting the needs and expectations of all our customers in the future, and become an even more innovative, progressive, well run business. We believe a partnership model is absolutely the right approach. It enables us to work with a leading global organisation with great expertise and to respond to the dynamic environment that we're operating in. Working in partnership with TCS will support our growth strategy in the workplace market and bring benefits to workplace clients and scheme members. It will accelerate our ability to innovate and efficiently evolve our proposition in the future, whilst continuing to deliver excellent customer service."

"We are delighted to expand our long-standing partnership with Phoenix Group to digitally transform Standard Life's operations to speed up product innovation and further improve the experience for their customers," said Suresh Muthuswami, President, BFSI Platforms, TCS. "The partnership will significantly expand our Open Book capabilities, and adds further to our already extensive experience in complex migrations. We are pleased that our highly scalable, best-in-class digital platform will help power Standard Life in the future."

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### Renault Group Clio 5 concept relies on ESI Group for Virtual Prototyping technologies

14 November 2019

ESI Group supported its strategic partner Renault Group in the realization of the new Clio 5 concept. Thanks to this collaboration and a consortium of partners, the Clio 5 obtained a 5-star rating at the Euro NCAP safety test.

The cooperation between ESI and Renault Group started in 2001, mainly focused on design and manufacturing methodologies for various vehicle models. Positioned as an agent of change working alongside Renault Group's experts, ESI is one of the companies involved in the digital transformation initiated by Renault Group in 2017. Renault Clio's fifth generation is the first vehicle of the Group to benefit from the latest evolutions of this transformation program.

ESI relied on its expertise in physics of materials and its teams' know-how to virtualize the concept stage until the crash-test certification. All physical tests were immediately successful, and no further testing was needed. This cooperation allowed a considerable rationalization of the concept phase, reducing the time spent on tests and consequently related costs.

The certification of a vehicle with a single physical prototype is a world premiere. It is as significant as the first virtual crash-test that was realized by ESI's founders in 1985. This achievement positions Renault Group among the leading automotive industrials, equipped to seize the opportunities presented by the future of mobility. Thanks to this accomplishment, ESI meets its vision: to allow industrials to virtually manufacture their products with zero physical tests, zero physical prototypes, and zero unpredicted downtime. ESI provides a global answer to the increasing requirements of the automotive industry: innovate while producing faster, with more reliability and less cost.

"The virtual prototype of the new Clio is the result of a long collaboration," said Cristel de Rouvray, CEO of ESI Group. "We are proud to have supported the teams of Renault Group throughout this project, and to have helped them increase their competitiveness in the field of numerical simulation and virtual crash testing, allowing them to get it right the first time in their development cycle," she added.

Olivier Colmard, Vice-President of Numerical Simulation and PLM at Renault, commented: "The complementarity of the teams and the employed methodology allowed a considerable reduction in the Engineering phase in accordance with the objectives set by the Group."

He concluded: "Thanks to ESI and their Virtual Performance Solution (VPS), we succeeded in developing one of our new vehicles, achieving good physical tests right the first time, allowing us to earn the whole five stars on the Euro NCAP safety test, following its stricter protocol launched in 2018."

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# Samsung Foundry Deploys Industry-Leading Synopsys TestMAX XLBIST Dynamic In-System Test Solution for Automotive Safety

14 November 2019

Synopsys, Inc. announced that Samsung Foundry successfully deployed the Synopsys TestMAX<sup>TM</sup> XLBIST solution on an automotive integrated circuit (IC) to provide dynamic in-system testing for critical failures in order to meet stringent automotive functional safety (FuSa) requirements. The accelerating evolution of vehicle technologies means that more automotive chips are required to satisfy higher automotive safety integrity levels (ASILs) for autonomous driving and advanced driver-assistance systems (ADAS). According to IC Insights research, increased demand for automotive ICs is forecast to drive growth rates that exceed all other end-user applications in the next few years. Synopsys' automotive design solutions enable designers to achieve their target ASILs by providing the industry's most comprehensive feature set to implement FuSa mechanisms.

Using the Synopsys TestMAX XLBIST solution, Samsung was able to efficiently implement dynamic in-system test, which periodically executes during key phases of vehicle operation, including power-on, drive mode, and power-off. As the industry's first self-test solution that tolerates indeterminate digital states while rapidly achieving high fault coverage, Synopsys TestMAX XLBIST enables design teams to minimize implementation turnaround time. The XLBIST solution, along with other Synopsys TestMAX products, represents a crucial part of Samsung's automotive reference flow for RTL-to-GDSII design.

"Samsung Foundry's goal is to provide creative solutions to customers' implementation needs for highly demanding automotive design," said S. Balajee, corporate vice president, Samsung Semiconductor India Research (SSIR). "As part of our collaboration with Synopsys to create Samsung's world-class automotive reference flow, the Synopsys TestMAX XLBIST solution plays a key role toward achieving our customers' functional safety goals for test coverage and test time while minimizing design impact."

The Synopsys TestMAX XLBIST solution provides an exceptionally high level of in-system test fault coverage while easily meeting the maximum allowable test time. The XLBIST solution avoids issues such as iterative design modifications, significant silicon area increases, and prolonged schedules that

are common to previous in-system test technologies. The combination of Synopsys TestMAX XLBIST along with Synopsys TestMAX Access enables low-latency power-on self-test (POST) via an embedded controller, as well as configurable in-system test driven from a CPU interface. The XLBIST solution leverages the portfolio of other Synopsys TestMAX products that provides RTL-based testability analysis to catch test problems early, physically-aware test points to increase fault coverage, and power-aware pattern generation to meet system-level power goals. The Synopsys TestMAX family of products supports a comprehensive RTL-to-GDSII design- for-test (DFT) implementation flow fully integrated into the Synopsys Fusion platform and delivers the industry's most comprehensive set of test and DFT capabilities.

"The Synopsys TestMAX XLBIST solution is one of several test innovations we are delivering to customers to address their quality and reliability needs for automotive and other mission-critical designs," said Amit Sanghani, vice president of Test Automation in Synopsys' Design Group. "Working closely with leading-edge companies like Samsung accelerates our ability to deliver industry-leading solutions that meet our customers' goals for quality of results, time to market, and safety."

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# The Absolut Company begins collaboration with Siemens Digital Industries Software to increase manufacturing efficiency and flexibility

13 November 2019

Siemens Digital Industries Software announced a collaboration with The Absolut Company regarding Siemens Opcenter<sup>TM</sup> Execution software, part of the Siemens Digital Enterprise Suite, Manufacturing Execution System (MES) solution. The company will conduct a pilot of Siemens Opcenter Execution Process (formerly known as SIMATIC IT® Unified Architecture Process Industries) in one of their three factories in Åhus as the first step of an enterprise-wide roll-out across the three factories which produce spirits for global distribution. Siemens Opcenter can help The Absolut Company to better meet some of the challenges in the beverage market including the increasing demand for high quality and variety in products and production as well as the high cost pressures of the global food and beverage market.

Siemens Opcenter Execution Process can help The Absolut Company to increase traceability, to manage orders more efficiently and to monitor production in real time.

"The Absolut Company always strives to have best in class manufacturing where Industry 4.0 will be a key enabler to deliver on future consumer demands. We are happy to have Siemens Digital Industries Software as a key partner on this journey," said Anna Schreil, VP Operations at The Absolut Company.

Siemens Opcenter Execution is part of Siemens' offering for the consumer-packaged goods and food and beverage industries. The solution has been developed to cover the entire value chain, from reception of incoming material to distribution of produced goods, including quality control, product planning and scheduling as well as reporting, trends and advanced analysis. Siemens Opcenter Execution Process can help The Absolut Company to increase traceability, to manage orders more efficiently and to monitor production in real time.

"Companies across the consumer products industry are facing increased regulations, the need for global manufacturing to meet local demands, and competitive pressures that can result in reduced margins," said Mats Friberg, Vice President & Managing Director for Nordic Operations at Siemens Digital Industries Software. "The Absolut Company recognizes the key to staying ahead in this changing

industry is through digitalization. We value the trust placed in our solutions and will be a responsive partner to The Absolut Company as it continues to move towards a digital enterprise."

Siemens Digital Industries Software is driving transformation to enable a digital enterprise where engineering, manufacturing and electronics design meet tomorrow. The <u>Xcelerator portfolio</u> helps companies of all sizes create and leverage digital twins that provide organizations with new insights, opportunities and levels of automation to drive innovation.

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# ThingWorx, Vuforia, Kepware, and PTC Cloud Supercharge MAP Solution for Stellar

11 November 2019

PTC announced that Stellar, a leader in the design, build, and maintenance of industrial refrigeration facilities, has implemented PTC ThingWorx®, Vuforia®, and Kepware® products to power its Maintenance Advisor and Predictor (MAP) solution. Stellar's MAP solution is designed to enable its industrial refrigeration customers to achieve greater value and energy efficiency.

Stellar has a 30-year record of excellence in industrial refrigeration for food processing plants and cold storage facilities. To continue delivering high value to its customers, Stellar set out on a digital transformation journey aimed at creating a tailored product that would enable its customers to improve equipment uptime and energy efficiency while also managing federal regulatory customer compliance, among other goals. In support of these initiatives, Stellar turned to PTC's ThingWorx, Vuforia, and Kepware products, deployed with the PTC Cloud service.

"As the construction and industrial refrigeration industries continue to evolve, it is imperative to have the right technology partner in place to ensure our systems are meeting customer demands," said Luke Facemyer, divisional vice president of refrigeration, Stellar. "With increasing regulatory requirements and an aging workforce that holds untapped knowledge of system operations, now more than ever, embracing technology such as Internet of Things, Augmented Reality, and cloud is vital. PTC technology allows us to take our Industrial Solutions division to the next level of connectivity."

With ThingWorx, Stellar was able to quickly design and deploy its MAP solution to help customers transition from reactive to predictive maintenance of refrigeration assets. Through the implementation of Kepware for industrial connectivity, Stellar connected and analyzed real-time operating data for up-to-the-minute insights and machine operation recommendations. Rapid deployment, enhanced by PTC Cloud capabilities to build solutions in a cost-effective manner, enabled a more streamlined IT bandwidth. And with PTC's Vuforia augmented reality solution, Stellar was able to capture knowledge and expertise from existing employees to create onsite training manuals.

"We are pleased to support Stellar as they roll out their digital transformation application," said Kathleen Mitford, executive vice president of products, PTC. "Implementing a PTC-powered digital thread throughout its operations will allow Stellar to deliver greater customer value through smart, connected products. We look forward to continuing to support this world-class organization."

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### **Product News**

Accenture and SAP Co-Develop New Cloud-Based Solution to Help Utilities Companies Supercharge Business Processes and Customer Experiences

12 Nov 2019

Accenture announced they are co-innovating and co-developing the new SAP® Cloud for Utilities solution to help companies more effectively manage business processes and customer experiences. This initiative aims to elevate energy transition and customer experiences, helping companies quickly adapt and thrive in times of change.

SAP Cloud for Utilities will be an end-to-end integrated solution born of Project Elevate, announced in May 2019. The solution is designed to be deployed in a cloud or hybrid environment to help utility companies automate sales processes, freeing up more resources to create meaningful customer experiences that can result in loyalty and revenue. SAP Cloud for Utilities can incorporate intelligent technologies and real-time business insights, building extensive capabilities around marketing, service, commerce, product bundling, self-service, fulfillment of complex services and subscription billing for commodity and non-commodity products.

"Working with SAP and our utility industry co-innovation group to accelerate developing SAP's cloud-based platform for utilities can enable our clients to better create new experiences for their customers while streamlining back office operations," said Jean-Marc Ollagnier, group chief executive for Accenture's Resources business. "These benefits are important for utilities to be more competitive in markets that are under growing pressure due to advancing technology and changing consumer preferences, including better home energy efficiency and increased interest in renewable energy sources."

The solution will be built on the market-leading SAP C/4HANA® suite, SAP S/4HANA® Cloud and SAP S/4HANA and will use deep product knowledge and industry and customer management capabilities from Accenture Technology and Accenture Interactive. Developers and industry specialists from Accenture and SAP are working together to help create unified, authentic and personalized customer touchpoints. Their mission is to provide unique industry insights, agile methodologies and integration capabilities that accelerate the advanced features of SAP C/4HANA and SAP S/4HANA across marketing, sales, commerce, service, billing and revenue management and customer data. Accenture and SAP also plan to integrate data with Experience Management solutions from SAP and existing operational data to help enable utility companies manage end-to-end core processes, networks and employees more efficiently.

"SAP Cloud for Utilities is our strategic cloud solution, designed to support lead-to-cash processes that can enable utilities to capture new opportunities and develop fresh business models in the dynamic market for innovative commodity and non-commodity products," SAP Industries Co-President Peter Maier said. "The industry needs to create great customer experiences with integrated solutions for short time-to-market and low cost-to-serve."

This initiative also includes the formation of an industry co-innovation group comprised of leading global utility companies to help define and design SAP Cloud for Utilities. Fifteen utility companies

representing over 100 million customer contracts globally have already joined the co-innovation group including EDP, rku.it, Conergos, Innogy, and MVV. The co-innovation group is still open for utility companies to become early adopters and active contributors.

This agreement further advances SAP's long-standing collaboration with Accenture, building on years of successful co-development and go-to-market activities related to SAP S/4HANA and across collaboration across multiple industries.

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### Kubotek3D Releases 2.0 Versions of K-Display and K-Compare Products

12 Nov 2019

Kubotek3D today announced the 2.0 release of the K-Compare CAD file discrepancy reporting and K-Display MCAD visualization software products. This release includes the maiden version of the K-Compare Revision product for creating reports detailing the differences between two versions of the same CAD model. The other three products in these Kubotek product lines have been enhanced since their last major release with eight updated CAD file translators and several new measurement and/or visualization functions.

### K-Compare Revision

The K-Compare Revision product, announced in September, is a significant new addition to Kubotek's line of CAD utility programs built on the Kubotek Kosmos 3D framework introduced last year. The Revision product automates portions of the process for engineers documenting a change to a part.

K-Compare Revision software enables its users to:

Identify all changes to the model and data

Communicate detailed understanding of changes to all stakeholders

Handle design files from any major source

Quickly create complete reports

**Updated CAD Translators** 

All four K-Compare and K-Display 2.0 software programs offer updated support for the latest versions of these major CAD file formats:

ACIS SAT/SAB read extended to 2019

CATIA V6 read extended to R2018x and R2019x

Creo read extended to V6.0

Inventor read extended to 2020

Kosmos read extended to 2.0

NX read extended to 1872 series (up to 1884)

Parasolid read extended to 31 and 32

Solid Edge read extended to 2020

K-Display 2.0 products include added support for:

Industry Foundation Classes (IFC) version 2x3, 2x4

CATIA CGR lightweight 3D mesh files, all versions

New Visualization and Measurement Features

A simple cutting plane function has been added to K-Display products which allows users to easily visualize the interior sections of complex parts. Additionally, the wireframe display mode has been enhanced to include silhouette edges which improves visualization of part geometry.

Since the initial major release two new measurement functions have been added to K-Display products which are important for engineering or production cost estimation. The first new function analyzes 3D models of plastic parts to find areas which are difficult or impossible to create with a simple mold strategy. The other new measurement function supports quick overall measurements of the envelope of selected 3D models by wrapping them with temporary "bounding box" solids.

The ability to quickly measure the angle between two linear edges of a model is also now available in all four products.

#### **Translation Validation Improvements**

The ability to compare folders of part files and assembly files which include references to part files has been significantly enhanced since the initial major release. These new features allow users comparing a large batch of files to easily line up corresponding pairs of files into horizontal rows to simplify visualization. Comparison of PMI annotation (3D feature control frames) has received a significant upgrade to include testing of the associative connection to model faces and semantic style testing of the tolerance type and values within control frame. Validation PDF reports have an added option to include an automatic image capture of the region of the parts where each difference has been detected, with the faces found as different highlighted.

Free trials of Kubotek software are available. For more information, visit kubotek3d.com.

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# Mastercam 2020 Lathe Delivers Powerful Toolpaths and Techniques in a Comprehensive Turning Software

11 November 2019

From accepting and programming any CAD file to Dynamic Motion roughing and precision finishing, Mastercam 2020 Lathe gives you a variety of options to turn all your parts exactly as you need them. Mastercam 2020 Lathe features new 3D tooling, filters for inserts and holders, improved chuck jaw definitions, and much more.

3D Tooling

3D Tooling has many usability improvements, such as the new 3D tool icons in the tool lists to help distinguish between 3D and non-3D tools in the Lathe Tool Manager, and the new stop-on-contact

functionality when mating insert to holder. Mastercam 2020 allows you to build inserts using the new Insert Designer function panel, as well as holders using the new Holder Designer panel.

Filters for Inserts and Holders

Mastercam 2020 Lathe lets users filter inserts and holders by attributes by selecting the attributes they are looking for. Only items that match that criteria will display in the Tool Manager.

### Improved Chuck Jaw Definitions

Parametric jaw definitions are now more powerful and flexible with Mastercam 2020 Lathe. A few enhancements include support for pie-shaped jaws in additional to rectangular-shaped jaws, ability to change the mounting orientation with easily reversible steps, as well as a live preview showing the overall shape of the jaws and total dimensions. In previous versions, you were limited to a fixed set of seven possible reference positions to identify the location of where the jaws clamp the part. Now, you can select any point on the profile.

Also available in the Mastercam 2020 Lathe is:

Auto-populating compensation point when defining 3D tools.

New tabs to display library inserts and holders in the Lathe Tool Manager.

Chuck jaw improvements such the ability to define as many steps as required, set the dimensions of each jaw individually, and add a radius to the step.

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#### Smarter Production With Latest ALPHACAM

13 November 2019

As part of Hexagon's philosophy of supporting data-driven Smart factories, the latest release of ALPHACAM CAD/CAM software speeds up how jobs which require several processes are managed.

A new job type has been introduced in ALPHACAM 2020.1. The Multiple Process Jobs functionality makes it simpler to create jobs and orders in Automation Manager, which need to be outputted to more than one machine or require any secondary processing at the same machine.

"In the past, users had to create multiple jobs to process complex operations in Automation Manager," says Product Manager Chip Martin. "But now, a single job can be created, containing all the different machines and manufacturing processes that the part goes through."

He highlights an example of machining the top and back of a part. In the latest version of the software, those two processes can easily be worked as a single job. "NC code will simply be created for both of them automatically, which is also the case for additional machines and other processes."

This improvement streamlines how complex manufacturing processes are handled in Automation Manager. "Once the process is defined, and the Multiple Process Job is created, the operator can easily repeat the same complex job many times for different parts. Also, the user interface will help show exactly which processes and machines the part will go through."

Several enhancements have been made to Automation Manager's output file options. Firstly, the new File Name Configuration dialog creates names from job information, job files, or any custom text.

Secondly, a number of improvements to Report Creation include the ability to generate up to four different layouts, which can also be printed. All the materials being used can be included in one report; and a report can be produced for each material and each nested sheet.

"This fine-tune control means users can tailor Automation Manager output entirely to their specific requirements."

The Rough/Finish of solid faces with Tool Side function now supports cylindrical faces to be machined. Planar and cylindrical faces can be combined in a single selection. For solid faces that are perpendicular or undercuts, an active work plane can be used to define the preferred approach angle (scanning direction).

"In the previous release we introduced the ability to machine solid faces directly for rough/finish and sawing," says Chip Martin. "This has now been enhanced to allow simple planar faces to be machined without creating new geometry."

Cylindrical faces as well as planar faces can now be selected, and ALPHACAM automatically finds the best angle for machining them. This calculation is carried out while keeping a fixed angle for the tool in a work plane, guaranteeing that most controllers will be able to support compensation (G41/G42), and Lead-In/Out generated by ALPHACAM.

"Before this improvement, users had to carry out several steps to machine a selection of faces using the tool side. Now, instead of creating workplanes and extracting geometries, they simply select the faces for machining, and ALPHACAM calculates the required tool angle and workplane to machine a selection of faces.

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# Trimble: BIM Software Enables MEP Professionals to Streamline the Production of Constructible Models

14 November 2019

Trimble announced Trimble Nova version 15.1 Mechanical, Electrical and Plumbing (MEP) design software. In the new version, 3D manufacturer-specific components can be directly downloaded and placed into a model from the cloud-based content platform. Nova users now have easy access to up-to-date manufacturer content in real time. As a result, manufacturers are better able to support their customers through the building process continuum.

Trimble Nova 15.1 features functionality specific to the MEP trades in Germany, Austria, Switzerland and France. The software enables customers to focus on the constructibility of the building. It integrates design, drawing and engineering calculation and analysis.

"Buildings are a collection of assembled products. By bringing manufacturers and MEP designers closer together, Trimble helps optimize the constructibility and quality of the end-to-end construction process," said Lawrence Smith, general manager of MEP at Trimble. "The latest version of Nova is the direct result of prioritizing our customers' top feature requests and allowing end users to take part in the design of new features."

In addition, the new version adds significant productivity improvements that were requested by customers, including:

Improved IFC functionality that provides customers with enhanced, native import capability and

### interoperability

Enhanced clash detection with filters, previews and other ease-of-use improvements New task-specific workflows that facilitate specialized operations for each of the MEP disciplines Improved handling of 3D models

Trimble MEP makes Building Information Models (BIM) a reality by delivering solutions that transform disconnected workflows between stakeholders into a coordinated, constructible and actionable building model. To ensure a building is constructed in the most efficient way, the Trimble Constructible Process goes beyond BIM by creating models that use actual manufacturer content, allow for prefabrication and full clash detection, connect stakeholders to coordinate in real-time and bring the model directly from the computer to the field. This process optimizes the entire design, build and operate lifecycle.

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