

business trends

91 BUSINESS MAGAZINE FOR INTERNATIONAL ENTERPRISES

Business Trends is an international business magazine

Publisher:	Business Trends Kuipersdijk 20-73, 7512 CH Enschede The Netherlands Tel: + 31 (0)53 574 55 47 Fax: +31 (0)84 877 01 15 e-mail: ellen@business-trends.nl internet: www.business-trends.nl
Editorial Staff:	Patricia Allen, Laura van Beest, Bette Berlau, Anne Fransz, Karin Gourley, Ellen Groen, Donna Lee, Clare Martin, Monica Meijer, Christa Niemeijer, Audrey Rhodes, Erna Welscher
Secretariat:	Bette Berlau
Lay-out:	Mooilucht, Hengelo, The Netherlands www.mooilucht.nl

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Dear readers,

In our publication we regularly report on the large and growing number of manufacturers who are realising substantial financial and environmental benefits from sustainable business practices. These companies treat sustainability as an important objective in their strategy and operations to increase growth and global competitiveness. This trend has reached well beyond the small niche of those who traditionally positioned themselves as “green,” and now includes many prominent businesses across many different industry sectors. In this issue we notably zero in on the efforts made by high-profile companies in the pulp and paper industry, who exceedingly focus on sustainable forest management and responsible procurement throughout their supply and value chains.

Elsewhere in this issue you can find out how the German subsidiary of fast food chain McDonald’s produces less plastic waste. The company has committed to more sustainable packaging with the aim to save 1000 tons of plastic a year; this is about one-third of the packaging that McDonald’s uses in Germany. Philipp Wachholz, Director Corporate Affairs, McDonald’s Deutschland, highlights some of their recent and new initiatives which aim to engage both McDonald’s customers and the company’s partners in their supply chain.

We hope these stories will inspire you as you continue to grow your own business; as sustainably as possible, we hope.

Ellen Groen
Editor in Chief

Reaching out to Dutch online customers

Peek & Cloppenburg is an international chain of retail clothing stores with headquarters in Germany. The company has Dutch roots: the Dutch merchants Johann Theodor Peek (1845–1907) and Heinrich Anton Adolph Cloppenburg (1844–1922) founded it in the city of Düsseldorf, Germany, over a century ago. Both men had moved from the Netherlands to Germany. The strong connection to the Netherlands remains to this day and the company in fact recently further strengthened it: in addition to the Peek & Cloppenburg shops in the three largest Dutch cities, the Dutch can now also shop at Peek & Cloppenburg online.

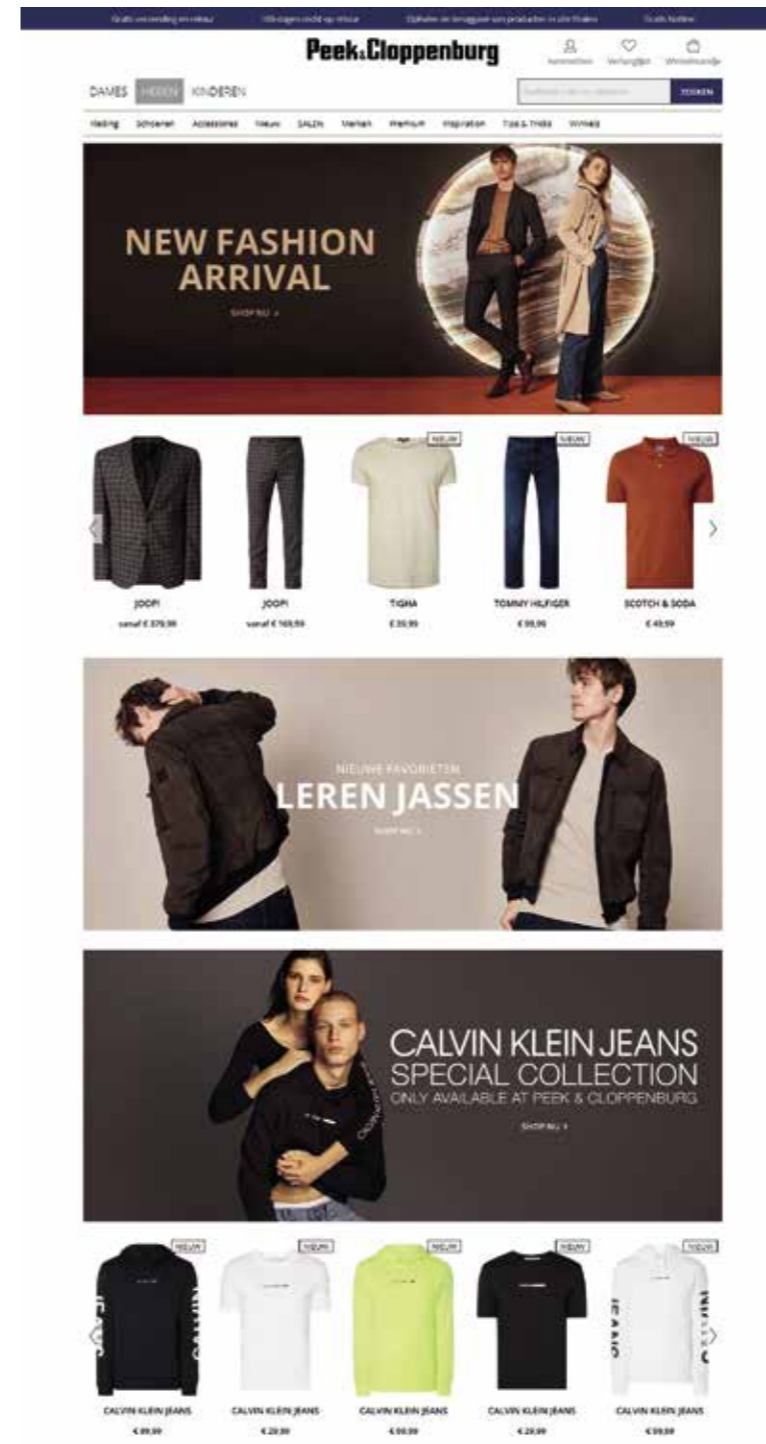
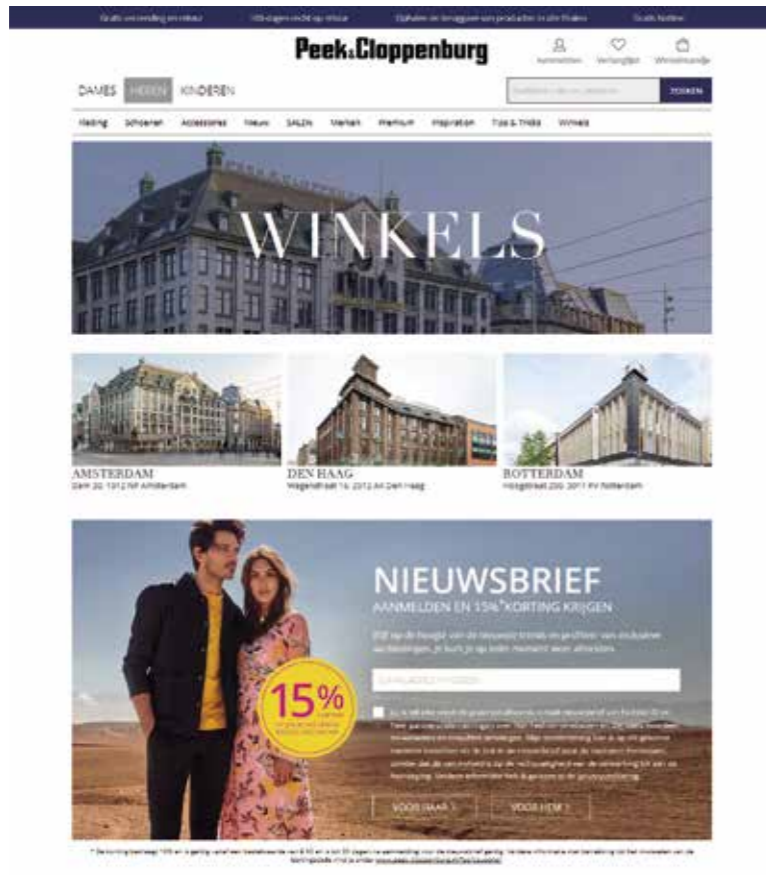
1901, Peek & Cloppenburg opened their first German stores in Berlin and Düsseldorf. In 1989, as part of further expansion, the Anson's company was formed and has established itself as a market leader among menswear specialists. In February 2008, Peek & Cloppenburg KG Vienna was established as a headquarters for Austria and Eastern Europe and to serve the growing markets in these regions.

In the Netherlands, Peek & Cloppenburg Düsseldorf currently operates physical stores in the country's three largest cities: in Amsterdam, Rotterdam and The Hague. All three are in the western part of the country but many Dutch people who live near the border with Germany are familiar with the retailer and make their nearest Peek & Cloppenburg store a destination when they visit neighbouring German cities. This in part inspired the launch of a digital channel

specifically for the Dutch market, launched by Peek & Cloppenburg subsidiary Fashion ID.

The company regards the webshop as an important standard in customer service, and sees great potential in the Dutch market to realize its omnichannel strategy. "The Netherlands is an exciting market for us", said Nicolay Merkt, managing director at Fashion ID, in a press release on the subject. "Through our local sales branches and our stores in Germany close to the border with the Netherlands, we have made a name for ourselves as a multi-brand supplier of high-quality products. With the webshop we can now offer our physical stores customers even more services. We are also looking forward to new customers who are introduced to our range online for the first time."

Online sales are increasingly important for the retailer. In 2013, Peek & Cloppenburg Düsseldorf started its online distribution in Germany via www.fashionid.de. Following the successful launch, the German online shop was renamed to www.peek-cloppenburg.de in 2016 and an online shop in Austria was launched. In 2018, Peek & Cloppenburg opened a digital web shop in the largest market in Central and Eastern Europe, Poland. And along with the online shop in the Netherlands, the online shop of Anson's was also launched this year. There is also plenty of dynamism at Peek & Cloppenburg's physical retail business. In Bocholt, near the border with the Netherlands, a new warehouse of 5,500 square meters will arise. And in Eastern Europe, the fashion company will open three new stores: two in Romania and one in Croatia. Next year, the launch of a store in



Tallinn, Estonia, and a launch of a store in Belgrade, Serbia, are next. If that happens, Peek & Cloppenburg will be present in seventeen different countries with a total of 120 stores.

Peek & Cloppenburg sees high-web-affinity as one of the most interesting aspects of the Dutch market. According to the Dutch statistics office 98 percent of Dutch households had internet access in 2017; this against a European average of 87 percent. Also, eight in ten Dutch consumers regularly shop

online. "This is an important argument for us to also offer our product range online," said Nicolay Merkt. "The establishment of online shops in Germany, Austria and Poland created an ideal basis for expanding into other markets. Due to the national awareness of the Peek & Cloppenburg brand and the purchasing power of potential Dutch customers, the Netherlands is the optimal market for the further expansion of the Fashion ID, which is responsible for the online activities of Peek & Cloppenburg."

The retailer does not plan to extensively localise its offering for the Dutch online channel. "Our purchasing teams are constantly analysing all markets to ensure that our assortment suits the customers' demands. In general we offer our products in all our online shops and do not offer exclusive collections for single markets, which allows us to provide the broadest possible product range for all our customers."

The new online shop is the basis for all Omnichannel services such as Click & Reserve, Click & Collect or their in-store feature to order clothes directly from the online shop if they are not available in-store anymore. The retailer expects that these features will improve their customer's experience in their shops and are a significant advantage over pure online traders. Peek & Cloppenburg are eagerly collecting new experiences and, with the help of these, plan to constantly optimise their online business or adapt product ranges. In addition, the retailer would like to increase the awareness of Peek & Cloppenburg through the online shop.

Peek & Cloppenburg

Peek & Cloppenburg KG
Berliner Allee 2
40212 Düsseldorf
Germany
Website: www.peek-cloppenburg.com/nl

A global partner to aerospace

KUKA is one of the world's largest suppliers of intelligent automation solutions and robotics. The company serves a variety of industries and notably serves as a partner to the global aerospace industry, with customers including Airbus and Boeing. Now that KUKA has joined the Pacific Northwest Aerospace Alliance (PNA), an organization supporting companies in the aerospace industry, as a participating member, KUKA will have the opportunity to share their automation expertise at PNA conferences and events, while participating in the aerospace industry. The PNA's purpose is to strengthen the manufacturing supply chain to provide lighter, more fuel efficient, and safer aircraft. "KUKA has been involved with creative innovative solutions for some of the largest aerospace manufacturers in the industry, such as Boeing, Spirit Aerostructures, Blue Origin, SpaceX, Lockheed-Martin, Textron Aviation, and many others," comments Kevin Gavin, sales director for KUKA Robotics. "We knew it was time to immerse ourselves further by joining PNA to provide our experiences and help keep abreast of all the latest aerospace innovations."

The history of KUKA dates back for more than a century. The German firm first started to develop robotics in the early 1970s: the FAMULUS was the first robot with six electric motor-driven axes, and a breakthrough for the automotive industry. Since then, many innovations have followed and with sales of around 3.5 billion euro and around 14,200 employees, KUKA today is one of

the leading (and largest) robotics companies in the world. It serves customers in a variety of industries, including the automotive, electronics, consumer goods, and metalworking, logistics/e-commerce, healthcare and service robotics sectors. It offers the full spectrum of robotics from components and cells to fully automated systems. KUKA's US Operations is headquartered

in Shelby Township, MI and KUKA's Group Headquarters located in Augsburg, Germany.

KUKA's facility on the West Coast of the US, in Fremont, California, opened in 2017. Kevin Gavin is the sales director for KUKA Robotics in the region. He is responsible for KUKA general industry sales, and has notably been working with aerospace accounts for more than 20 years. His focus is on safety, quality, cost, and on-time delivery. He has worked for KUKA Robotics for nearly 11 years and has more than 34 years of experience in the robotics industry.

He says the aerospace market is extremely important to KUKA. "Major aerospace manufacturing companies in the US, and abroad, depend on KUKA robots daily for high precision drilling, composite layup, and non-destructive testing to name a few applications. KUKA has longstanding experiences



in the accurate movement of large aerospace components and assemblies with the omniMove mobility platform. KUKA is a significant supplier in that market space."

The omniMove is notably used in the construction of the Airbus A380 in Hamburg, Germany. This construction involves moving aircraft components measuring 15 meters in length and weighing up to 90 tonnes. The KUKA omniMove mobile transport platform, a transport vehicle for heavy loads that is equipped with omnidirectional Mecanum wheels, makes this possible. The wheel design ensures unrestricted motion without the need to steer the wheels. This motion is important due to the different work stations and the huge fuselage sections, as space in the Airbus hangar is limited. KUKA omniMove's Mecanum wheels move in every direction and operate with the utmost precision even with a maximum payload of up to 90 tonnes.

Beyond the quality of its technology, KUKA also prides itself on working with its system partners and customers from the start to provide innovative automation solutions, as Mr. Gavin

emphasizes. "We work closely with leading aerospace system integration partners to provide end users with a complete and timely solution. Our robots are designed with a seamless link between legacy and modern systems as the company evolves – that way, our customer is not only set up for success now, but in the future. The reach, rigidity, and positional accuracy of KUKA industrial robots is second to none in the robot industry. Combining these mechanics with an open architecture control system, gives our customers and integration partners a flexible platform to customize and build on."

As an example of a creative solution, Mr. Gavin highlights a valued KUKA partner, Genesis Systems-IPG of Davenport, IA. Their system utilizes up to 20 KUKA robots to support and position a composite wing component for non-destructive inspection, by another robot. All robot motions are fully coordinated to begin, and end operations as a functional system. A single robot will release the part and move out of the way, as the inspection process approaches, then will re-engage the part, after the process has passed. Another KUKA partner, Electroimpact, of

Mukilteo, WA, customizes KUKA's standard robots by adding a Siemens 840D controller, then uses that platform to provide world class drilling and fastening operations, composite layup, and other aerospace focused applications.

As a participating member of the PNA, Mr. Gavin expects that KUKA will be able to provide a different perspective and creative approach to aerospace automation with industrial robots. "Our aim is to support this industry by being an active member of the aerospace community. We anticipate staying at the forefront of technology applications."

KUKA

KUKA Robotics
48820 Kato Rd #500b
Fremont, CA 94538
USA
Website: www.kuka.com

The brightest minds in the CDMO industry

Recipharm is a leading contract development and manufacturing organisation (CDMO) headquartered in Stockholm, Sweden. Focused on supporting pharmaceutical companies with its full service offering, the company takes products from early development through to commercial production. In a Q&A Erik Haeffler, Vice President – VP Manufacturing & Head of Sustainability at Recipharm highlights the company's latest developments and future opportunities.

Reflecting on Recipharm's founding in 1995, what would you say the company is most known for today?

Since its inception in 1995, Recipharm has established itself as a leading contract development and manufacturing organisation (CDMO) that caters for large and small pharmaceutical companies. Over time we have diversified our capabilities and expanded our geographical reach through a number of acquisitions of

former big pharma sites, allowing us to optimise a molecule into product with our comprehensive end-to-end development and manufacturing services. We have focused our efforts on our core areas of expertise including inhalation and complex formulation, building a strong reputation in the development of pharmaceuticals.

What is the company's value proposition and competitive advantages?

Drug developers are increasingly keen to reduce time to market and reduce costs where possible, often this leads them to outsource to CDMOs that have the ability to streamline the drug development process. Through experience and acquisitions to bolster our capabilities, Recipharm has developed a strong pharmaceutical offering and the capacity to effectively manage complexity.

With production facilities across the world that can both develop and manufacture a range of product types and dosage forms, we can simplify the supply chain and manage risk so that our customers' products are delivered on time, without compromising on quality.

Additionally, we have invested EUR 40 million into our operations so that we could continue to effectively meet the needs of our customers and the market in light of the serialisation regulatory

requirements. By forming a dedicated taskforce and actively adapting our operations in line with the new legislation, Recipharm was able to standardise our serialisation offering across key sites one month before the February 2019 deadline. Since then, we successfully distributed our first batch of serialised products to Europe in 2018 and now provide customers with access to fully compliant capabilities.

What are the trends that are driving your industry today, and how is Recipharm meeting those needs?

The landscape for CDMOs has significantly shifted in recent years. A trend that is primarily impacting the sector on an ongoing basis is the rise in merger and acquisition (M&A) transactions and consolidation strategies. While consolidation helps CDMOs respond to market trends, integrating facilities into CDMO operations also equips Market Authorisation Holders (MAHs) with specialised resources that can be effectively used for customer projects. In 2018, Recipharm acquired Sanofi's former inhalation product manufacturing facility in Holmes Chapel. Acquiring this site has provided the company with access to specialist technologies for metered dose inhalers and nasal sprays. The facility also has development sites that are designed to cater for dry powder and other processes to develop and manufacture inhalation products.

Due to the opportunities it presents for drug developers, the 505(b)(2) new drug applications (NDA) pathway has risen in popularity. The ability to approve new drugs via this pathway when a different delivery route is taken has impacted the levels of interest in orally inhaled



products and nasal sprays, meaning increased market demand for services in this area. As a result, we expect to see greater exploration into development techniques for inhaled delivery and continued demand for our integrated outsourcing service for inhalation.

Additionally, there is an increasing trend towards pharmaceutical manufacturers improving their sustainability efforts and reducing their environmental impact. Here at Recipharm, we are committed to investing in sustainability and environmental initiatives. In order to ensure compliance and adhere to stringent requirements in the future, we recently achieved the ISO 45001 certification at our site in Wasserburg, Germany. This certification has given Recipharm the ability to ensure that it is operating in compliance with new and existing legislation across its global sites. Press release: Recipharm names 2018 International Environmental Award winner.

Can you explain briefly the importance of this environmental award for Recipharm?

As a successful CDMO, Recipharm is committed to protecting the environment and maintaining sustainability standards across the industry. In our efforts to minimise the negative impact of our activities and

act responsibly, we strive to stimulate discussion and generate learnings between the pharmaceutical industry and academia. The Recipharm International Environmental Award is intended to recognise individuals who have made a substantial impact on identifying and tackling environmental issues. In order for the industry to manage the risk to the environment we need to take the right actions and focus on the relevant areas meaning research in this area is essential. For example, a lot of relevant and valuable research has been generated around areas such as contamination of water from pharmaceutical products, which has subsequently resulted in prominence being placed on the topic. It is this area that is now the focus of our

award scheme, by taking this knowledge and promoting it, Recipharm hopes to educate and enlighten the rest of the industry and hopefully inspire them to take action.



Box 603
SE-101 32 Stockholm
Visiting address: Drottninggatan 29
Sweden
Website: www.recipharm.com



Simulate at the Speed of Design

With a global footprint, serving more than 5,000 customers in 25 countries, Altair has more than 2,000 engineers, scientists and creative thinkers providing software and cloud solutions in product development, high performance computing (HPC) and data intelligence. Altair HyperWorks™ 2019 is the latest version of its simulation- and Artificial Intelligence (AI)-driven product development platform. “We want to help our customers explore more ideas, better understand their designs, and improve profitability,” says James Scapa, Altair’s chairman, chief executive officer and co-founder.

Founded in 1985, Altair exists to unleash the limitless potential of the creative mind. With a vision to transform product and business decision-making through simulation, data intelligence and optimization solutions, Altair is best known for its engineering and design platform, which offers a wide range of multi-disciplinary Computer-Aided Engineering (CAE) solutions, and is one of the most innovative and

comprehensive offerings available on the market.

Altair software enables customers to enhance product performance, compress development time and reduce costs. “We have been working with customers for more than 30 years to solve some of the world’s most difficult engineering challenges and provide them with an extraordinary high level of service. We enable our customers to explore limitless ideas, better understand their designs and improve profitability by using our model-based systems design, early geometry ideation, detailed multi-physics simulation and optimization,” says James Scapa.

Altair introduced the concept of simulation-driven design and provides the broad physics-based design solutions required to deliver the interconnected products customer demand. Altair is exploiting the huge potential that exists at the convergence of Model-Based Simulation and Data-Driven Simulation Solutions.

Altair HyperWorks™ 2019, the latest version of its simulation- and AI-driven product development platform, expands on the number of solutions available for designers and engineers, under a single, open-architecture platform, to speed decision-making and time to market. User experience advancements and intuitive workflows empower both expert and citizen analysts to streamline product innovation.

“Our development focus for HyperWorks 2019 was to increase solve speed and functionality across our solutions for every stage of product development with optimization and multi-physics workflows for all manufacturing methods,” Scapa explains. “HyperWorks 2019 enhances the user experience for both experts and part-time analysts. This release includes a new set of workflows for our flagship Altair HyperMesh product, making advanced analysis capabilities more accessible. In addition, the new Altair HyperLife product enables test engineers to perform fatigue simulations with minimal training.”

“At Altair we are constantly pushing technology to the edge and challenging boundaries of what’s possible. That comes to life through the people we hire; incredibly bright minds who light the way to new breakthroughs. We are also always searching for new technologies that will help expand our offerings to help customers achieve seemingly impossible goals, like reducing the weight of a plane’s wing by 40 percent. We have acquired 27 companies in the past 10 years, and we will continue that trajectory.”



Altair HQ
1820 E. Big Beaver Rd.
Troy MI 48083
USA
Website: www.altair.com
<https://www.linkedin.com/company/altair-engineering/>
www.facebook.com/altairengineering
https://twitter.com/altair_inc

James R. Scapa,
Chairman, CEO,
Co-Founder at Altair
Engineering Inc.



Clean alternative to phosphates

Many consumers have become increasingly concerned with the added ingredients in their food products and the meat industry is not exempt from these concerns. While phosphates still are very popular ingredients to use in meat and poultry products, for example, producers exceedingly look for ‘clean label’ alternatives, particularly in the European Union and in other regions with high food quality standards. US-based Fiberstar, a leading player in natural citrus fibre technology, proposes Citri-Fi as an alternative to phosphates in meat products. Nick Kovalenko, VP of International Sales at Fiberstar, emphasises that Citri-Fi is produced with no chemical modifications.

Headquartered in River Falls, Wisconsin with manufacturing in the USA, Fiberstar sells products globally in over 65 countries. Its Citri-Fi® natural citrus fibre technology was developed at the University of Minnesota in 1998. The company has won multiple awards and continues to invest in research to commercialise new fibre functionalities to improve the quality of clean label food and beverage products.

“Citri-Fi® natural citrus fibre is unique because it is produced by a process that is free from chemical modifications,” Mr. Kovalenko explains. “The patented process opens up the fibre to provide significant high water holding and emulsification properties compared to other fibres in the marketplace. This citrus fibre is comprised of about 68% dietary fibre where half is soluble and the other half is insoluble. And because Citri-Fi contains native pectin which helps to ensure water binding and emulsification stability.”

Citri-Fi can notably serve as a ‘clean’ alternative to phosphates in meat products. Phosphates are often added to processed foods, not for nutritional benefits but for food science purposes: as emulsifiers to keep oil and water mixed together in

processed cheese, for example. In sodas, iced teas, and French fries, phosphates add colour, while they’re also found in powdered milk, powdered coffee, and pudding. The most common place you’ll find phosphates, however, is in meat, poultry, and seafood: it’s injected in a water solution to help the meat retain more water when you recook it. Citri-Fi, when used with carrageenan, starches and/or sodium carbonate, can achieve similar benefits to phosphates in various meat products. In contrast to phosphates, however, Citri-Fi is all-natural and sustainably produced. Another big benefit for food producers is that they can market products enhanced with Citri-Fi as a healthier, or in any case a cleaner alternative.

The European market is one of Fiberstar’s key markets. “The natural food trend has been demanding more foods without E-numbers,” Mr.

Kovalenko comments; E-numbers are codes for substances that are permitted to be used as food additives for use within the European Union (EU) and European Free Trade Association. “Since Citri-Fi® has no E-number, it is an ideal solution for food and beverage products.” He adds that the plant-based foods segment is another growth driver for them. “In meat alternatives Citri-Fi can be used to bind water and oil to improve the texture and mouthfeel, for example.”

Citri-Fi® natural citrus fibre meets the EU food quality standards.



Fiberstar
Website: www.fiberstaringredients.com



Global partnership in DevOps

DBmaestro, a global DevOps leader in database automation, recently announced a worldwide partnership with IBM, offering database release automation capabilities designed to optimise DevOps environments for enterprises. As part of the deal, IBM will be offering DBmaestro's platform to its worldwide enterprise customer base. "This strategic alliance builds on our existing relationship in harnessing each other's products and support our joint mission to enable enterprises to become more agile, build, deploy, and release code securely and faster," says Mr. Yariv Tabac, CEO and Co-founder, DBmaestro. "We're very proud and excited that IBM chose DBmaestro to bring DevOps for Database automation to its global enterprise customer base."

Yariv Tabac founded DBmaestro in 2015, along with Yaniv Yehuda. While Agile and digital transformation appeared to challenge the old world, they noticed a great potential in the DevOps world and started developing a developers collaboration tool to enrich the existing code version control solution with database capabilities. After the market had grown and DevOps became common practice, Yariv and Yaniv understood that

DevOps Day 2 solutions will expand and the need for such will increase.

"The DBmaestro DevOps platform is unique in that we are one of the only companies in the entire world which practices DevOps for Databases," Mr. Tabac points out. "When it comes to CI/CD, the database has long been ignored, and as a result, application development teams can make lightning-quick releases but are hampered by the slow speed of database releases. In addition, since databases are not a part of DevOps initiatives, and Database Admins (DBAs) still mainly focus on executing database releases manually or by script, they are at much greater risk for critical errors and downtime, which can cost hundreds of thousands of dollars per hour in damages and lost revenue. DBmaestro does not look to create new DevOps processes, rather to bring the database into existing processes, which is why we've worked on providing integrations with all of the leading CI/CD platforms and tools, including CloudBees (Jenkins), Bamboo, JIRA, git, UrbanCode, Chef, Puppet, Azure DevOps, XebiaLabs, Delphix, actio and numerous others."

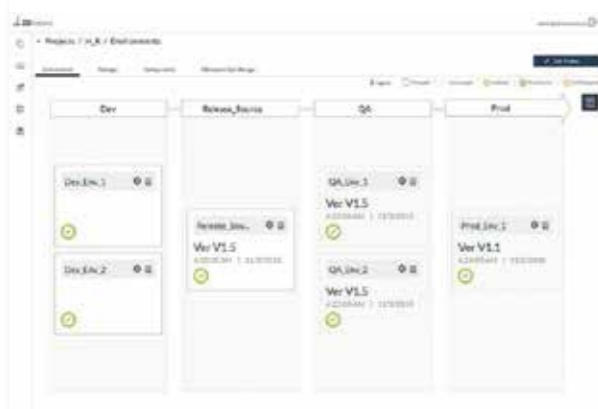
With a customer base that includes ADP, ING Bank, National Bank of Canada, GM, Stars Group, T-Mobile, Anthem, and the Hartford Group, DBmaestro has long served the Fortune1000 in offering the most robust DevOps platform. The recently announced partnership with IBM



supports DBmaestro's strategy to support enterprise customer needs through integrations with complementary agile and DevOps solutions, which include Atlassian's Jira, IBM's UrbanCode, Git, Chef, Puppet and Jenkins, among others. IBM has long been a partner, with DBmaestro offering seamless integration with IBM UrbanCode Deploy & Velocity. "The two platforms compliment another, and by using them together, are able to create a comprehensive DevSecOps environment encompassing code and databases together," says Mr. Tabac. "This allows IBM UrbanCode customers to become more agile and swift in their releases, allowing them to build, deploy and release code faster, to the database as well. For DBmaestro, beyond the obvious benefit of a strategic alliance with a global company such as IBM, it also showcases the importance of DevOps for Databases, as well as the flexibility provided by DBmaestro's DevOps Platform, and our ability to integrate with a plethora of existing CI/CD tools."

DBmaestro
DevOps for Database

DBmaestro
Website: www.dbmaestro.com



Shaping the future of proton therapy

Founded in March 1986, in Louvain-la-Neuve, Belgium, IBA (Ion Beam Applications S.A.) is a global medical technology company focused on bringing integrated and innovative solutions for the diagnosis and treatment of cancer. Demonstrating IBA's technology leadership in Flash therapy research, the company delivered Flash Irradiation in a Clinical Treatment Room at the University Medical Centre Groningen (UMCG) in The Netherlands. "Flash therapy could potentially change the radiation therapy landscape significantly," says Aymeric Harmant, IBA's Global Marketing Director Proton.

IBA was founded by Yves Jongen as a spin-off of the Cyclotron Research Center of the University of Louvain. It employs about 1500 people in 40 locations and concentrates on four business activities: Proton Therapy, Dosimetry, RadioPharma Solutions, and Industrial Applications. With 65% of proton therapy patients been treated using IBA technology, IBA is the worldwide leader in proton therapy technology. "It's the longest and largest experience in the industry in proton therapy which is a very complex technology to master with a very long learning curve. We now have 54 centres who are IBA clients of which the first one started to treat in 2001. That means we have a long experience of delivering this technology, implementing it and working with it for years," Mr. Harmant adds. Based on this experience, IBA offers the highest uptime rates and can install

systems in less than 12 months.

Proton therapy is considered the most advanced form of radiation therapy that uses high-energy proton beam to irradiate tumours. Proton therapy is used to treat many cancers and is particularly appropriate in situations where treatment options are limited and conventional radiotherapy using photon beam presents unacceptable risks to patients. These situations include eye and brain cancers, head and neck cancers, prostate, liver, lung, breast, and paediatric cancers, as well as other tumours in close proximity to one or more critical structures.

IBA is working on the next evolution of proton therapy and is already steps ahead of competition with its arc therapy-approaching the tumour in a rotating manner-, the treatment of moving targets and Flash therapy. Flash therapy is

delivering a very high dose of radiation in less than a millisecond. It can shorten therapy treatment for patients from 30-40 days to two or three days. "It's also much cheaper to deliver because right now the cost of proton therapy is much higher than traditional radiation therapy. But with Flash it could become similar or even cheaper than the traditional methods," Mr. Harmant explains.

On March 1, 2019, IBA delivered several Flash irradiations at isocenter in one of the two gantry treatment rooms at UMCG in Groningen. Results obtained with the current IBA Proteus® solution are very promising and largely exceed the conditions required to obtain the Flash effect with a dose rate up to 200 Gy/sec. This novel technique has the potential to dramatically change the landscape of radiotherapy and patient cancer care.

IBA International Headquarters
3, Chemin du Cyclotron
1348 Louvain-La-Neuve
Belgium
Website: www.iba-worldwide.com



Discover what is coming next...

➤ Motion Management

➤ Arc Therapy

➤ Flash Therapy

New advanced healthcare analytics offering

MedX, Inc., an international leader in revenue cycle management (RCM), medical documentation, and health information technology solutions (HCIT) has successfully completed the acquisition of Prevalent, Inc. and Axcension, Inc. The acquisition of these organizations completes another phase of iMedX's ongoing global strategy to enhance healthcare technology and enable unparalleled insight into operations for healthcare facilities with the ultimate goal of improving patient care while also reducing costs. "A comprehensive analytics platform will be a vital part of every provider's RCM workflow in the coming years, which is why these acquisitions are so important to us," says Christopher Foley, Chairman and CEO of iMedX. "Having thorough insight into billing operations will be a necessity as we continue to maximize reimbursement for our clients in an ever-changing regulatory environment."

iMedX was founded in 2002. Long-time industry veteran Christopher Foley was appointed to Chief Executive Officer and Chairman of the board of directors in 2013. The company was significantly smaller back then, he remembers: "I was brought on in an effort to accelerate growth, enhance

our global footprint, and to broaden our service offering."

Under Mr. Foley's leadership, iMedX successfully integrated fourteen acquisitions in addition to developing its medical Coding & Consulting practices, driving significant growth. The company

has also grown organically, building a full suite of high-value revenue cycle management solutions including medical transcription, medical coding services, results-based consulting, and education opportunities.

In recent years the focus has been on adding business intelligence tools. "We understood that analytics was the final piece of the puzzle," says Mr. Foley. "We recruited business intelligence experts to develop tools that tie into all of our systems and decided to acquire Prevalent and Axcension. This was a decision that wasn't taken lightly: we spent some time searching for technology that offered true value to accumulated data, in other words solutions that can turn these data into meaningful, actionable information for hospitals. Now that we have integrated Ascension's and Prevalent's technology, we feel that we can make business intelligence work for all of our customers, both large and small."

For healthcare providers, the combination of iMedX, Axcension, and Prevalent's proprietary analytics technologies will provide a business intelligence solution that has never been seen before, according to a press release by iMedX. Across multiple systems, this solution will enable complete understanding and transparency. By



providing a streamlined system for quickly exploring all of their company's data, the new iMedX Analytics will help healthcare providers in taking smarter decisions. In addition, healthcare providers will be able to identify potential areas of improvement and resolve billing issues in quick time with the help of automated monitoring and using advanced rules.

"These acquisitions bring together the brightest minds and technology to form one cohesive team dedicated to helping clients achieve their operational and financial goals," says Mr. Foley. "Our capabilities are more sweeping than ever before, and we can now reach a much broader set of healthcare clients and moreover achieve our goal of reducing costs and improving patient care." He adds that within days of announcing iMedX Analytics, they won four new clients, including two that they had not served before. "They are very excited about our solution and tell us it's a real game changer for them."

What makes iMedX Analytics unique in his view is that it can put sophisticated business intelligence capabilities such as predictive analytics in the hands

of people all levels of a hospital organisation, so not just the programmers. "With the addition of analytics, we can now offer a front to backend solution to address a wide range of issues around the revenue process, covering everything from coding and billing through to transcription. We can customise our solutions and the user interface to meet specific customer requirements, and that includes customising analytics capabilities. We can ensure that the data are presented the way they want it to be presented, for example, or ensure that dashboards provide specific levels within the hospital organisation with the information they want and need to see. I believe this is where iMedX is quite unique: we offer solutions that are truly turnkey, and easy to use for all."

While Mr. Foley has described the two recent business intelligent acquisitions as 'the final piece of the puzzle' this doesn't mean that the company will no longer be active on the merger and acquisition front. "We'll continue to search for technology that can add value," he states. "Right now, we're particularly interested in natural language processing capabilities and Artificial Intelligence

technologies, while also looking at services companies. Acquisitions are relatively easy; a bigger challenge for us is to continue a high level of organic growth, both in our domestic market, the US, but also further afield, in the United Kingdom, Australia, New Zealand and the Middle East. We need to stay ahead of the curve and that's not an easy thing to do, particularly in our home market as the constantly changing regulatory landscape is challenging for all in the healthcare sector. We want to continue to deliver solutions that add true value to hospitals and that solve real issues for them."



iMedX, Inc.
3414 Peachtree Road Northeast, Suite 650
Atlanta, GA 30326
USA
Website: www.imedx.com

Becoming a full solutions provider

Based in the US with operations worldwide, Hardinge Inc. is the leading international provider of advanced metal-cutting tool solutions and accessories. Hardinge has a number of strong product brands in its portfolio and while these brands previously operated largely independently, the strategic focus now is on integrating products to promote innovation, and on becoming a total solution provider, as Marc Springstein, who heads Hardinge Germany, explains. He additionally highlights the new Bridgeport® V-1320 Vertical Machining Center, an addition to the Bridgeport V-series Vertical Milling center line. The new V1320 is the best overall working cube in its class, offering a high quality, rugged and powerful machine center developed for tough machining applications that is well suited for high speed and hard metal cutting conditions.

With a history dating back all the way to 1890, Hardinge today is a multi-national machine tool builder with global headquarters in Berwyn, Pennsylvania, USA. In modern history, the company has exceedingly globalised, both organically and through acquisitions. Its product brands now include Hardinge, Bridgeport, Kellenberger, Hauser, Jones & Shipman, Voumard, and Tschudin, among others. The company has locations in several countries including England, Germany, Switzerland, China, and Taiwan to name a few.

In recent years, Hardinge has strengthened its sales and service activities in Europe. The Krefeld site in Germany has a central role to play in this regard; it has been expanded into a European application center, particularly to strengthen activities in the field of turning and milling. “The Krefeld site previously served uniquely as the European distribution and service centre for super precision machines, which Hardinge produces in the United States,” Mr. Springstein explains. “While we continue to do that, we now also support integrated product lines and the turning

and milling machines that are manufactured by Hardinge in Taiwan. We’ve additionally expanded our spare parts service.”

Mr. Springstein was appointed director of Hardinge Germany in 2017. He says it makes sense for Hardinge to give Germany a central role in strengthening its position in Europe. Germany is a core market and the most important market in Europe for Hardinge. The wider company strategy is to improve product integration, he points out. Following the acquisition of Hardinge Inc. by Privet Fund Management LLC during the summer of 2018, a restructuring of the group has been implemented. “Over the years Hardinge had evolved to become a family of brands,” Mr. Springstein comments. “But these brands operated largely independently, until recently. We’ve had a strategic rethink under a new management team and realised we could do more to foster synergy between the brands in Hardinge. We now focus on more



integration of our product brands, in an organisation that is structured geographically, rather than vertically. This we believe will help us to better serve our customers and will also benefit product innovation.”

One of these new products is the V1320, a state of the art Advanced Performance CNC Machining Center at the top of the Hardinge Milling product line. The machining centre provides not only highly accurate and precision detailed parts in the aerospace and medical industries but also the robustness to handle the demanding day to day operations in the automotive industry. V1320 features include, among others, dual Y-axis ballscrews for improved surface quality and roundness accuracy, acceleration, reduced vibration, increased tool life, and comes equipped with the Heidenhain iTNC 620 HSCI control.

Hardinge’s new strategy, focusing on innovation, seems to be paying off already. In March 2019, the company announced it had experienced year over year growth in revenue across all regions, driven by customer adoption of its machine tool products and solutions, especially in Hardinge’s Asia region. It experienced strong sales growth in 2018 in key industries including aerospace,

automotive, medical, healthcare, and defence as well as higher demand in industries such as semiconductor and power-generation. In addition, the company saw strong demand for its innovative, advanced metal-cutting solutions in China, still the world leader in machine tool consumption. The company concedes that rising demand in the industry in general is also a factor in this. According to research firm Technavio, the global machine tool industry is expected to cross the 120 billion dollar mark by 2020, while the cutting tools market is expected to grow at a CAGR of around 9 percent by 2021.

Mr. Springstein points out that along with growing demand, the machining industry has seen a number of new players enter the market, including distributors who sell imported white label machines under their own brand, at a comparatively low price. While Hardinge is a technological leader in specific segments, notably turning, milling and grinding, the company will have to work hard to gain market share in the face of increasing competition, but Mr. Springstein is confident that they’re now well positioned to do just that. “We aim to grow our market share across various segments, with our Hardinge Super Precision machines and hard turning concepts, for example, but

also in the milling segment with the Bridgeport machining centers. And finally we have the Hardinge universal precision turning machines. In these areas, too, we want to clearly expand our presence in the market and significantly increase market share. By offering complete solutions and with a focus on innovation, we should be able to broaden our scope particularly in high-value markets such as aerospace and healthcare.”

Several Hardinge product brands will all exhibit at EMO Hannover, held in mid-September this year; EMO is the world’s premier trade fair for the metalworking industry, and a key showcase for innovations in production technology.



Hardinge GmbH
Europark Fichtenhain A 13c
47807 Krefeld
Germany
Website: www.hardinge.com

Next generation treatments for global markets

With a unique blend of large-scale manufacturing and R&D capabilities, a training institute, and a global network of partners and subsidiaries, Meril Life Sciences focuses on medical solutions in select areas, notably including vascular intervention devices and orthopaedic supplements. Their mission is to bring down the cost of medical devices, and put the latest technology in the hands of physicians worldwide. Mr. Sanjeev Bhatt (Vice President-Corporate Strategy, Meril Life Sciences), highlights their recently CE-approved MeRes100, a second generation bioresorbable scaffold used for the treatment of de-novo coronary artery lesions. Compared to first generation bioresorbable stents, MeRes100 has demonstrated better long-term results: after two years it has found zero scaffold thrombosis and very low Major Adverse Cardiac Event (MACE) rate.

Founded in 2006, Meril is an India-based, global medical device company that is dedicated to the innovation, design and development of novel, clinically relevant and state-of-the-art devices. Mr. Bhatt has been involved with the company from day one, and has closely worked with the family that owns and manages it. "The idea was to build a high-quality medical device company that wasn't necessarily India-centric," he explains. "We want to contribute to bringing down the cost of medical devices through a business model that combines manufacturing at scale with extensive R&D capabilities. The whole world needs affordable medical technology: Europe in particular is struggling with the rising cost of healthcare."

Meril manufactures medical solutions in the form of vascular intervention devices,

orthopaedic implants, endo-surgery and ENT products and in-vitro diagnostics. The company has its own research and development capabilities and can manufacture at scale at its own facilities in India, where it is headquartered. It has a manpower of more than 4000, and currently conducts business in more than 100 countries, through partners but also with 100% subsidiaries in India, USA, Germany, Brazil, Russia, South Africa, Bangladesh and Turkey. It has set up operations in China and Australia too. In addition to these operations, the company owns and operates Meril Academy, which prides itself as an innovative and ground-breaking training centre. It was built with the aim to disseminate cutting-edge scientific knowledge to physicians, surgeons, technicians and paramedics and to



Sanjeev Bhatt, Vice President-Corporate Strategy, Meril Life Sciences

bridge the gap between the rapid advancement in technology and its impact on surgeries.

Mr. Bhatt emphasises their focus on R&D: "We have always been dedicated towards the design and development of novel, clinically relevant, state-of-the-art and best-in-class devices to alleviate human suffering and improve quality of life. We aim to bring the next generation treatments to thousands of patients globally."

Among the latest results of their R&D efforts is the Myval Transcatheter Heart Valve (THV) System, for which it received approval for commercialisation in October 2018, from the Indian Central Drugs Standard Control Organization



Myval-THV

(CDSCO). It received the European CE Mark in April 2019. The device is the first India-developed and manufactured Transcatheter Aortic Heart Valve Replacement (TAVR) technology. This novel Myval technology is associated with zero new pacemaker implantation rates post procedure (which is an important benefit for the patient already treated for valve replacement). The Myval-THV technology has been developed after 6 years of extensive research and is backed by robust bench testing, pre-clinical and clinical data. A minimally invasive surgery, THV is an established treatment modality for patients who are at a high risk or unwilling to undergo open heart valve replacement surgery.

More recently, Meril received CE approval for MeRes100, a bioresorbable vascular scaffold system with low strut thickness of 100microns that fully resorbs naturally in the artery within a period of 2-3 years thus leaving the vessel in its true form and nature. In the field of percutaneous coronary intervention, the evolution of coronary metal stents has been well established for the past three decades,

but research on bioresorbable scaffolds has only gained momentum in the recent past. Although second-generation drug-eluting metal stents are the gold standard for the treatment of obstructive coronary artery disease, a few drawbacks exist, one of them being that metal doesn't resorb naturally which can in turn cause thrombosis. The development of bioresorbable scaffolds is an attempt to overcome the limitations of metal stents. Contributing to the advancement of this field, Meril recently published global study results: when used for the treatment of de-novo coronary artery lesions, MeRes100 demonstrated zero scaffold thrombosis and very low Major Adverse Cardiac Event (MACE) rate of 1.87% at three years as shown in MeRes-1 and 1.61% in MeRes-1 Extend at two years.

MeRes100, a next generation bioresorbable scaffold, has been developed with reduced strut thickness, an improved profile for better deliverability, excellent radiopacity for accuracy in placement and deployment, faster degradation and lower scaffold thrombosis. Two-year data from this

global study, which enrolled patients from Brazil, Europe and Asia, in fact demonstrated zero scaffold thrombosis, which hints at a major step forward in the field of bioresorbable scaffolds. "These long-term results show better performance for MeRes100 compared to data reported from first-in-man trials with older generation bioresorbable stents, which showed double digit MACE rates," Mr. Bhatt highlights.

"When considering that young people need to undergo this procedure too, you can imagine how big the benefits of the scaffold resorbing naturally," Mr. Bhatt points out. "Nobody wants a foreign body in their vessels long-term."

Meril will continue further developing the clinical evidence of this next generation technology against a drug-eluting stent in a randomised setting in due course. In the long-term they will also pursue FDA approval, according to Mr. Bhatt.



Meril Park



MeRes100

The power of video in retail

Using a unique blend of e-commerce, physical retail and home shopping TV, JML has become one of the most recognisable retail brands in the UK. It sells a great variety of innovative products from cat toys to Copper Stone frying pans. With distributors in 60 countries worldwide, the company has plans to further strengthen its international presence: Ken Daly, JML's Chief Executive, is confident that their business model (using video for product demonstrations) has global appeal. He also highlights their recent acquisition of a 50% stake in DeVancer Ltd, the company behind the iBeani branded range of electronic tablet holders.



Mr. Daly joined JML in 1994, shortly after it was founded. He was appointed Chief Executive in 2011. "We were originally just a small team working from the founder's basement," he recalls. "Now we're a global company."

The JML business started with live product demonstrations, at exhibitions for example. Over the years, physical retail and subsequently e-commerce channels have been added. The company now holds concession stands in Asda, Boots and Tesco, among others. "The British high street is struggling but we continue to do well in retail," Mr. Daly points out. This in his view is largely thanks to their business model: each JML concession stand shows

product demonstrations on video. "For every product we launch we produce video content," Daly adds. "Our customers like it and it's a no brainer for retailers as they don't need to allocate staff to promote the product: the video we provide does that." Product demonstration videos also are a key feature of JML's e-commerce channel, a business in which the company continues to invest. "With our background in home shopping TV and using video for in-store promotions, e-commerce has been a natural progression for us," says Daly.

The UK is JML's main market but Daly has ambitious plans for international expansion for their direct to consumer

business. "We used to have international subsidiaries but now focus on growing our global network of distributors; some of them are quite small but the growth potential for our business model is enormous. It's a model that is easy to export and replicate." He takes inspiration from American home shopping channels which have spread their wings across the globe, and which are successful in numerous countries even when they don't always make the effort to localise their product offering or video content. "Their programming has very high production value and that's what we aim for, too, but we have our own identity and approach," says Daly.

Interesting in that regard is that JML creates many of its own products: one of their main criteria for new products is that they need to show well on video and that there is a story to tell about them. Daly highlights their Copper Stone cookware range as one of their success stories. "A couple of years ago copper pans were a real trend, but while copper looks good in a kitchen, copper pans are not necessarily that practical as they're not non-stick. So we came up with the idea to combine copper with a non-stick, stone effect coating, and branded it Copper Stone. It continues to be one of our best sellers and we're very proud of that range. These are genuinely high quality pans and people love them."

Daly is 'always' on the lookout for new products to add to the JML portfolio but he has different plans for the iBeani brand that JML recently bought a 50% stake in. "iBeani is complementary to our products, but the brand won't be added to the JML portfolio; it will

continue to run as a separate business. We will do their warehousing and distribution for them, and will try to help them grow their business. As a relatively small brand they currently sell mostly in independent shops, and I think we might be able to help them break into the mainstream through our relationship with many of the UK's leading retailers."

The company that developed iBeani, DeVancer Ltd, is based in Nottinghamshire, and was founded in 2014 by Ashley Freer and Nigel Spencer. Their multi-award winning iBeani tablet bean bag stand provides universal use for iPhones, iPads, Kindles, ereaders and any other tablet computers. Sold through independent retailers, Amazon and garden centres, iBeani also manages corporate relationships that provide branded products for businesses. "We have

developed a superb relationship with the company's founders who have impressed us with their tenacity, energy and entrepreneurial acumen," says Daly. "We are working closely with them and are providing resources to turbo-charge the business into a substantial operation."

Daly is upbeat about the future of JML in general. "Retail will be the hardest area to grow; we continue to do well in it but it's a mature business. Our direct to



consumer business is growing exponentially, however, and that's where most of our investment is going. We're developing a new website and a new CRM system. I expect however that international sales will continue to be our biggest opportunity for the foreseeable future. To further drive that business we're planning to invest in high quality video content."



JML
610 Chiswick High Rd
London W4 5RU
United Kingdom
Website: www.jmldirect.com

Leading the way in targeted medical training

US-based CAE Healthcare offers cutting-edge learning tools to healthcare students and professionals, allowing them to develop practical experience through risk-free simulation training before treating real patients. To ensure the best preparation for safe and effective care on newborns, CAE Healthcare developed in Montreal an advanced simulator manikin which represents newborns in the first 28 days of life. Also, in Montreal, CAE Healthcare opened a designated CAE Centre of Excellence.

CAE was founded in 1947 in Canada and is now a global leader in training for the civil aviation, defence and security and healthcare markets. Backed by a record of more than 70 years of industry firsts, the company continues to help define global training standards with its innovative virtual-to-live training solutions to make flying safer, maintain defence force readiness and enhance patient safety. CAE has the broadest global presence in the industry, with over 10,000 employees, 160 sites and training locations in over 35 countries. Each year, they train more than 220,000 civil and defence crewmembers and thousands of healthcare professionals worldwide.

Headquartered in Sarasota, Florida, CAE Healthcare is one of the three core businesses of CAE, delivering educational tools that help healthcare professionals provide safe, high quality patient care. Its end-to-end spectrum of simulation solutions includes patient, interventional and imaging simulation, audio-visual solutions, custom industry solutions, and augmented reality learning applications. With a broad array of products, the company is able to offer targeted training to hospitals, medical schools, emergency response teams, military branches and nursing, respiratory and allied health programs. Today, approximately 13,500 CAE Healthcare simulators and audio-

visual solutions are in use worldwide by medical schools, nursing schools, hospitals, defence forces and other entities. Each CAE Healthcare product is developed in collaboration with clinicians and clinical educators whose aim is to ensure physiological accuracy and educational relevance.

CAE Healthcare and ESPA-Montreal announced in May 2019 that they have established a training partnership to improve clinical education and impact the quality and safety of patient care in Quebec, Canada. They will develop and validate new training technologies, tools, software and curriculum for healthcare professionals and students. The ESPA-Montreal simulation centre is now designated as a CAE Centre of Excellence, the third one in the world currently active and the second in Canada. In a press statement Rekha Ranganathan, President of CAE Healthcare says: "We are delighted to partner with ESPA-Montreal



to advance the education and training practices that will have a direct impact on healthcare delivery and patient outcomes in Quebec. CAE Centres of Excellence exemplify best practices in simulation and actively contribute to the body of knowledge around healthcare safety and education."

To ensure the best preparation for safe and effective care on newborns, CAE Healthcare developed in Montreal an advanced simulator manikin which represents a newborn in the first 28 days of life since newborns are at their greatest risk for survival during these first days. The quality of training that learners receive, can make all the difference in the world. Because neonates have a unique size and physiology and their treatment options and responses require special attention, the simulator allows healthcare providers to develop the knowledge and proficiency to do what is necessary to save a baby's life.

"During the first month, neonates are at their most vulnerable and susceptible to extreme health crises. From ventilation and intubation to neonatal abstinence syndrome (NAS) and post-resuscitation stabilization of a neonate, baby simulator CAE Luna satisfies requirements for Infant Nursing Skills, Paediatric Advanced Life Support (PALS), and the Neonatal Resuscitation Program (NRP)," says Dr.

Robert Amyot, strategic advisor for CAE Healthcare.

For doctors, treating babies is among the biggest challenges. Some Montreal medical students are getting high-tech training on how to best approach their littlest patients. The tiny baby simulator CAE Luna looks and cries like a newborn, allowing the students to get experience that's as close to reality as possible. "It's extremely important to use simulation to train health care providers," explains Dr. Robert Amyot. "You don't want your beginners to practice on real patients. You want them to practice on plastic and pixels."

Unlike previous simulators, the Luna uses softer material and is untethered, allowing medical students to practice treating babies suffering real life complications like jaundice and cardiac arrest. "You'll see distress, you'll hear the baby potentially cry," says Amyot. "You're going to see cyanosis and the vital signs are going to drop. The blood saturation and oxygen is going to drop as well and it's going to start having laboured breathing or stop breathing." The device was developed in Quebec, and CAE Healthcare's latest Centre of Excellence, ESPA-Montreal, is among the first places where students are using the simulator. CAE Healthcare reached several strategic milestones during 2018, strengthening its position as the innovation leader in

simulation-based healthcare education and training. Innovative product launches include, CAE Ares, an emergency care manikin; Anesthesia SimSTAT Appendectomy and Robotic Surgery modules, screen-based simulation approved by the American Board of Anesthesiology for maintenance of certification credits; two new CAE Blue Phantom skills trainers for ultrasound simulation training; and CAE Luna, the innovative infant simulator. CAE Healthcare broadened its market reach by expanding its sales force and entered into several new distributor agreements across the U.S. and internationally.



CAE Healthcare
6300 Edgelake Drive
Sarasota, FL 34240
USA

CAE HQ
8585, Ch. de la Côte-de-Liesse
St-Laurent (Québec)
Canada H4T 1G6

Website: www.caehealthcare.com

Creating innovative value through sustainable products

With the purpose of enhancing the quality of life in a material way, Eastman Chemical Company from Kingsport, Tennessee, US, works with customers to deliver innovative products and solutions while maintaining a commitment to safety and sustainability. In June 2019, the company announced that it has entered into a definitive agreement to acquire Industrias del Acetato de Celulosa S.A. (INACSA), a Spanish producer of cellulosic yarn. The INACSA yarn business and assets are expected to support continued growth of Naia™ cellulosic yarn for the apparel market and will become part of the global Fibers segment supply base. Jon Woods, General Manager, Textiles at Eastman says: “Sustainability is a major trend that is driving our industry today.”



Eastman has played a major role in many areas of history. Glimpses of its heritage can be found beginning in World War I. The war caused a scarcity in raw materials such as photographic paper, optical glass, gelatine and many chemicals, including methanol, acetic acid and acetone. At the close of the war in 1918, Eastman Kodak founder, George Eastman, was determined to have an independent supply of chemicals for his photographic processes. In his search for suitable quantities of methanol and acetone, Eastman turned his attention to the Southern United States and its forests, and to Kingsport, Tennessee. In 1920, Tennessee Eastman was founded with two major platforms - organic chemicals and acetyls. From the primary feedstock of pyro-ligneous acid, many of Eastman's basic chemical building blocks were manufactured, studied and perfected. Products such as calcium acetate, sodium acetate, acetic acid and acetic anhydride became the basis for other major company platforms.

“Since 2012, we have embarked on a journey to transform from a diversified chemical company to a specialty materials company and today we manufacture and market advanced materials and specialty additives,” Jon Woods explains. “We operate four business segments – Advanced Materials, Additives & Functional Products, Chemical Intermediates and Fibers.” Eastman employs approximately 14,500 employees around the world, serving customers in more than 100 countries. It has a broad global presence, with approximately 50 manufacturing locations in 14 countries worldwide, with the majority of its revenue coming from outside the U.S. “We also have research and development and technology centers



Naia™

located around the globe, which enables us to better serve our customers more effectively.”

Reflecting on Eastman's long history Jon Woods elaborates that throughout its history, Eastman team members have focused their sense of purpose, innovative spirit and drive for excellence to help make the world a better place. “Enhancing the quality of life in a material way is our purpose and is fundamental to who we are and what we have done for decades. For us, it means that our high-performance materials make life better in some way. As examples, some of our materials may make products safer, or more sustainable, they may give products a longer life by making them tougher or more durable, or they may help our customers conserve natural resources. We are a company who wants to be recognized around the world as being the company that collaborates and co-innovates with customers, tackles problems with creativity, and imagines new solutions by asking ‘what if.’ By aspiring to this vision, we can help realize a better tomorrow while creating value for all of our stakeholders. As we have been on our transformational journey, we have invested heavily in expanding our capabilities, offerings, and behaviours in order to accelerate innovation.”

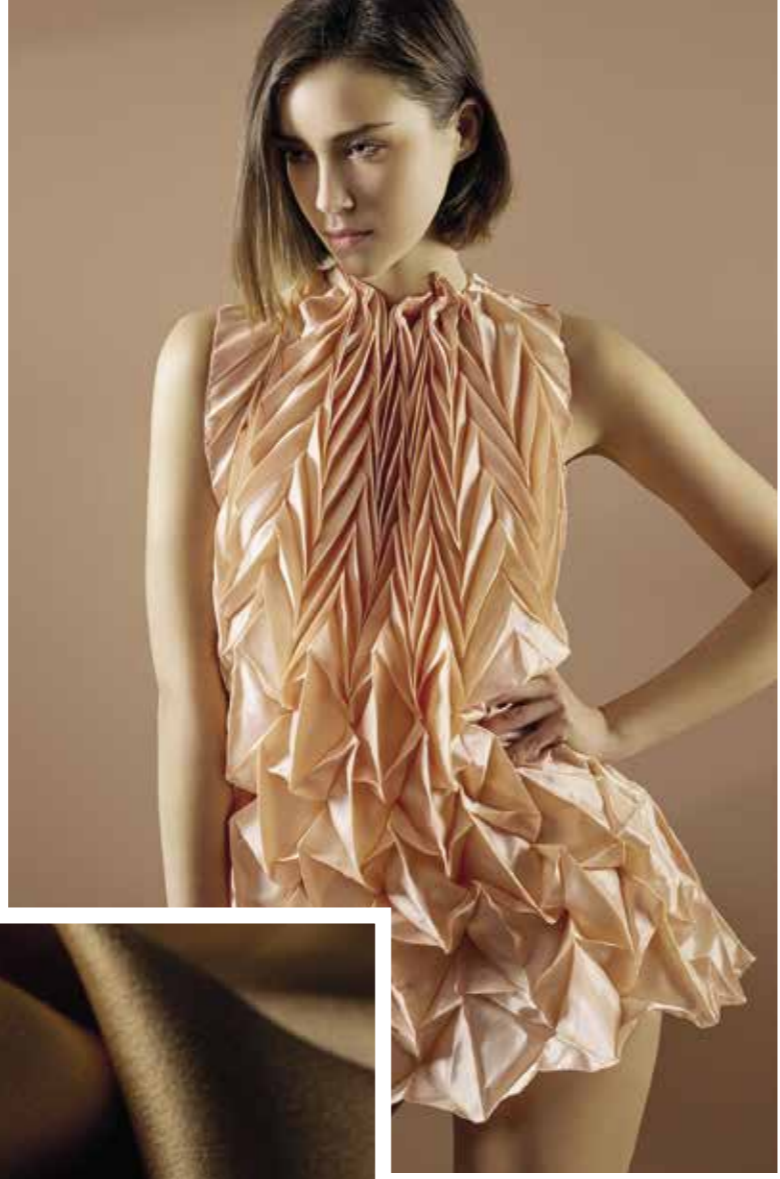
Today, Eastman holds an extensive portfolio of innovative products, with a robust pipeline of innovative solutions for the future. “As a result we are emerging as a leading Innovator in the materials space, creating superior value for our customers to help them win in their markets – and improving the quality of life for us all in a material way. Almost 100 years of success doesn't happen by accident, it's the result of knowledge, expertise, strong core values and old-fashioned hard work. We strive each day to outperform our competition, reward our stakeholders and simply do what's right. We're proud of our history, our employees, our innovative portfolio, and the path we've created for the future.”

With the June 2019 acquisition of INACSA, Eastman gains a well-respected yarn producer to support continued growth of Naia™ cellulosic

yarn. “INACSA is a well-respected and established producer in the textiles industry, with a strong reputation for high-quality cellulose acetate filament yarns among global mills and brands. We continue to experience strong growth for our Naia™ family of cellulosic yarns and this acquisition gives us additional growth capacity to support our market and application development growth initiatives,” Jon Woods adds. “Additionally, we expand our manufacturing base with an asset in Europe that is well-positioned to serve customers throughout Europe, Asia, and Africa, who will benefit from the combined experience and capabilities of Eastman and INACSA. We see exciting synergies from the integration into our Naia™ portfolio – both in terms of products and capabilities. This includes expanded capabilities and product offerings for coloured yarns, blended yarns, and yarns with a range of twist levels.”

Eastman launched Naia™, a versatile cellulosic yarn made from sustainably sourced wood pulp into the womenswear market in 2018. According to the company, fabrics made with Naia™ are comfortable and luxurious; the inherent qualities of the yarn provide breathability and moisture management properties to fabrics made from it. Garments made with Naia™ are also easy to care for, can be laundered at home, and have excellent wrinkle recovery and pilling resistance.

Naia™ combines sustainability and performance with a natural touch. The traditional comfort and luxury feel inherent to a cellulosic are all there, but it is the patented spinning process that delivers additional functions including



easy-care, stain resistance and cool-touch, inherent to the yarn and not delivered through a finish, meaning this versatile yarn has permanent performance. Made from wood pulp derived exclusively from sustainably managed and certified forests, the Naia™ cellulosic yarn takes on a new reflection of a long-standing fiber that enables luxurious, comfortable and easy-to-care-for fabrics and garments, not forgetting the performance.

Jon Woods stresses that more and more, consumers are making fashion choices that are influenced not only by the look, comfort, and care requirement of a garment, but also by its

environmental impact. He says: "We are engaged in discussion with several high-profile brands and it is clear, the textiles industry is becoming more and more focused on a future of sustainable fashion, and circular thinking is a part of that movement. We are committed to working with the textiles industry and collaborating on circular projects to make circular fashion a reality."

Eastman is committed to improving sustainability in the textiles industry by providing designers fiber options that enable fabrics that are sustainable, beautiful, and comfortable to wear. Additionally, Eastman has recently announced two exciting innovations

directed towards advancing the circular economy in end-use applications and markets, including textiles. Both of these technologies – advanced circular recycling technology and carbon renewal technology – are capable of addressing some of the most complex recycling challenges to provide end-of-life options and circular solutions for textiles.

EASTMAN

Eastman Chemical Company
200 South Wilcox Drive
Kingsport, Tennessee 37662
USA
Website: www.eastman.com

Today's multi-petabyte data center

Founded in 2011 by storage industry pioneer Moshe Yanai, Infinidat helps clients unlock the full potential of their data. The company has offices in 15 countries and is headquartered in Herzliya, Israel. In May 2019, their vision for the future of enterprise-class storage was announced, with a focus on enabling enterprise customers to achieve infrastructure agility and elasticity. Eran Brown, EMEA CTO, at Infinidat stresses that enterprises going through digital transformation need storage solutions that will seamlessly develop as business requirements change over time.



Moshe Yanai, CEO and Founder

Moshe Yanai has an impressive track record in the storage industry. Some 20 years ago while working at EMC, he developed the Symmetrix storage array and from there he moved on to start up the storage array company XIV, which was sold to IBM. He came out of retirement to start Infinidat as a multi-petabyte scale enterprise storage solutions provider, in order to bridge the gap in the transition from the terabyte age to the petabyte scale age. Infinidat today is known for extreme performance, seven-nines reliability and easy-to-grow scalability – all from low-cost hardware within a minimal data center footprint. The company's InfiniBox® platform is ideal for highly demanding storage applications, while its concept of storage-on-demand is the ultimate answer for the data growth demands of their customers.

Enterprises going through digital transformation need storage solutions that will seamlessly evolve as business requirements change over time. With Capacity On Demand (COD), customers leverage cloud storage economics within their own data center. It is the best of both worlds, providing high performance from day one, flexible usage with the ability to grow instantly, and incremental payment as storage requirements grow. Customers take delivery of an entire InfiniBox or InfiniGuard, only paying for the storage capacity they need initially.

When they need more capacity, they simply access more and pay for it. Eran comments: "Our customers are looking for ways to become more agile with an easy transition, so we help to gain that agility with a substantially smaller change to their business processes. What we enable our customers to do is to remove the procurement challenge from the way they deploy new business services because agility means that you can launch anything you need, today." Infinidat has taken a big step forward delivering on that vision with the Elastic Data Fabric that will build on all of the foundational technologies that power the Infinidat portfolio, aiming to deliver a fabric supporting seamless workload mobility between systems, data centers and cloud storage. The Elastic Data Fabric is powered by an integrated suite of products and capabilities built from the strong foundations of InfiniBox, InfiniGuard, and the hybrid cloud

capabilities of Neutrix Cloud® that allows you to put your data not inside but near the cloud, to give access to the same data from multiple cloud providers (AWS, Azure or GCP) enabling a multi-cloud strategy because you are not locked in. This is also without the need to move your data.

INFINIDAT

Infinidat
Akerstein Tower A
9 Hamenofim Street
Herzliya Pituach
46725 Israel
Website: www.infinidat.com



International payment processing specialist

The heidelpay Group is one of the fastest growing and most innovative fintech (financial technology) service providers in Germany. heidelpay is a leading full-service payment provider that offers a complete range of payment processing services to online and face-to-face merchants and covers the entire spectrum of electronic payment processing: from processing to acquiring, monitoring and risk management to receivables management. The fully scalable, modular solutions are used by 30,000 national and international customers. The various payment methods are provided for e-commerce, m-commerce and the stationary point of sale.



Mirko Hüllemann
CEO and founder
of heidelpay

Mirko Hüllemann founded heidelpay in 2003 and has led the company from its inception to its position as a powerful player in the European payment service provider market. Prior to heidelpay, Hüllemann held

various management positions and has experienced the digital payment industry from the very early days and from different perspectives. As Chief Executive Officer he is responsible for the strategic direction of the group and its members.

August 4th, 2019, heidelpay and its majority shareholder AnaCap Financial Partners – a leading asset manager in the European financial services sector, investing across the vertical through complementary private equity and credit strategies – reached an agreement on the terms of an investment from KKR, one of the leading New York based investment companies. KKR manages multiple alternative asset classes, including private equity, energy, infrastructure, real estate and credit, with strategic partners that manage hedge funds. KKR aims to generate attractive investment returns for its fund investors by following a patient and

disciplined investment approach, employing world-class people, and driving growth and value creation with KKR portfolio companies. KKR invests its own capital alongside the capital it manages for fund investors and provides financing solutions and investment opportunities through its capital markets business. KKR acquired a majority shareholding in the company with Mister Hüllemann and other key managers remaining as long-term shareholders.

Mirko Hüllemann said: “We are very excited to have attracted renowned global investor KKR to support us in the next stage of our growth journey. With its long-standing experience in financial services and technology, and its deep international network, we firmly believe that KKR will help us in approaching larger customers and shaping the payment landscape globally.”

A look back at the company’s history reveals what lies behind the success of the heidelpay group. The proven track record of highly synergistic acquisitions has strengthened heidelpay’s core capabilities across channels and geographies. In 2017, the private equity firm AnaCap invested in heidelpay not only adding capital but also significant investment in the



platform to execute new growth strategy including organic growth and further mergers and acquisitions, acquisition of mPay24 and Startec Payment. AnaCap’s investment also enabled heidelpay to accelerate the development of its omnichannel platform (a multichannel approach to sales that seeks to provide customers with a seamless shopping experience, whether they are shopping online from a desktop or mobile device, by telephone, or in an actual store), complete range of payment products, and proprietary technology. At the beginning of 2019 the heidelpay Group acquired the Universum Group

from Frankfurt as well as the point of sale specialist Alpha Cash, bringing the total number of acquisitions to seven in two years. With this investment, heidelpay positioned itself for the next growth phase and advancing the company’s internationalization. With the acquisition of Universum Group, heidelpay developed a best-in-class suite of owned payment methods, including a market-critical invoice and pay later product (FlexiPay), secured direct debit and online transfer as well as the omnichannel solution. Furthermore, its patents include the beam basket technology and digital display window.

Mister Hüllemann said: “We are proud to have brought KKR on board as one of the world’s leading investors. With Anacap we have achieved great success in an important phase and have increased tenfold in two years. Now we are taking the next step with KKR. I am convinced that we will be able to win even larger customers and further strengthen our position in the international payment landscape. I will continue to lead the heidelpay Group as CEO and partner and look forward to working with my team to drive the company forward with a new strong investor at our side. With its long-standing experience in financial





services and technology, and its deep international network, we believe that KKR will help us approach larger scale clients, to drive expansion in Europe and as a result shape the payment landscape globally.”

heidelpay can now play a key role in consolidating the fragmented European payments market. KKR is committed to supporting heidelpay in expanding its market share across the payments value chain, both organically and through strategic mergers and acquisitions, continuing the buy-and-build strategy initiated by AnaCap. KKR will also support the company’s ambitious technology platform and product innovation roadmap.

heidelpay, the international payment processing specialist uses its own specially developed solutions such as payment via invoice, instalment payment, direct debit, direct payment and prepayment – and those of leading providers of credit cards or wallet solutions. As a payment institute authorised by the German Financial Supervisory Authority (BaFin) and with over 16 years of experience in e-commerce and at the POS to its credit, the heidelpay Group allows companies of all sizes to effect worldwide payment transactions.

Heidelpay offers its clients selected credit and debit cards, like VISA,

MasterCard, Card Bleue, Diners Club and American Express as well as selected, local alternative payment methods, such as Giropay, iDeal or EPS. Besides wallet solutions like PayPal, heidelpay also offers mobile payment methods such as WeChat Pay, ApplePay, Masterpass and Alipay. The portfolio is completed with the owned payment methods pay later (invoice), pay later (instalment), secured direct debit and online transfer.

Clients of heidelpay Group can handle payments anywhere in the world safely and easily. As an all-in-one payment partner, heidelpay not only handles acquiring and processing, but also collecting. The funds from all individual transactions are transferred to the escrow accounts of the group and then paid out to the customers in batch payments. The resulting synergy effects are passed on to the customers, which allow them to benefit from significant cost reductions for payment management. heidelpay offers the heidelpay Intelligence Platform to its clients in order to allow them to keep an eye on their payments. The Reports and Analysis tool offers complete real time overviews of running and completed transactions.

The key markets for heidelpay are Germany, Austria and Switzerland. Furthermore, Belgium, the Netherlands

and Italy are interesting markets as well. heidelpay customers are operating both online and offline. Vertically, the heidelpay group is able to realize the entire value chain in e-commerce, from the origin of the debt claim to the scoring and debt collection. In addition, they offer factoring and thus provide direct liquidity to its customers.

Over the past years, heidelpay has established itself as one of the most innovative and fast-growing fintech companies in Germany. Under the expert leadership of CEO Mirko Hüllemann, the group has successfully transitioned from one of many regional payment service providers to become an internationally renowned omnichannel payment specialist.

heidelpay Group
 Vangerowstraße 18
 69115 Heidelberg, Germany
 Website: www.heidelpay.com

The era of the Extreme Data Economy is now

San Francisco, US-based Kinetica is the active analytics leader in the Extreme Data Economy. Its platform combines streaming and historical data with location intelligence and machine learning-powered analytics. Gary West, VP and GM EMEA at Kinetica and Daniel Raskin, Kinetica’s Chief Marketing Officer, fill us in about succeeding by leveraging the power of extreme data. “In today’s Extreme Data Economy, data has become the business, plain and simple.”

In 2009, the United States Army Intelligence and Security Command (INSCOM) at Fort Belvoir sought the capability to track national security threats in real-time. The solution needed to produce instant results and visualize insights across massive streaming datasets. Working on this, Kinetica founders Amit Vij and Nima Negahban found no existing systems capable of meeting the Army’s needs. So, they built a new database from the ground up, centered around massive parallelization combining the power of the GPU (graphics processing unit) and CPU (central processing unit) to explore and visualize data in space and time – an approach that has been patented. No longer is data simply a string of infinitesimal numbers tucked away into some ethereal database to be stored, filed, and then collect digital dust. According to Daniel, we have moved

from “point in time” analytics to continuous analytics that are constantly assessing customer activities. The next generation of analytics provides insights for business decisions in real-time, in the context of historical information, using machine-learning for predictive analysis. Driven by the Internet of Things, next-gen marketing analytics will have to incorporate deep location intelligence and connect human and machine capabilities.

The Kinetica Active Analytics Platform is cloud-ready, and dramatically simplifies the typical architecture for smart applications, with unmatched performance. It brings together all key elements of active analytics in a unified platform: historical and streaming data analytics, location intelligence, and machine learning-powered predictive analytics. “This is a very elegant platform that’s very developer-friendly and geared

towards building these smart analytical applications. Whether it is around telcos and network optimization or retail and real-time advertising or looking for cyber threats, it can actually do all of the data analysis and the human and machine learning all together in a single platform,” Daniel explains.

Organizations across automotive, energy, telecommunications, retail, and financial services leverage the platform’s GPU-accelerated computing power to build custom analytical applications for real-time insight. Daniel adds: “We create these smart analytical applications to help organizations differentiate their business.” In all this, Kinetica works with a rich partner ecosystem, which includes NVIDIA, Dell, HP, and IBM.

Gary ends by saying that business leaders need to priorities an innovation-focused ecosystem within their companies to properly face the Extreme Data Economy head-on. “Playing it safe with our thinking when it comes to data is no longer an option. Companies that aren’t actively at the point where they view data as a means to shape business strategies, to enable hyper growth, and drive smarter investments will end up buried in an ensuing avalanche of extreme data.”



Kinetica
 101 California St, Suite 4560
 San Francisco, CA 94111
 USA
 Website: www.kinetica.com

Founders Kinetica: Nima Negahban and Amit Vij

Adding value to projects

The leading European consulting, planning and project management enterprise Drees & Sommer has supported private and public clients and investors for almost 50 years in all aspects of real estate and infrastructure. Mr. Achim Nelke, Project Partner at Drees & Sommer, highlights the Buckower Fields project – a unique and sustainable housing project in Berlin.



Drees & Sommer's employees have gathered project experience in all of the world's important real estate markets. At 41 offices, its experts support companies from a range of industries in the realization of their projects. The company's close network of offices and experts with regional and project experience enables worldwide delivery of competent support.

The latest project on the impressive project list of Drees & Sommer is the project management of Buckower Fields in Berlin. In the district of Neukölln on the southern outskirts of Berlin the city is developing a neighbourhood with around 1000 new apartments. The 125,000 square meters of Buckower Fields are still nothing more than a large agricultural field. In two years, however, the construction of an innovative urban quarter with living space for at least 2,000 people will start here. "With the new district we want to relieve the tense Berlin housing market and put the focus on affordable living for broad sections of the population," Achim Nelke, Project Partner at Drees & Sommer, explains.

One of the most crucial developments in

this project will be the holistic integration of sustainability. "It is clear that the new district will be made especially sustainable. Contributing to this are energy-efficient buildings, a large landscaped park, low car traffic, a dense network of footpaths and bike paths, parking spaces for car sharing, e-bikes, bicycles and charging zones for electric cars. Building affordable houses with a high sustainable standard is in itself already quite a challenge, because what is good for the environment is not always the cheapest solution to begin with," says Achim. The whole project will be involved in a process that shall lead Berlin to climate neutrality by 2050, which is a huge challenge that Drees & Sommer will also be part of.

In the Buckower Fields different user groups should settle, so that a lively neighbourhood with a healthy mix and social community spirit can develop. In addition to classic apartments, commercial space, a day-care center, a youth center and assisted living will be created. "The project is currently going into the architectural development phase and the first residential units will be delivered approximately in 2023," Achim ends.

DREES & SOMMER

Drees & Sommer Amsterdam
Hoefbladstraat 20-22
2153 EX Nieuw-Vennep
The Netherlands
Phone +31 88 776-2670
Info.nl@dreso.com
Website: www.dreso.nl



Drees & Sommer's Innovation Hub in Stuttgart, Germany is one of the locations where the company's employees cooperate with startups, clients, business partners or in collaborative research projects. © Peter Neusser

The main focus of the innovative urban district Buckower Fields is on affordable residential accommodation for broad sections of the population. © rha reicher haase assoziierte gmbh

Drees & Sommer accompanies building construction and infrastructure projects of all types and sizes for nearly all branches from the initial idea to implementation and operation. The corporate's philosophy "the blue way" includes green building, green development and portfolio optimisation, from consulting via project management up to certification and international green building labels. Another service focus is on professional processing of complex large-scale projects. Drees & Sommer takes a multidisciplinary approach to initiating, planning and managing development and renewal processes for entire cities, districts, and individual buildings and properties.

Raising security awareness

Global security company Kaspersky recently reinforced its collaboration with INTERPOL in the fight against cybercrime around the world. This is the second agreement between the two parties following the first signed in 2014. Martijn van Lom, who heads Kaspersky in Northern Europe, says the collaboration underscores the trust international organisations place in their cyber threat hunting expertise. He also warns that the human factor still is the biggest threat to security. "Sometimes personnel may take cybersecurity requirements too lightly, leading to dramatic consequences for the organizations they work for. Awareness training is absolutely crucial, for everybody within an organisation, from the highest echelons of management all the way down."

Founded in 1997, Kaspersky has evolved into a global organisation with 400 million users and 270,000 corporate clients worldwide. The company is proud of its Russian origins, emphasises Mr. van Lom: "The expertise of engineers in Russia is second to none." He concedes that having a Russian identity isn't always helpful in the security arena, however. Dutch government last year followed in the USA's footsteps with its decision to stop using the security company's software. "It makes no sense to us," says Mr. van Lom. "Dutch government is not even a direct customer of ours. We do work directly with Belgian government and with German government organisations, and they clearly trust us, so I don't understand why the Dutch government does not. I'm in constant contact with them, but they haven't been transparent in explaining their actions." While that's still going on, Kaspersky recently extended its collaboration with INTERPOL. Kaspersky will share information about its cyber threat research and provide the necessary tools to assist INTERPOL with full digital forensics, aimed at strengthening efforts on the prevention of cyberattacks. Kaspersky regularly participates in joint operations and cyber threat investigations with the global IT security

community and law enforcement. The company offers an advanced free service for Law Enforcement Agencies to help fight cybercrime and sophisticated cyber threats.

The company also continues to educate consumers and the corporate world on the subject of security risks. "Security awareness training is one of our fastest growing businesses," says Mr. van Lom. "Thankfully a growing number of organisations realise that the human factor plays a major role in making businesses worldwide vulnerable, often

by accident rather than with malicious intent. This concerns all within an organisation, up to the very highest level." As an example he notes France's leading independent film group, Pathé, who recently lost €19.2 million in a scam where the Dutch office's financial management was asked to wire up to €19.2 million in four tranches to a Dubai bank account. The funds were supposedly to be used to acquire a company in Dubai. "Kaspersky offers a multitude of high quality security tools for all platforms, from mobile to network through to IoT devices, but we can't emphasise enough that people need to stay vigilant," Mr. van Lom warns.

kaspersky

Kaspersky
Website: www.kaspersky.com



In support of carers

Merck's Embracing Carers™ initiative recently launched 'Time Counts,' a social media-led video series asking friends and families of carers to collectively give 1 million minutes of their time to better support carers around the world. Merck launched Embracing Carers™ in 2017 as a global initiative in collaboration with leading carer organizations around the world with the aim to increase awareness and discussion about the often-overlooked needs of carers. "Carers are selfless; they take care of patients and far too often, they ignore their own needs for care. The carers of patients are an often-overlooked, yet critically an important link in the chain of support for patients. We believe that by reaching out to embrace the needs of their carers, we'll be providing better support for patients," says Scott Williams, Vice President, Head of Global Patient Advocacy and Strategic Partnerships, Merck.

Based in Germany with operations worldwide, Merck is a multi-billion dollar company with businesses across healthcare, life science and performance materials. The Embracing Carers™ initiative fits in with their mission and vision, according to Mr. Williams: "At Merck, the importance of family is firmly rooted within our long history. Our ongoing commitment to focusing on caring for the family and loved ones, is

part of our DNA. Merck's responsibility and commitment to helping patients live longer, more fulfilled lives stretch beyond medical innovation for patients. Our unwavering focus on providing the best possible care for patients means we are constantly seeking ways to improve their lives. To this end, the carers of patients are an often-overlooked, yet critically an important link in the chain of support for patients."



The recently launched 'Time Counts' campaign is a global call to action, dedicated to recognizing and supporting those who are caring for a loved one. It aims to raise 1 million minutes of time to provide carers with support in their role. By sharing carer stories via social media, 'Time Counts' hopes to encourage viewers to visit www.embracingcarers.com to give time to help with specific tasks, such as grocery shopping, cooking a meal or checking-in to connect and let them know support is available. The aim is that through 'Time Counts', the global community will give time back to carers so they can better address their own health and wellbeing.

"Every day, in every community around the world, people provide care for those who need it most, often putting their own lives on hold or altering their daily routines to ensure that an ill or disabled loved one or friend has the support they need," Mr. Williams adds. "Merck wants to change that. Whether it's letting someone know they are thinking about them and are willing to help, grabbing a much-needed cup of coffee for them, or picking up some groceries while they may already be out, their time can make a huge difference in the life of a carer. Whether it's five minutes or a full day, there's no limit to the amount of time someone can give, and no amount of time is considered too small to show someone cares."



Merck/Embracing Carers™
Website: www.embracingcarers.com

Leaders in drone security

At a campaign rally in Dresden in September 2013, a small quadcopter flew within feet of German Chancellor Angela Merkel, hovering briefly in front of them before crashing into the stage practically at Merkel's feet. While Merkel appeared to be amused by it, the incident brought home to Ingo Seebach, COO and co-founder of counter-drone technology company Dedrone, just how big the threat of a drone attack is, and how difficult it can be to defend against. He developed a counter-drone platform that combines hardware sensors and machine-learning software, providing early warning, classification of, and mitigation against all drone threats. The technology is deployed to protect public and private assets against drone threats around the world.



When Seebach and his colleague Joerg Lamprecht started Dedrone back in 2014, drones were seen as toys and drone threats were seen as novel. Five years later we have seen many instances of drone threats, even threatening national security: in December 2018, Great Britain sent troops to Gatwick, its second-biggest airport, after an unprecedented attempt to cripple Christmas travel with large drones, which forced all flights to be cancelled on Thursday. The vast majority of drone threats do not get as much publicity but occur frequently: several American correctional facilities have had to contend with drones attempting to deliver illegal contraband to inmates, for example.

What with the growing number of incidents, it's no surprise that a number of counter-drone technology companies have emerged. Dedrone, as one of the first movers in this still relatively new

market, is widely regarded as one of the leaders. The company prides itself on a fully-fledged, turnkey and easy to use solution. Friederike Nielsen, their VP marketing and communications, explains that their platform combines both hardware and software, and features RF sensors as well as cameras and radars that connect to a DroneTracker application that uses machine learning and acts as the "brain" of the system. It analyses data input and detects, classifies, and protects against drone threats, recognising the drone model and locating the pilot. When a drone is detected an alert is sent to the security team. The platform can also manage different mitigation tools like jammers, or passive countermeasures like blocking areas from view or locking down certain zones. Dedrone has had several high profile projects, including the annual Global Economic Forum in Davos in

2017/2018/2019, the Royal Family of Qatar during the Rio Olympics, and the final presidential debate of 2016 in Las Vegas. While preventable incursions, such as those at airports, correctional facilities and stadiums, continue increase and escalate in impact, Dedrone continues to grow and evolve both its technology and business model. Nielsen explains that while they currently sell their hardware outright and license their software, they're currently working on wider counter-drone networks, covering an entire city or smart city infrastructures, for example. This would allow some customers to deploy Dedrone technology without needing to invest in the hardware.

Based in San Francisco and Germany, Dedrone is backed by investors including Felicis Ventures, Menlo Ventures, and John Chambers, Chairman Emeritus of Cisco Systems and founder of Jc2 Ventures.



Innovation in lab water purification

Celebrating its 50th anniversary this year, Avidity Science is a worldwide leader in water purification systems and laboratory equipment for scientific research and healthcare facilities. The company recently launched the next generation of Clinical Laboratory Reagent Water (CLRW) systems, the Avidity Science Geno™ CL. Rob Alliot, U.K. Healthcare sales manager for Avidity Science, highlights the key features of the new system and comments: “We believe the Geno™ CL will set a new standard in CLRW given its unique features such as the twin stream technology and 10 inch operator interface screen. For 50 years Avidity Science has taken a customer-focused approach to innovation and the Geno™ CL is the latest example of how our solutions enable greater customer efficiencies while reducing operating costs.”

Avidity Science was established in 1969 by Bill Edstrom Sr, a mechanical engineer at an automotive company in Milwaukee and a chinchilla hobbyist. He came up with the concept of

providing automatic drinking valves for animals and invented an automated watering system that would enable the automated delivery of clean, fresh water to animals living in cages.

From humble beginnings in a small farmhouse, the company has expanded to become a leading innovator in the global science community through a unique combination of water purification and delivery, environmental monitoring, and service solutions. The company has manufacturing sites in the US and UK, which both have certification to ISO 9001:2015. In both countries, it has won a variety of awards and recognitions, including UK business awards, and Wisconsin Manufacturer of the Year.

Avidity Science's U.K. business started 20 years ago with a focus on laboratory water purification and was acquired in 2017 by Edstrom Industries to form Avidity Science and further grow the water purification business globally. The global potential for this type of technology is large and expanding: pure water plays a pivotal role in almost every life science experiment, diagnostic test or chemical reaction. Without pure water, very few experiments, tests or reactions would be possible. Thanks to its favourable

chemical and physical properties, water is often considered the ‘universal solvent’ as it dissolves more substances than any other liquid. Perhaps even more importantly, many biochemical reactions will only take place within aqueous solutions.

In this space, Avidity Science has built a leadership position through a unique combination of water purification and delivery, environmental monitoring, and service solutions. “Our laboratory water purification systems are intuitive to operate, efficient to run and dependable in the busy workplace,” Mr Alliot elaborates. “This is backed by technical excellence and a passion for high quality service support throughout the business.” The systems are sold mainly in the United Kingdom, USA, Europe, and the Middle East, serving key verticals in academic research, Healthcare, biotech, and pharma. Life Sciences, Biotech and healthcare combined currently account for the majority of Avidity Science's business, and indeed are the biggest growth drivers for this industry overall.

Avidity Sciences has some pretty formidable competitors: other key players operating in the global laboratory water purification systems market include Merck KGaA, Thermo Fisher Scientific, Sartorius, and Labconco, among others. But there's space for them to grow. As per the latest research study published by Up Market Research, “Global Laboratory Water Purification System Market” is estimated to grow at a healthy CAGR % in the coming years. With the introduction of several new technologies and products and the expansion of the market, the



applications of laboratory water purifier are already commonly used in diverse applications such as analytical chemistry, clinical analysis, environmental testing, food and beverages analysis, and forensic analysis.

Avidity Sciences contributes to the advancement of the technology and continues to innovate. Case in point is the latest addition to their lab systems portfolio, the Geno™ CL. This is a fully scalable one-box solution providing consistent and compliant supply of CLRW up to 200 L/hr (0.88 GPM) flowrate. Unique to the Geno™ CL, its twin stream cassette technology provides the contingency required in the modern laboratory within a single platform ensuring a continuous supply of pure water at all times. Designed to accommodate the changing needs of clinical laboratories, it is versatile, flexible and easy to operate with a 10-inch intuitive, icon based, touch screen. It minimises spatial requirements, whilst reducing the risk of water outage; all in a single cabinet. The Geno CL platform utilises a combination of proven water purification technologies, comprising

Reverse Osmosis (RO), Membrane Degassing, and Electrodeionisation (EDI) Cassettes, combined with in-built storage and distribution to deliver CLRW direct to the clinical analysers. All technologies are easily accessible to the operator enabling simple and timely cartridge replacement.

“The Geno™ CL range is designed specifically for supplying automated analysers in clinical laboratories with maximum uptime,” Mr Alliot elaborates. “As the system allows upscaling via twin streams, it has 50% contingency built in. There is an intuitive and informative user interface and a powerful secure

**AVIDITY
SCIENCE**

Avidity Science
Unit D4 Drakes Park
Long Crendon Industrial Estate
Long Crendon HP18 9BA
United Kingdom
Tel: +44 (0) 1844 201142
Website: www.avidityscience.com
Email: UK.Info@AvidityScience.com

web enabled controller for remote logging and access if required.”

Mr Alliot is confident in the growth potential for Avidity Science. Growth drivers in his view include OEM partnerships, new vertical markets and emerging geographical markets.



Celebrating a unique link

Originally the promoter of the Channel Tunnel, Groupe Eurotunnel has over the past ten years transformed to take on the challenges of new forms of mobility. To reflect its evolution, the company in 2017 changed its name to Getlink. The business still revolves around the Channel Tunnel, however, through which it has transported millions of passengers and huge volumes of freight over the past 25 years. To celebrate 25 years of service, Eurotunnel recently unveiled a monumental artwork on the French entrance to the Channel Tunnel and on the seafront at Sunny Sands Beach in Folkestone. The Franco-British artist YZ was chosen to create this fresco, which extends to over 50 metres wide and 17 metres high to celebrate Eurotunnel's 25th anniversary. The artwork is the face of a young girl looking through binoculars to the other side of the Channel. In Folkestone, her eyes look out across a beach frequented by families. John Keefe, Director of Public Affairs at Getlink, says the project was prompted by the idea of looking beyond where one is at the moment and looking to the future, to where one might be heading, with the artwork a fantastic metaphor for the Channel Tunnel.

The Channel Tunnel has a long history: you could argue that the project had been in the making for over two centuries as the idea for it existed as early as 19th century. It started to become a reality when British and French governments agreed to perform technical and geological surveys, which were carried out in 1964 and 1965.

Construction began in 1974, but in 1975 the British government cancelled the project. Nothing changed until in 1987, the Treaty of Canterbury was signed by British Prime Minister Margaret Thatcher and French President François Mitterrand to allow the project to proceed. France started drilling in June 1988 while the UK began in December of the same year. In late 1990, tunnels from both sides (French and British) touched. Queen Elizabeth II and the French president, François Mitterrand opened the bridge in a ceremony that was held on May 6, 1994.

Mr. Keefe joined Eurotunnel 26 years, before it even opened. He explains that in 25 years of operation, more than 430 million people and 86 million vehicles have travelled through the Channel Tunnel via Le Shuttle or Eurostar. The unique land link has become a vital link between the United Kingdom and continental Europe. "140 billion Euros worth of trade between the UK and continental Europe are transported through the Eurotunnel. That's 25% of everything the UK trades with the continent," he points out. "On the

tourist side, we transport both UK tourists going to the continent, and continental visitors going to the UK. The majority of the passenger flow is outbound from the UK."

Publicly listed Groupe Eurotunnel changed its name to Getlink in 2017. The company operates several subsidiaries, including a freight business, Europorte, and ElecLink, which is currently in the process of building and installing an electricity interconnector between the United Kingdom and France, through the Channel Tunnel. The interconnector (essentially two cables) will enable the electricity produced, on either side of the Channel, to circulate between the two countries as needed. This will increase the current transmission capacity between the United Kingdom and France by 50%. "It should help the UK to balance its low carbon production by bringing in nuclear power from French network, but it helps both sides," says Mr. Keefe. ElecLink comes into service in 2020. Beyond Europorte and ElecLink, Getlink also gives passage through the Channel Tunnel to railway trains from Eurostar, who run a high-speed trains between London and major capital cities in Northern Europe. Relatively new to the Getlink family, CIFFCO serves as a private European railway training centre. Each year, Getlink safely transports more than 20 million passengers, 1.6 million trucks, 2.6 million cars, almost 2 billion tonne-kilometres of freight and, soon, also 1 gigawatt of electricity.

All of these operations make clear just how important the Channel Tunnel is, particularly to the United Kingdom and



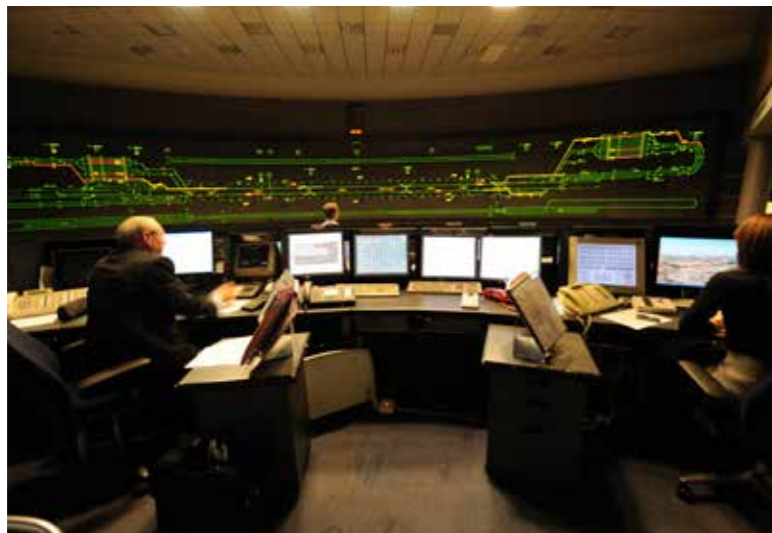
About Eurotunnel

Eurotunnel, a subsidiary of Getlink, manages the infrastructure of the Channel Tunnel and operates Truck and Passenger Shuttle services (cars and coaches) between Folkestone (UK) and Coquelles (France). In 25 years of operation, more than 430 million people and 86 million vehicles have travelled through the Channel Tunnel via Le Shuttle or Eurostar. This unique land link has become a vital link between the United Kingdom and continental Europe. It contributes to Europe's vitality by bringing people, businesses and cultures closer together.

France and the link between the two nations, but also to Europe in general. From a broader, more philosophical perspective, the Channel Tunnel allows us 'to look beyond our everyday lives' according to Mr. Keefe. This also is what the recently unveiled monumental artwork is all about. The Franco-British artist YZ was chosen to create a fresco, which extends to over 50 metres wide and 17 metres high on the French entrance to the Channel Tunnel and separate smaller one on the seafront at Sunny Sands Beach in Folkestone.

"YZ is a French street artist who famously was enlisted by Emmanuel Macron to create a new image of Marianne, the symbol of liberty and the de facto face of France, which appears on the country's postage stamps," Mr. Keefe explains. Marianne has been a symbol of the French republic since 1792. She has been immortalized numerous times throughout art history, notably in Eugène Delacroix's famous 1830 painting Liberty Leading the People. In more recent history, selecting a representation of Marianne for the national postage stamp has become a political tradition for incoming presidents, with this being the 30th depiction of Marianne to appear in the form.

YZ's modernist Marianne image clearly made an impression on Getlink. "We were looking for something dramatic and visible to represent the reaching of the 25th anniversary of the channel tunnel, something that reflected what the channel tunnel is all about," says Mr. Keefe. "It had to be someone who is entirely representative of our organisation, so someone who's Anglo-French, someone who could interpret our values and project them in a lasting way. YZ is the perfect person. She is Anglo-French, bi-lingual, lived in Folkestone, and has worked around the world. She took the commission from us with great interest and created a very



interesting concept after asking herself what the Channel Tunnel actually does, and what it means to people. She came to the conclusion that the tunnel gives us the opportunity to look out, to travel somewhere different, and to experience something different to our everyday life.”

YZ interpreted this in a unique way, he adds. “Her artwork on the French side is

the face of a young girl looking through binoculars to the other side of the Channel. In Folkestone, her eyes look out onto a beach frequented by families. This allegory of the binoculars shows the artist’s inspiration from her experiences in Folkestone, where she previously lived with her family, and the memory of the excitement of seeing the French coastline from the beach. She looked at it from a child’s perspective,

but I think most people on the coast have found themselves looking into the distance to see if they can spot France or the United Kingdom, on the other side, wondering what’s happening there, what it’s like, and how different it is. These are all thoughts that the Channel Tunnel plays into. We give people the opportunity to do something different, to step out of normality.”

“The binoculars also symbolise the twin railway tunnels,” Mr. Keefe clarifies. “The eyes that she painted on the wall in Folkestone are reciprocal of the painting on the façade of the tunnel. Together they form one piece of artwork. Both suggest looking upwards, beyond, towards new experiences, and represent exactly what the tunnel does and has done for the past 25 years.”

Inaugurated on 4 July 2019, this fresco will remain on the entrance of the Tunnel over the coming years to remind us of the importance of the link that unites the two countries.



Getlink
 3 Rue La Boetie
 Paris, 75008
 France
 Website: www.getlinkgroup.com

A leading player in the luxury industry

The Pininfarina Group has been an icon of the Italian design and has contributed to write the history of the global automotive industry. In May 2019, Pininfarina proudly presented together with AMAC Aerospace an innovative cabin concept for the Airbus corporate jets 350XWB. Paolo Pininfarina, Chairman of the Group states that this is a new way to live and enjoy the on-board experience leveraging on the 360° Pininfarina design expertise and on AMAC Aerospace’s unique completion capabilities.

With its headquarters in Cambiano, Torino, Italy, the Group employs nearly 700 people through its offices in Italy, Germany, China and the United States. The core business is design and engineering services where Pininfarina can leverage on its strong brand name and its outstanding and indisputable reputation as a car designer, to be extended to other sectors, together with its excellent technical knowhow in specific segments of the industrial engineering services value chain, such as production of bespoke cars and aerodynamics. The Pininfarina Group also represents one of the most prestigious brands in Architecture and Interiors with hundreds of projects and dozens of awards achieved.

Since the 80s, Pininfarina has established itself as the world’s leading designer in the Aviation sector, designing interiors for private jets and commercial aircrafts and developing, over the years, important partnerships with clients such as Agusta Westland, Alenia Aerospace Airbus, Bell Helicopters, Boeing, Leonardo Iacobucci and Piaggio Aero Industries. Through its Bespoke Division, Pininfarina offers the custom-design of residential architecture and interiors, one-off cars, yachts and aircrafts.

The Airbus Corporate Jets 350XWB is conceived around the traveller’s desires and able to fulfil all his needs: relaxing, working, dining, entertaining conversations and holding meetings. A

multifunctional space, tailored on the contemporary lifestyle, in which the private and working moments and spaces melt in a seamless flow. With the goal of creating a more appealing cabin space, AMAC Aerospace enlisted Pininfarina to inject some inspiration for flyers to come aboard of the Airbus corporate jet 350XWB. At EBACE 2019, the European Business Aviation Conference and Exhibition in Italy, the two companies presented a cabin concept for the Airbus Jetliner.

“Our 360° vision on the living spaces, thanks to our expertise in different sectors, from architecture to nautical and aviation, allowed us to conceive an innovative concept able to let the traveller enjoy the time on-board as he was in his living room or in his office. Moreover, the partnership with AMAC

Aerospace, one of the most skilled completion centres, gives the warranty to turn this innovative concept into reality,” says Paolo Pininfarina. Founding its roots in the automotive field, where the company boasts masterpieces created for prestigious brands such as Ferrari, Alfa Romeo, Maserati and BMW, the company extended its brand’s values and distinctive elements to become a 360° design house. Paolo Pininfarina ends: “Pininfarina has always had the passion for new technologies. Design is the instrument to humanize innovation.”



pininfarina

Pininfarina
 Via Nazionale, 30
 10020 Cambiano (TO)
 Italy
 Website: www.pininfarina.com
 Email address: bespoke@pininfarina.it



Fast food giant has ambitious sustainability plans

Fast food chain McDonald's wants to produce less plastic waste. In Germany, the company has committed to more sustainable packaging with the aim to save 1000 tons of plastic a year. This is about a third of the own plastic packaging that McDonald's Germany spends in its restaurants. Philipp Wachholz, Director Corporate Affairs, McDonald's Deutschland, highlights some of their recent and new initiatives which aim to engage both McDonald's customers and the company's partners in their supply chain.



Philipp Wachholz Director Corporate Affairs McDonald's Germany

It has been a rapid period of growth and success for McDonald's Germany since its first restaurant in Germany opened on December 4th 1971. Reaching the one billion mark in sales for the first time in 1989, McDonald's Germany opened its 1000th restaurant in 1999 and continued with further major developments; these include the induction of a new era of marketing with the 'Ich liebe es' ('I'm Lovin' it' in English) slogan in 2003 and a new line of high quality, fresh products such as salads and fruit bags in 2004.

Mr. Wachholz joined McDonald's Germany in mid-July 2012 as a Senior Department Head, and was promoted to Director Corporate Affairs shortly after. He has been the spokesman for McDonald's Germany since February 2013. In his position, he holds overall

responsibility for communications and reports directly to McDonald's Germany's Managing Director, Holger Beeck.

"One of the most fascinating aspects within McDonald's as a brand is, that it is in a constant change and never stops evolving," he comments. "There's always new challenges and opportunities, and all come with high expectations! McDonald's always wants to remain on a growth path to keep its position as market leader – for me and all of my colleagues of McDonald's Germany, this means that we remain restless, wanting to move forward and improve ourselves and McDonald's as a brand. That is why there is a range of exciting highlights within the last decade. A major move in recent years for the German market has been the transformation of our restaurants into

our new "Restaurant of the Future" concept. This transformation has laid the foundation for digital innovation. New digital ordering options with table service, a new kitchen system and digital menu boards are all part of the concept. By the end of 2019, almost every restaurant in Germany will be this new model. I have also seen changes in my own job as Director of Corporate Affairs: digitalisation also has an impact on the way we communicate. Communication with our guests has become faster and more direct and takes place across many different channels. Whether via social media, our ChatBot,



on the classic website or customer service: We are committed to a high degree of transparency and authenticity in all our communications and corporate policies."

There currently are almost 1,500 McDonald's restaurants in Germany; 92% of them are run by franchisees. While these restaurants all offer McDonald's classics such as the Big Mac, Mr. Wachholz emphasises that they constantly watch current food trends. "We recently launched our first vegan Burger, which not only appeals to veggie or vegan guests, but was also developed as a serious alternative for flexitarians."

McDonald's Germany is also getting serious about reducing the plastic and

packaging waste that its restaurants produce. The company recently published its ninth Sustainability Report, documenting the various sustainability activities of the company in three focus areas: nutrition, packaging and climate. In Germany, all restaurants will this year replace the plastic holders of balloons with a paper version. To reduce packaging waste, their four pack Chicken McNuggets will be served in a paper bag. This will happen this year, but the fast food giant has emphasised that it is just the start. The plan is to also replace packaging for their McFlurry, McSundae and Shakes with an 'almost without plastic', more sustainable alternative from 2020.

In addition to the reduction of plastics and packaging, recycling is another

central topic in the sustainability report. Together with its logistics partner HAVI, McDonald's has set up a recycling process for beverage cups that can be used to recycle paper cups from restaurants. This makes McDonald's the first company in Germany to enable recycling of disposable cups. Since April, the cups have been collected separately in its restaurants for recycling. The recycled material can be used for drywall, while a pilot project is currently analysing its potential use for hygiene products. McDonald's Germany estimates that every year, around 1,000 tonnes of paper cups can be recycled.

Combating climate change is another important goal of McDonald's global sustainability strategy. One of its objectives is to reduce CO2 emissions per





tonne of product in the supply chain by 31% by 2030. Most of the greenhouse gas emissions at McDonald's continue to be in agriculture and food processing. To promote more sustainable beef production, McDonald's Germany has been rewarding good agricultural practices with a higher purchase price per kilo slaughter weight through its BEST Beef bonus program, since 2010. In total, McDonald's paid a bonus to more than 3,600 farmers in 2018 for around 31,500 cows. In 2018, McDonald's revised this program to promote animal welfare and improved animal health with the lowest possible use of antibiotics, as well as to further reduce CO2 emissions from cattle rearing. The new BEST Beef 2.0 program started on 1 July 2019.

Mr. Wachholz points out that while these initiatives mostly apply to changes in McDonald's Germany's supply chain, the company also wants to actively engage guests. "We want to take them with us on this journey. One example was our "Better M Store": a live experiment in which we showed our guests for ten days what we were working on. This project was exciting and interesting on various levels. It gave us the opportunity to test our alternative packaging approaches in our restaurants, and to get feedback from our guests. Simultaneously we were able to demonstrate to our guests what we are currently working on and why

some solutions do not work as well as they may seem to at first sight. With some solutions, there are still operational barriers and even reservations on the part of our guests to overcome. Nevertheless, we are very proud that we can already begin with the first changes this year. Ultimately, we believe that with these changes, we can inspire our own guests but also consumers at large and other retailers to have a rethink."

He adds that in 2020, McDonald's Germany will continue to focus on its packaging roadmap, with next steps including the cup recycling system and the reduction of its CO2 emissions. To achieve this last goal, the company is working in close cooperation with its partners in the supply chain. These goals fit in with McDonald's ambitions on a global scale. By 2030, McDonald's is pledging to reduce greenhouse gas emissions from their restaurants and offices by 36 percent, and reduce their emissions intensity (per metric ton of food and packaging) across their supply chain by 31 percent. The company estimates these reductions will prevent 150 million metric tons of CO2 equivalents (CO2e) from being released into the atmosphere. Just to put this into perspective: that's the equivalent of removing 32 million cars from the road for one year. The company has said it is making this move in response to

customer demand and its desire to help reduce waste and have a positive community impact.

More information about McDonald's Germany's sustainability initiatives can be found in their Sustainability Report 2018, which was prepared according to the standards of the Global Reporting Initiative (GRI). The key figures in the report were audited by KPMG AG Wirtschaftsprüfungsgesellschaft. All details are available online at www.mcdonalds.de/nachhaltigkeit. In order to inform guests about the sustainability strategy of McDonald's Germany, the compact report is available in the restaurants. McDonald's also advertises the report on its social media channels and restaurants.



Non-invasive blood tests could become reality

Atonarp, a hi-tech molecular diagnostics company, recently raised \$33 million in an oversubscribed Series C funding round. Since early 2014, Atonarp has raised more than \$61 million in three rounds of equity financing in pursuit of its vision of ushering in the next generation of process monitoring and healthcare diagnostics through its innovative AI-based platforms of mass spectrometry and optical spectroscopy. Dave Anderson, Atonarp's COO and Head of Product Development, explains how they combine electronics and data processing algorithms to develop a non-invasive blood measurement device that promises to be truly disruptive.

Atonarp was co-founded by current CEO Prakash Murthy, an Indian entrepreneur residing in Tokyo. After nine years of work, his Tokyo-based company, Atonarp, has developed the world's most compact gas-sensing spectrometer to detect trace amounts of gas phase molecules in real time. Since molecular sensors were the heart of this venture, medical diagnostics was the next step. To address this market, Atonarp based their work on nonlinear optics as a means for non-invasive molecular sensing.

Their medical device is geared to deliver pain-free point-of-care blood testing with lab-quality accuracy but with real-time actionable data. These unparalleled advantages are also expected to bring about cost savings to patients and healthcare providers. The recently raised Series C funding will grow the company's balance sheet and support ongoing product prototyping and commercialisation into the healthcare market. This latest financing round has attracted five new investors including Japan Post Investment Corporation, SBI Investment Co., Ltd, and Northwestern Mutual Future Ventures as well as current investors, INCJ, Ltd, Innovative Venture Fund Investment Limited Partnership, and a major medical equipment manufacturing company. Atonarp aims to bring healthcare products to market within the next two

years. "The first step towards that will be the development of a commercially viable model," says Anderson. "That means we'll have to reduce the cost of the device." Atonarp does the core science in Japan, the optics hardware engineering and marketing from the US, and at its largest office is in Bangalore, it develops all of the software and algorithms.

Anderson emphasises that they employ a highly skilled team of engineers, which is self-evident as they seem to have found a way to detect and measure molecules in the patients' blood painlessly, in other words a minimally invasive way to test blood and currently working towards a non-invasive solution,

which is something scientists have been trying to achieve (and have failed at) for a long time. Molecules in the blood absorb and emit photons when exposed to laser radiation, a property that would be enough for them to decide the presence of a molecule in the blood. However, human diversity makes things difficult for scientists. To address this issue, Atonarp uses multi-photon imaging, a technique that attempts to get the picture of many molecules with one short pulse of light, notably by looking at a broad spectrum of emissions. Atonarp believes that this way it can conduct as many as 20-30 different blood tests simultaneously with this technology. "Combined with the data analytics model that we are building, the technology has the potential to be truly disruptive," says Anderson.



Iconic denim brand adds watches to portfolio

Wearing a pair of Wrangler® jeans, such as the Wrangler® Texas Stretch, is to wear a piece of American history. It's not a brand that gets by on historical romance, however – Wrangler® are still known primarily for their rugged durability and comfort. The company is now a part of Kontoor Brands, which was separated from VF Corporation in May 2019, and looks set to build on its legacy and diversify its product portfolio, also through licensing agreements. Steve Armus, vice president of licensing and business ventures for Kontoor Brands, highlights their recently formed partnership with America's G-Shock distributor Paradox Fine Watch Company, who will launch a new Wrangler watch collection featuring 65 different models and 20 different series for men and women.

The first Wrangler® jeans hit the market in 1947, designed in conjunction with Rodeo Ben, a celebrity tailor. Jim Shoulders, Bill Linderman, and Freckles Brown – all legendary rodeo cowboys – signed off on Wrangler's comfort, reliability, and quality after extensive testing. The following year Jim Shoulders became an official endorser of Wrangler® jeans, and remained an official endorser until he died in 2007, solidifying the brand's cult status in the rodeo world.

Wrangler® today is part of Kontoor Brands, a group of denim brands which also includes Lee® and Rock & Republic®. Wrangler® contributed 1.7 billion USD to the group's revenues in 2018; its jeans and apparel are sold worldwide through Wrangler.com and select retail locations.

Steve was appointed to lead the brand's licensing business in March 2019. With more than 20 years of experience in the retail and manufacturing industries, he most recently served as Senior Vice

President, Consumer Products, with Major League Baseball (MLB). In this role, he led operations and strategic direction for all aspects of the Advanced Media division and was responsible for driving royalty income for MLB's retail business. In his role at Kontoor Brands, Steve works closely with Kontoor's global teams to identify, develop and manage strategic licensing partnerships for Kontoor Brands' licensed categories globally, including strategic product category extensions and new products. Steve is also responsible for identifying new opportunities and business ventures, including licensing and partnerships in music, sports, and events, that drive brand equity and value for the brands and business.

"Wrangler has evolved in recent years by continuing to diversify its product portfolio," he comments. "Through recent partnerships such as Lil Nas X, new innovations in technology and

sustainability like our Indigood and Rooted Collections, and our focus on additional licensing partnerships like with Wrangler® Watches, we have continued to stay true to our Western heritage while becoming a brand even more consumers can enjoy."

Lil Nas X famously rapped "Cowboy hat from Gucci, Wrangler® on my booty," in his hit song Old Town Road. Inspired by those lyrics, Wrangler® teamed up with him and launched a limited release collection that offers fresh remixes of classic Wrangler® styles for "the kind of modern cowboy that can't be put in a box". The collection features denim button down shirts with "Old Town Road" written across the back, an assortment of graphic t-shirts and denim offerings for ladies and men. The women's cut-off short comes in a high-rise with a distressed frayed-trim, while men's denim is designed in a slim-fit with a #1 written on the side, a reminder that Lil Nas X's hit song held the number one spot on the American charts. The duo also remixed the brand's Cowboy Cut to fit for both women and men.

"Since 1947, we've offered jeans for a variety of wearers and wearing occasions," says Steve. "As an iconic brand in fashion, we have shown up in music, film and popular culture for decades. Our western heritage and offering a quality and versatile product for all wearers will always be the very heart of our brand."

He adds that the licensing business is an important growth area for Wrangler® in terms of driving incremental revenue and brand elevation. "We use Wrangler's creative vision as a guide to seamlessly create product extensions with world class partners in product categories and distribution channels that we might otherwise not service or reach."



Their recently announced partnership with Paradox Fine Watch Company fits in well with that strategy, in Steve's view. Paradox Fine Watch Company is an established leader in the watch market and has earned a reputation for the variety of famous brands it has carried over the years. Paradox is currently the watch distributor for Casio G-Shock and Garmin and the licensee for Alfred Sung and now Wrangler® in Canada and the U.S.

"Paradox is a best in class company that can deliver on Wrangler's goals of expanding our brand footprint," Steve states. "They have created a diverse line of Wrangler®-brand watches for men and women, which features over 65 different models. They have helped Wrangler® expand the brand by creating modern timepieces that are beautiful, rugged, and functional. The line was influenced by unique details that have been woven into Wrangler's jeans, jackets, and shirts, all of which are built

to stand the test of time. Paradox is an established leader with expertise in their product category from a quality, design, and marketing standpoint. Through the partnership with Paradox, we can expand the brand to new consumers in a new product."

Wrangler® Watches will be available through online and brick and mortar retailers, with limited styles available on Wrangler.com. The collection will be supported by an integrated marketing campaign.



Wrangler

Wrangler®/Kontoor Brands Inc.
400 N Elm St
Greensboro, NC 27401,
USA
Website: www.wrangler.com

The world's communication platform is buzzing

Rome-based Sparkle is a leading global service provider, first in Italy and among the top ten worldwide that offers a complete range of IP, Data, Cloud, Data Center, Mobile and Voice solutions to Internet Service Providers, OTTs, Media and Content Players, Application Service Providers, Fixed and Mobile operators. 2019, so far, has been a very exciting year with Sparkle creating a lot of buzz through exciting new company announcements. We interviewed Mario Di Mauro, Sparkle's Chief Executive Officer, on the company's latest achievements and its relaunch plan.

Sparkle is the global service provider and wholly owned subsidiary of TIM Group, established on January 1, 2003 with the objective of developing and consolidating TIM Group's global solutions business.

Mr. Di Mauro explains: "I am honoured to lead this company, with its history of experience and know-how in a multitude of markets". In fact, Sparkle owns and manages a global and technologically advanced proprietary network of about 530.000 km of fiber which include three major regional systems in Europe, the Mediterranean

and the Americas as well as an extensive ownership in major international submarine cables. With an international workforce distributed worldwide, Sparkle can count on a direct presence in 33 countries and commercial coverage on a global scale. Through a wide portfolio of services, a state-of-the-art network, advanced OSS, BSS and customer care capabilities, the company is able to fulfil its mission of providing customers with the best cost and top performance customized solutions in the international telecommunications market. Sparkle sets governance

conditions for the interaction of five communities (IP&Data, Cloud & Data Centre, Corporate, Mobile, and Voice). Sparkle has made several exciting announcements in 2019, starting in April with a long-term investment for the deployment of BlueMed, a submarine multi-fiber cable linking Palermo with Genoa. The new cable – planned to be operational by 2020 - will cross the Tyrrhenian Sea connecting Sparkle's Sicily Hub open data center in Palermo, which serves eighteen international cables, with Genoa's new open landing station, directly connected to Milan's rich digital ecosystem. BlueMed will also include multiple branches within the Tyrrhenian Sea and is set to support further extensions southbound of Sicily. With a capacity up to 240 Tbps and about 1,000 km long, BlueMed will provide advanced connectivity between Middle East, Africa, Asia and the

European mainland hubs with up to 50% latency reduction compared to existing terrestrial cables connecting Sicily with Milan.

In addition, Sparkle's new open landing station in Genoa is set to become the alternative priority access for other upcoming submarine cables looking for a diversified entry way to Europe, thus strengthening Italy's role as digital gateway between Africa, Middle East, Asia and Europe.

In June 2019, Sparkle announced the construction of Nibble, its new ultra-long-haul photonic backbone linking Sicily with the major Points of Presence (PoPs) and data centers in Europe. Based on Software-Defined technology, Nibble will provide industry-leading speeds, low-latency and high-performance, scalable and guaranteed connectivity services to meet carriers and enterprises' rapidly increasing network capacity requirements. Nibble's ultra-performant photonic layer will progressively integrate with Sparkle's existing Mediterranean and Balkans Network and with BlueMed, creating a seamless Pan Mediterranean Optical Transport Network.

Also in June 2019, was announced the opening of a new Point of Presence (PoP) in Aqaba, Jordan, in cooperation with Naitel, an integrated Jordan based operator with proprietary data centers and a nationwide network. Located by the Red Sea, Aqaba has the potential to become a gravitational hub in the Middle Eastern region, leveraging on Naitel's open data center and on Sparkle's international state-of-the-art network and Tier 1 global IP backbone Seabone, to deliver top performance connectivity and IP Transit to the Jordanian market as well as to neighbouring countries.



Mario Di Mauro,
CEO

Mr. Di Mauro says: "The international wholesale market has been affected by a big transformation in the last 10 years at least. On one side, the demand for Internet and data bandwidth has grown significantly, with volumes increasing by 40-60% on a yearly basis, requiring higher capacity to keep up pace with growth. Customers' demand is also evolving as they require more sophisticated and secure digital solutions. It is foreseeable that the demand will also strongly be enhanced by the 5G evolution and the increasing adoption of IoT solutions. On the other side, increasing competition by traditional wholesale operators as well as the entrance of new players like OTTs and Content Providers have put a strong pressure on prices and margins."

This transformation poses a big challenge to wholesale carriers like Sparkle who need to evolve rapidly their offer on top of pure connectivity and create value for customers. For this reason, Sparkle is investing significantly on its network to provide connectivity at industry-leading speeds at the lowest latency and cloud solutions with a state-of-the-art technology. "At the same time we are expanding our footprint into new fast growing markets (especially in the Middle East and Africa) and addressing

new customer segments such as OTTs, enterprises and content providers. Coping with this rapidly changing and highly competitive market requires execution, agility and innovation - the three pillars of our industrial plan - in order to speed up our projects and implement agile processes, improve time to market and provide our customers the best experience."



Sparkle
Via di Macchia Palocco 223
00125 Rome, Italy
Website: tisparkle.com
Twitter: @TISparkle

Beautiful NanoLumens LED display solutions

NanoLumens, headquartered in Atlanta, Georgia, US, creates LED displays impactful enough to deliver a truly immersive experience. They combine the world's most powerful LED signage platform with an unparalleled array of visual communication design and engineering services to produce the world's most engaging customer experiences. The company was recently contracted to design and deliver an ultra-wide 24-foot by 5-foot, 1.8mm pixel pitch LED video wall to Treasure Island in Las Vegas that is now the centerpiece of their all-new sports bar.

Since its founding in 2006, NanoLumens has designed products that bridge the market gap between consumer flat panel displays and commercial outdoor LED billboards in indoor spaces. A NanoLumens spokesperson says: "We built this reputation on being the only LED display manufacturer that thinks in terms of visualization in any size, shape, or curvature. The company's patented Nixel™ technology enables it to create LED visualization solutions that meet every customer's unique usage and space requirements. Our technical expertise conforms to each client's needs in ways that other manufacturers cannot match. Each solution we design is unique to the customer's requirement. In this sense,

we literally can live up to the imagination of our customers."

When engaging audiences with something they've never seen before, a flat-panel display won't be enough. Crisp and vibrant Nixel Series™ displays can be built to any size, shape, or curvature, giving the freedom to dream a brighter and bolder display solution than ever before. Cylinders, ribbons, tunnels, and curves both concave and convex are all possible with the Nixel Series™. These flexible, one-of-a-kind displays set the tone for clients in airports, retail, hospitality, stadiums, venues, higher education, casinos and gaming, and more. NanoLumens' industry-leading technology defies limitations, enabling

enterprises to engage its audience like never before. With pixel pitches as low as 1.56mm, Nixel Series™ displays provide space efficiency, increase advertising ROI, and minimize environmental impact. The Nixel Series™ is the highest resolution display for outdoors on the market and is easy to install and maintain, eliminating the need for rigorous maintenance.

NanoLumens' spokesperson emphasises that NanoLumens is the only company that can envision, design, engineer, and manufacture an LED display based visualization solution adapted to all sizes, and to all circumstances. Recognising trends in the market he says: "Society in general has become increasingly video and experience centric. Our customers across all vertical markets (retail, hospitality, transportation, higher education, entertainment) are turning to LED based visualization solutions to more effectively engage with their audiences wherever their audiences happen to be



— in the store, the classroom, on campus, in the hotel, at a theme park, or in an airport terminal."

As a desert oasis of bright lights, Las Vegas is known for big, bold attractions, from architecture to shows to the always-lit Las Vegas Strip. When Treasure Island casino decided a renovation would include a brand-new sports bar, The Golden Circle, the casino knew it couldn't be subtle if it wanted to stand out. To shake things up and create a space that's perfect for watching the city's new, hugely popular NHL team the Golden Knights, NanoLumens was contracted to design and deliver an ultra-wide 24-foot by 5-foot, 1.8mm pixel pitch LED video wall that is now the centerpiece of the all-new sports bar.

"The Treasure Island solution is representative of what NanoLumens does every day for its customers," NanoLumens spokesperson proudly states. "We create a solution that is unique to the space where the solution has to stand out and engage the customer's audience. In this case, Treasure Island needed a solution that would stand out in an environment that is flooded with other lesser quality LED and LCD displays. Our team was able to do just that with our ENGAGE Series solution."

Pixel pitches in the LED industry are shrinking rapidly. As costs drop and availability rises, narrow pitch displays are becoming the new standard. Distinct from the competition, the Engage Series™ stands alone as the industry's leader. Tailor-made to deliver audiences the most immersive display experience imaginable, Engage Series displays are featured centerpieces in high-traffic sportsbooks, corporate campuses, and flagship retail locations.

NanoLumens seamless construction and integration make these displays several steps ahead of the competition. The Company partners with clients to create uniquely compelling, interactive LED visualization solutions that take the guess work out of owning a display network. As the fastest growing visualization company in the US, its experiential LED displays exceed the imaginations of global clients in retail, transportation, corporate, gaming, higher education, sports and arenas, and houses of worship. Through world-class proprietary technology, NanoLumens displays are ultra-thin and lightweight, energy efficient and available in any size, shape or curvature. NanoLumens solutions are proudly designed and assembled in the United States of America and come backed by an industry-leading six-year warranty.

NanoLumens spokesperson concludes: "Our greatest challenge is keeping up with growing customer demand in each of the markets we serve around the world. NanoLumens technology is unique in its ability to custom fit solutions for any space, so as digital technology proliferates, a broader variety of customers are going to come calling to obtain creative LED visualization solutions that work within their specific spaces. This diversifying demand is challenging but it obviously presents exciting opportunities as well."



NanoLumens
5390 Triangle Parkway, Suite 300
Peachtree Corners, GA 30092
USA
Website: www.nanolumens.com

Global growth in software testing

Qualitest, the software testing specialist, has announced that it is moving its global headquarters to London. Based near Liverpool Street station, the office will serve as a central location with easy access to the company's additional offices in Romania, India, Israel and the US, Qualitest said. The announcement follows Bridgepoint Capital's estimated \$420m majority purchase of Qualitest in July. The investment is to be used to facilitate expansion and accelerate Qualitest's global acquisition strategy. "Moving the headquarters to London begins an exciting phase of development for our corporate and EMEA teams. Capitalising on the traction of our recent client wins, we expect to create hundreds of new jobs in the software testing market, and advance London as a central hub for quality engineering on the world's stage," comments Robert Burke, SVP, Group Marketing for Qualitest.

Qualitest was founded in 1997 by Eli Margolin and Ayal Zylberman, who wanted to build a testing company that would not concentrate on what all the testing companies were focusing on at the time - the Y2K bug. During the time between its emergence as a small startup working in a garage in the late 1990s and its sale in July to Bridgepoint for an estimated \$420 million,

ownership of Qualitest changed hands numerous times. Every one of those owners made a handsome profit on their investment: Marlin, which is based in California, acquired Qualitest in 2016 at a company valuation of just 300 million shekels (\$84.4 million at current exchange rates). Just three years later they sold a majority stake in the company to Bridgepoint.



Qualitest now is one of the world's largest independent quality assurance companies, and its revenue has soared. The Qualitest service delivery platform spans the US, the UK, Israel, Romania, India, Portugal and Mexico offering a wide range of AI-powered quality engineering and testing solutions, and deploying engagement models tailored to the precise testing needs of key industries and technology platforms. The company serves some of the most innovative mid to large sized brands in the technology, financial services, retail, telecom, healthcare, insurance, aerospace, media and utilities industries.

Brands are increasingly turning to Qualitest to help them navigate a changing software landscape where delivering a superior customer experience has become increasingly dependent on technology and the threat of cyber-attacks and data breaches are ever present. With agile, DevOps, AI, and test automation changing how software is developed and deployed, companies are seeking Qualitest's help to increase release cycle velocity and speed to market. The company's key expertise lies in mitigating the business risks associated with software releases, according to new owners Bridgepoint, who believe that their additional investment will enable Qualitest to grow market share by accelerating its global acquisition strategy, strengthening its product development and investing further in talent.

Qualitest CEO Norm Merritt said on the subject of the acquisition: "We're excited to have found a strong growth partner in Bridgepoint. They are thoughtful investors who seek to work with strong management teams and



have a history of investing in high growth potential markets. Their long-term capital commitment provides us with the platform to accelerate the next stage of our development and execute our global acquisition strategy so that we can continue delivering outstanding value to our customers."

The firm has revealed it is looking to more than double the amount of quality engineers in the UK over the next three years, having signed new contracts with leading companies across telecommunications, insurance, banking government and cybersecurity sectors in recent months. Simultaneously, it is

expanding its employee base at its delivery centre in Bangalore, India to meet client demand. In India, the company is hiring for more than 300 positions, ranging from entry level generalists to high level, experienced software testing and QA experts, across several disciplines of quality services. The expanded team will further Qualitest's ability to engineer precise solutions for their broad client base in sectors including banking and financial services, telecom, media & entertainment. Earlier this year, Qualitest also announced significant investments in the opening of a new office in Bucharest, Romania and office expansions in the United States,

and Israel. This global growth is in line with the increased demand by international businesses for rapid, high quality, smart solutions.

The new London headquarters will serve as a hub for EMEA expansion, with Qualitest expecting significant future growth in terms of clients, headcount and revenue. The new office has been designed to facilitate collaborative conversation between teams, with breakout spaces, an auditorium, spacious meeting rooms and an open plan kitchen.

Robert Burke is Qualitest's Vice President of Marketing. He has a





demonstrated history of working in the outsourcing/offshoring and professional services industries, and is professionally skilled in Search Engine Optimization (SEO), Operations Management, Customer Relationship Management (CRM), Media Relations, and Contact Centers.

“With a strong UK and European client base, Qualitest are looking to further expand their footprint on the region,” he comments. “London is one of the major business hubs in the world, a title that it’s held for many centuries, and I see Qualitest’s capabilities as one of London’s best kept secrets in the software development world – with the new move, I believe it won’t be a secret for long.”

Bridgepoint estimates that Qualitest operates in a market that is growing at 13% p.a. driven by the increasing needs of a \$32bn global outsourced market where software performance has become more business critical. Bridgepoint’s track record in the testing market includes its current investment in Element, the global leader in materials and product qualification testing in the aerospace, oil & gas, fire and transportation markets, as well as a prior investment in LGC, an international life sciences measurement and testing group.

Industry analysts including Technavio confirm Bridgepoint’s estimation. They expect the global pure play software testing services market to grow rapidly and will post a CAGR of more than 19% during period ending in 2021. The growing need for cost reduction and faster time-to-market will drive the growth prospects for the global pure play software testing services market for the next four years. Since various organizations are increasingly relying on independent testing vendors and avoiding heavy investments in testing tools, the market for pure play software testing services will experience growth during the forecasted period. As a result, it enables organizations to save on costly resources or manage with the

limited available resources, gain access to local talent and advanced technologies, and develop an economical cost structure. Furthermore, since companies reap benefits from pure play software testing services provider in terms of expenditure, time, and convenience, the market should experience a surge in its growth during the predicted period.

QUALITEST

Qualitest
1 Appold Street
Hackney, London EC2M 2QT
United Kingdom
Website: www.qualitestgroup.com

About Qualitest

Qualitest is the world’s largest independent managed services provider of quality assurance and testing solutions. As a strategic partner, Qualitest helps brands move beyond functional testing and quality assurance to adopt quality engineering practices, helping them introduce innovations such as automation, AI, and crowd-sourced UX testing. Qualitest leverages domain expertise across industries, including financial services, media and entertainment, retail, consumer goods, technology, gaming, telecom, among others. Qualitest’s global service delivery platform includes the United States, Israel, UK, India and Romania.

Reduced CO₂ cement goes commercial

Cement and concrete technology company Solidia Technologies® has teamed up with long-time partner LafargeHolcim in their first commercial venture, to supply EP Henry’s Wrightstown, New Jersey paver and block plant with a reduced CO₂ cement. The two companies have developed an innovative technology that will reduce the environmental footprint of pre-cast concrete and validate Solidia Cement™ at a commercial scale. “We help industry take a giant step that will leave a small footprint,” says Tom Schuler, President and CEO of Solidia Technologies.

Tom joined Solidia Technologies in 2011 to lead the cement and concrete technology company towards global commercialisation. He brought more than 25 years of experience advancing sustainable innovations after heading two global businesses at DuPont®, including DuPont Building Innovations. He explains that Solidia addresses a serious issue: global demand for concrete products is second only to the demand for water, and cement is the “glue” used to make concrete. For every ton of cement produced, a ton of CO₂ is released into the atmosphere, making cement production the second largest carbon emitter, responsible for 5-7% of total carbon emissions on the planet. Solidia’s technology starts with a sustainable cement and cures concrete with CO₂ instead of water, reducing the carbon footprint of concrete up to 70% compared to traditional concrete. Solidia provides two core technologies: a cement technology, which can be produced in traditional cement kilns and reduces greenhouse gas emissions during manufacture by 30-40%; and a concrete curing technology that permanently and safely consumes another 240 kg of CO₂, leaving 3-5% of the finished product weight as solid CO₂. The water used to form the concrete products can be recovered. “Ours is one of the only suites of technologies that addresses the

carbon challenge from both ends, both reducing CO₂ emissions in the production of Solidia Cement™ plus consuming CO₂ in the production of Solidia Concrete™,” Tom emphasises. “At full market conversion, Solidia can also save three trillion litres of fresh water, reduce energy consumption equal to ~260 million barrels of oil (or 67 million tonnes of coal), and eliminate 100 million tonnes of concrete landfill waste every year.” Solidia’s technologies were developed with the help of industry leaders like LafargeHolcim. In 2013, Solidia and LafargeHolcim launched a pilot program to develop low-carbon pre-cast concrete pavers with EP Henry, a national outdoor unit concrete products manufacturer. Based on Solidia Cement produced at the Lafarge Whitehall plant, a proprietary concrete mix design, and a specialised curing process utilizing CO₂, the two companies developed a concrete that is stronger, more durable, and higher performing than traditional versions.

Tom adds that meanwhile they are also currently in trials and Europe and Canada. “We hope to scale in those markets. We also have a waiting list of over 40 concrete manufacturers looking to advance trials, so we hope to raise additional funds to help us start trials with more manufacturers.” Cement manufacturers have to meet the industry’s CO₂ reduction goals articulated in the Cement Sustainability Initiative of the World Business Council for Sustainable Development. Cement manufacturers and large CO₂ emitters can benefit with Solidia’s technology as a means of mitigating carbon taxes.



Solidia Technologies®
Website: www.solidiatech.com

Much more than a printer

Xerox recently announced a new series of three affordable print devices designed to enhance small office mobility, without compromising image quality, security or the user experience. Comprised of the Xerox B210 printer, and B205 and B215 multifunction printers, the devices offer high-speed wireless connectivity, allowing users to print anywhere, at any time. Each device features WiFi Direct technology that enables wireless printing without a router and mobile print functionality with Apple AirPrint, Google Cloud Print, Mopria and Android support. Taking cues from the Xerox VersaLink® and AltaLink® series, the B215 also features a 3.5-inch touchscreen, giving users a smartphone-like experience. “Small businesses and those working from home have the same desires for ease of use, functionality, capacity and productivity as those in larger offices. This series of lightweight, compact printers provides those capabilities at the right price,” says Brad Allan, worldwide product marketing manager, Work Solutions Business Group, Xerox.

With a history dating back to 1906, Xerox is today seen as ‘an American icon’, and is a global leader in office equipment including scanners, printers, and multifunction systems. The company offers a comprehensive portfolio of award-winning, single-function and multifunction printers for teams consisting of a few individuals to large workgroups. “We have 31 solutions enabled multifunction/single-function printers, and we offer an additional 11 more standalone print-centric devices – all designed to increase productivity

while maintaining the highest security standards so our customer can ensure they get the right fit of technology for their business,” says Mr Allan.

Xerox entered the 3D market in 2018 and strengthened its offering in this space through the February 2019 acquisition of Vader Systems, a New York-based manufacturer of the liquid metal jet 3D printers. While it continues to develop a roadmap for 3D, the company continues to focus on innovation in existing product categories, packing new

products with a wealth of functionality and applications. This is evident, particularly in their flagship VersaLink and AltaLink product families. Both product lines, first released in 2017, target small and medium businesses who don’t want to sacrifice quality for affordability. This underscores Xerox’s mission: to make their innovations accessible to as broad a market as possible. This isn’t just related to price. Set-up is easy, and most users can begin using the technology with little or no training due to the intuitive controls. All VersaLink and AltaLink printers are mobile-ready and linked to the cloud for easy printing and sharing with Google Drive, DropBox or OneDrive.

With so much connectivity, security is a top priority too for Xerox. The printers include comprehensive security features, with the ability to block access from unauthorised devices, strong encryption, and device access auditing. “Users can download a variety of apps from the Xerox App Gallery to meet specific needs with an ever-growing list of new apps,”



Mr Allan adds. “From translating documents to different languages to converting scanned spreadsheets into an Excel file that are emailed back to you, we are making work faster to get done.”

While VersaLink and AltaLink target SMBs, Xerox covers all segments of print, all the way through to production print companies. For the latter, the company recently released the Xerox Baltoro™ HF Inkjet Press, a cut-sheet production press that enables clients to print high-volume, transactional work and high-quality direct mail and catalogues on a single press with superior image quality and productivity. The Baltoro HF is

Xerox’s first product using this platform. The Baltoro HF leverages the best of Xerox’s iGen® and High Fusion inkjet technologies. The result is a breakthrough platform that expands into the commercial print environment and supports high-quality production with economics similar to offset printing. Designing and manufacturing the Baltoro HF from the frame to the engine gives the company a more exceptional ability to advance the platform at a faster clip.

With innovation at its core, the Baltoro HF is the only press in the entry-level class to use automated intelligence to optimise and maintain colour and image

quality as well as self-correct in real-time. The press’s automated intelligence, along with its High Fusion ink and Xerox High Fusion W-Series Inkjet Heads, delivers true high definition 1200 x 1200 dpi image quality without the need to condition media with priming solutions or pre coats. Eliminating the priming solution reduces press size, power consumption and total cost of ownership while increasing productivity. The Baltoro HF also offers additional time-saving advantages. Its speed, paired with having the widest print area in its class, enables the press to increase client productivity by more than 115 per cent. On the front end, Xerox FreeFlow® Core automates the





time-consuming prepress work, while Xerox FreeFlow Print Server allows clients to add new jobs while the press is running.

The latest Xerox B-Series products, the Xerox B210 printer and Xerox B205/B215 multifunction printers target small businesses and home offices. “These products are incredibly reliable, offering hassle-free operation and incredible ease of use,” says Mr Allan. “All three products give customers a compact device that operates quietly without sacrificing performance. Full mobile support and native wireless connectivity mean customers can place their printer or MFP anywhere they like while simultaneously getting their work done while on the move. We are engineering access to colours that allow our industrial and

office clients to differentiate themselves in printed communications. Xerox recently launched a revolutionary embellishment accessory kit that unlocks new avenues for creative designs and eye-catching text. Similar to the industrial production press Iridesse which can produce materials with glimmering metallics, white and clear accents, we’ve made this capability available in office environments. With the Xerox® Adaptive CMYK Plus Technology, printers can now double the versatility of their hardware investment and augment their traditional CMYK offerings at a price point unmatched in the market.”

Xerox believes that small businesses and those working from home have the same desires for ease of use, functionality, capacity and productivity as those in larger offices. “There are several requirements to consider: How many copies, print, fax, scan and email jobs will you run each day? How many users will share the device? Will you need it to be colour capable? Wireless? Mobile and cloud-connected?” Mr Allan suggests.

Xerox aims to make printers that take all of these requirements into account. The brand new Xerox B210 printer, and B205 and B215 multifunction printers are all designed as compact, quiet and lightweight to fit perfectly in tight, busy

spaces. Their 3.5-inch capacitive touchscreen user interface (UI) provides smartphone-like functionality, while colour scanning helps create electronic files in a flash. Users can save files to their network or desktop, or open them in an application. Data are kept secure with SNMPv3 and IPv6 network security protocols and Secure Fax Receive, which holds a fax until the user logs in to retrieve it.

“Our MFPs are more than printers,” says Mr Allan. “They are workplace assistants that extend the capabilities of traditional copiers into systems within the business to help our customer discover new easy to work smarter and to create the most productive workplace. Especially where paper and digital documents converge, we will be innovating new technology to provide a seamless digital/paper experience.”



Xerox EMEA
Riverview House, Oxford Road
Uxbridge, Middlesex UB8 1HS
United Kingdom
Website: www.Xerox.com

About Xerox

Founded in 1906, Xerox today is a global company with operations in 160 countries around the globe. The company is ranked #318 in the Fortune 500 list and prides itself on innovation: it boasts over 18,000 current patents. The US-based company is focused on the intersection of digital and physical. It uses automation and next-generation personalisation to redefine productivity, drive growth and make the world more secure. The vision for Xerox innovative technologies and intelligent work solutions—Powered by Xerox®—is to help people communicate and work better every day.

A winning combination

Promedica International (PMI) and Dr. Agarwal’s Eye Hospitals (AEH) have formed a new partnership to conduct clinical trials in India, which they announced at the OCTANe Ophthalmology Technology Summit. Shannon Stoddard, President and CEO of PMI, emphasises that this alliance will enable them to collaboratively enrol and manage clinical studies in an expanded patient population, while conforming with global and FDA qualification standards and regulations. PMI, as a professional contract research organization based in the US, will lead in the design of studies that meet or exceed global Good Clinical Practice and medical quality standards. AEH, which is an international ophthalmic healthcare system, will provide clinical expertise and facility access in India.

PMI was started in 1985 by Ellen Palo and Judie Vivian. Their mission was to provide excellence in clinical trial management and associated regulatory services, to promote increased knowledge of disease or injury management, and to enhance the health care experiences and outcomes for patients and providers. In addition to clinical projects, originally PMI service offerings included medical marketing and CME meetings. Currently PMI employs 50+ employees and contractors, engaging in 12+ clinical projects per year for established

sponsors as well as start-up companies. The company is ISO 9001:2015 certified and services a range of medical specialties and therapeutic areas, building not only on its extensive experience in clinical study services, but also on its flexibility in accommodating a variety of project requirements and budgets. With a number of network partners such as Iris Pharma in the EU and now AEH in India, PMI continues to grow while still focusing on its original mission. “For PMI, the partnership with AEH will initially augment our resources for

enrolment and management of FDA clinical trials,” Ms. Stoddard comments. “At the same time, AEH gains the opportunity to significantly improve their quality and volume of clinical research with timely execution of studies. Over the longer term, we believe this collaboration will enable both parties to build a global organization for conducting ophthalmic studies, and foster the development of proprietary models for multiple disease states.”

AEH has a network of 75+ ophthalmology clinics in India and North Africa, which is a very helpful asset for studies in India and North Africa, Ms. Stoddard adds. “Both PMI and AEH have different strengths. PMI has an established system in place to organize and administrate clinical trials; AEH has a large clinical base which allows them to find specific disease states and enrol Phase I, II, III or Pivotal trials faster. In addition, AEH has the ability to run first in man studies.” She concludes that AEH and PMI are a winning combination because they share complementary goals and a vision of how to best deliver on the promise of clinical research. “This alliance will allow AEH to run all of their clinical trial work to FDA standards. PMI will be able to deliver clinical trial outcomes to their sponsors more efficiently, a win-win situation.”





Promedica International (PMI)
Website: www.promedica-intl.com

One touch for the optimal CT scan

YXLON International, a company of the Swiss Comet Group, designs and produces radioscopic and computed tomography (CT) inspection systems for a wide variety of applications in industries ranging from aviation & aerospace to automotive and electronics. Yxlon is based in Hamburg, Germany, with subsidiaries in Ohio, Japan and China. Their systems are in use worldwide for the inspection and analysis of tires, wheels, turbine blades, welds, additively manufactured products, electronic components like circuit boards and chips, and many more. Mr. Eike Fruehbrodt, VP Product and Project Management at Yxlon, highlights the latest technological developments around CT.

Founded in 1998 Yxlon is the direct successor to Philips Industrial X-Ray (Germany), Andrex (Denmark) and LumenX (USA/Ohio). Today, with seven locations and a tight net of representatives in more than 50 countries, Yxlon and its full range of services are globally close to customers' sites. Yxlon's x-ray and CT solutions fit in any manufacturing process to ensure highest quality and safety standards for industrial products. The Company's product portfolio ranges from standardized, modular x-ray and CT

systems to complex, fully-automated customized x-ray and CT solutions designed to fit the specific customers' requirements including micro-focus applications. In addition, its worldwide service offers installation, training, maintenance and remote-diagnostics up to 24h basis.

"Yxlon has been growing significantly to become one of the top providers of CT and x-ray inspection equipment for industrial applications. This has happened through own developments as well as strategic acquisitions. Today,

we are well known for our offerings for the electronics industry (SMT as well as Semicon), for aerospace and automotive casting, tire, wheel and laboratories. Our modern CT systems based on the software Geminy have set a benchmark in industry for both user friendliness and image quality," Mr. Fruehbrodt elaborates.

The Geminy software platform is at the heart of Yxlon's CT system family and combines control of all involved programs. In the front-end, Geminy is a clear and simple structured user interface divided across two monitors with graphic icons for touch operation that enables simple and intuitive user operation.

Yxlon's target is to help its customers to detect defects - preferably before they even happen or might have an effect on their production. The Company offers a complete solution to its customers, based on x-ray and CT systems, software



-especially state-of-the-art automatic defect recognition algorithms- and a lot of application knowledge. "Our competitive advantage is the ability to offer a complete solution, which might even include customizing and integration into our customers' production lines, as well as a state-of-the-art service to keep the equipment productive," Mr. Fruehbrodt explains. Zero defect is becoming more and more important. "Just think about sensors for autonomous driving or turbine blades for aeroplanes - you cannot accept a defect there," says Mr. Fruehbrodt. As a result, x-ray and CT inspection are expanding from the lab towards the production line. 100% inline inspection requires different strategies and good image quality at high speed, which is something that Yxlon is addressing with several of its products. "Industry is showing an increasing interest in the data gathered by our systems. They want to use these data to improve production and that is what a lot of our R&D activities focus on. Finally, we see a clear trend to more complex parts,

especially with hidden inner structures, and a miniaturization trend. This makes the use of other inspection technologies, like tactile or optical, in several cases difficult and at least a combination with x-ray or CT is required - indeed we are in a growing market here. We have addressed this by adding supplementary products, like the high-resolution fully automated 3D inspection systems YXLON FF65 CL and FF70 CL for semiconductor markets and are the first in industry to offer interconnection of our services to other inspection systems like for example optical systems (AOI) in SMT production."

In 2019, Yxlon presented a range of new and improved solutions, like the latest version of the high-resolution industrial CT system YXLON FF35 CT for small and medium-sized specimen. Also presented was the YXLON MU60 x-ray and CT inspection system designed for a wide range of applications, especially in the foundry sector of the automotive and aerospace industries.

"Yxlon has long experience with inline offerings for inspection of tire and wheel - and we are clear market leaders there. We are building our offering on a unique combination of our own fast inline CT combined with our own efficient software ProInsight Inline. This allows us to address applications where others fail," Mr. Fruehbrodt proudly states. CT Inline is the next step towards Industry 4.0. The use of complete data for each individual object in the production line forms the basis for reliable product quality and continuous process optimization. Yxlon offers its customers CT Inline solutions that meet their individual inspection requirements and keeps pace with every production cycle in today's foundries.

"Our market is growing significantly and inspection strategies require x-ray and CT for many applications. The main challenge for many players in this business is to manage this growth, to build up the necessary 24/7 service, to be close enough to customers, to work on a global base while having a wide product portfolio with many variants and low production numbers," says Mr. Fruehbrodt. "Yxlon is addressing all this by developing the unique platform Geminy to focus R&D efforts and make installation and service faster and easier."

YXLON

YXLON International
Essener Bogen 15
22419 Hamburg
Germany
Website: www.yxlon.com

The future is circular

Building on decades of experience and materials expertise, and on a commitment to sustainability that is second to none in its industry, UPM Raflatac is a global player in the competitive market for adhesive labels, also known as pressure sensitive label materials. The company recently announced that it is the first label material producer to bring a new wood-based polypropylene film material into the market. This UPM Raflatac Forest Film™ label material has been developed in collaboration with UPM Biofuels using UPM BioVerno™ naphtha, a 100 percent wood-based solution originating from sustainably managed forests. Tuomo Wall, Director Films EMEA, and Panu Routasalo, Vice President, UPM Biofuels, explain what makes the material unique. “Our Forest Film is a natural step on our journey towards labelling a smarter future beyond fossils.”

UPM Raflatac is a major player in the global market for adhesive labels. Headquartered in Finland, it employs around 3,000 people and made sales of EUR 1.5 billion (USD 1.9 billion) in 2018.

The company is widely regarded as a pioneer in sustainable labelling solutions. It partners with different players in the forest and packaging value chain and notably is one of the signatories of the Ellen MacArthur Foundation’s New Plastics Economy Global Commitment. The company develops sustainable alternatives for various end uses which help printers

and brand owners to reduce, recycle and renew. By reducing the use of raw materials, the company offers thinner and lighter films. The UPM Raflatac PP Lite range, for example, combines a lighter face material, a lower coat-weight adhesive, and a lighter backing. This makes them incredibly lightweight and optimises the use of raw materials and resources. Ultrathin UPM Raflatac Vanish™ PCR labels are also a good example, featuring recycled content face and liners. The company optimises the recycling process of plastic packages by ensuring that labels can be easily removed. UPM Raflatac wash-off

adhesives enable the recyclability of PET containers.

Turning waste into a resource overall is an important part of UPM Raflatac’s approach to sustainability. The RafCycle® by UPM Raflatac recycling programme supports this by offering a new life for label waste. In addition, UPM Raflatac helps to reduce the use of fossil raw materials by offering renewable options, such as certified materials and other bio-based alternatives. A good example is the forest positive UPM Raflatac RAFNXT+ product range which is 20% more carbon positive compared to standard labels. “We are inspired by the limitless opportunities of the bioeconomy and want to deliver renewable and responsible solutions, and innovate for a future beyond fossils,” comment Tuomo Wall and Panu Routasalo.

They believe that their recently launched UPM Raflatac Forest Film™ product is a great example of the UPM Beyond Fossil brand promise, and proof



of their strategy in action. As a raw material, Forest Film uses UPM BioVerno naphtha™, which is a drop-in solution. This means it works identically to fossil-based naphtha (a flammable liquid hydrocarbon mixture) in all chemical industry solutions.

There are no restrictions to the ratio in use with UPM BioVerno naphtha and it can be used as a raw material for a variety of applications, from cover packaging to consumer goods through to fibres and textiles, and much more.

UPM BioVerno naphtha is also used as a raw material for other polymer applications, in the packaging of dairy products for example. Dairy is typically packaged in paperboard beverage cartons that have a plastic barrier coating, which holds the liquid and prevents migration of air and flavours through the paperboard. UPM BioVerno, as a 100% wood-based carton coating material, can serve as a more sustainable alternative barrier to fossil-based plastic without compromising on functionality. To develop specific applications for BioVerno, UPM is open to partnerships with other world class players in the packaging ecosystem. UPM Biofuels notably joined forces with Dow – a world-leading developer of innovative

packaging materials, and Elopak – an international supplier of paper packaging solutions. Together they co-created on a mass balance basis a fully renewable beverage carton that is recyclable and responsibly sourced. “Developing the technology to produce renewable naphtha from crude tall oil that is a residue from pulping process is the unique innovation of UPM, however,” Mr. Routasalo points out. “This has allowed us to develop UPM Raflatac Forest Film™ label material, which we consider a historical step. Now we have succeeded in bringing this sustainable innovation further in the value chain, all the way down to consumer packaging solutions.”

“By replacing fossil-based raw materials with renewable ones we can ensure a truly sustainable packaging solution,” Mr. Wall adds. “It is the first wood-based, truly sustainable and environmentally friendly packaging solution to replace fossil hydrocarbons with renewable ones in the markets. It is a drop-in solution: it can smoothly replace traditional fossil-based options as it is identical in quality and performance to conventional fossil-based films. Each ton of UPM BioVerno naphtha replaces a ton of fossil hydrocarbons in the production of polypropylene.”

The recommended disposal route for the wood-based film is via plastics recycling systems. As with all UPM Raflatac films, the solution is designed for recycling and is not biodegradable. UPM Raflatac Forest Film will be globally available and has already created a lot of interest in the market. Several projects are already being executed.



UPM Raflatac
P.O. Box 380, Alvar Aallon katu 1
FI-00101 Helsinki
Finland
Website: www.upmraflatac.com

A commitment to sound forest management

The global pulp and paper group, Sappi, recently announced that it has become an International Stakeholder member of the Programme for the Endorsement of Forest Certification™ (PEFC™). This membership aligns with their focus on sustainable forest management and responsible procurement throughout our supply and value chains, as Sarah Price, Sustainability Manager for Sappi in Europe, explains: “Credible, internationally recognised, robust forest certification systems like PEFC are fundamental to Sappi’s commitment to sustainability. These systems give assurance to our value chain of the origin of our wood fibre and responsible forest management practices.” Graeme Wild, Sappi’s Group Head of Sustainability and Investor Relations, added “Given that stakeholder engagement underpins our approach to doing business at Sappi, we welcome the opportunity to become a PEFC International Stakeholder member.

Sappi was originally incorporated as South African Pulp and Paper Industries Limited, in 1936. Still headquartered in South Africa, the company has over the years evolved to become a global force in the pulp and paper industry. It has over 12,000 employees, manufacturing operations on three continents, and customers in over 150 countries worldwide.

Sarah was appointed Sustainability Manager for Sappi’s European operations in 2018. Her position was newly created, coinciding with a new structure: sustainability at Sappi is now grouped with innovation, underscoring the company’s efforts to sustainable product

development, for paper-based packaging solutions serving as an alternative to plastic, for example. This in turn is in line with Sappi’s sustainability strategy, which, building on their 2020Vision, aims to create real value by contributing to business growth within the context of the constantly changing external environment in which it operates.

Sarah explains that sustainability has been high on the agenda for Sappi for many years and across many areas, from safety in the workplace through to CO2 reduction. “We actively strive to contribute towards the UN Sustainable Development Goals and in

particular SDG 15 – Life on Land; given our priorities to promote sustainable forest management and support smallholder forestry around the world,” she comments.

Sappi’s support for smallholders has a long history in their home market, South Africa, she points out. “We’ve been working with the smallest landowners in South Africa since the 1980s, helping them to plant trees and in return we buy their products. And over the past years we have been collaborating with national stakeholders to develop a national forest certification system. These efforts have now delivered the South African Forest Assurance Scheme (SAFAS)—which has recently been assessed and endorsed by PEFC.”

Certification can allow smallholders and communities better opportunities to access markets in both developing and developed countries. Many retailers and consumers prefer products that are guaranteed to come from well managed forests because they believe that conserving forest resources is important. In Western Europe, for example, most retailers will only buy certified products. Obtaining certification



Sappi South Africa’s Khulisa Project helps small farmers overcome entry barriers associated with tree farming and is a great example of Sappi’s connection to land and communities.

can be complicated for smallholders, however. If not designed well, certification can add complex administration and costs without delivering added value or impact for smallholders. This can create an additional barrier for smallholders to access the market.

The PEFC was originally created in Europe to make sustainability certification more accessible for smallholders. Today it is a leading global alliance of national forest certification systems. As an international non-profit, non-governmental organization, it promotes sustainable forest management through independent third-party certification, providing forest owners, from the large to the small, with a tool to demonstrate their responsible practices, while empowering companies to buy sustainably. In turn, the PEFC label enables consumers to recognise products originating from a PEFC-certified forest – a forest managed in line with the strictest environmental, social and economic requirements. Sappi and PEFC are a good fit, says Sarah: “Together we want to make the certification process more accessible for smallholders, in South Africa and beyond.”

Companies, like Sappi, can play an important role in promoting sustainable forest management and encouraging the uptake of forest certification globally. Creating market demand through our preference for certified material creates a

powerful influence. Over the past few years Sappi Europe has managed to procure over 75% of the wood fibre they use from certified forests. Sarah explains that if certified product is not available the minimum requirement for all wood products Sappi purchases is proof it is from legal and non-controversial source in accordance with FSC Controlled Wood Standard, as well as PEFC (and SFI in North America) risk-based due diligence system(s) (DDS). These systems offer assurances of legality, traceability and the avoidance of controversial sources while the chain of custody standards help trace fibre from certified sources through the supply chain.

Where data is not examined by third parties, the company uses its own resources. For example, a portion of their sustainability protocols and data are audited internally every year. “We have a pretty complex global supply chain with numerous stakeholders, so it’s a big job to make sure they’re all on the same page,” says Sarah. “In wood procurement we’ve a long history and well-established forest certification systems to help ensure that our partners uphold the same sustainability principles as we do, but for the other raw materials we use beyond forest products, we’re still working on it. We recently released a new supplier code of conduct, which also touches on human rights, environment and health and safety, for example. It’s early days but working

together with our other suppliers with this new code of conduct has a lot of potential to drive change.”

Overall Sappi seems to take a holistic view of issues, from responsible sourcing to understanding the end of life of its products. “Sustainability in our industry is often a balancing act,” Sarah confirms. “Water consumption, for example, is a delicate issue. You need a lot of water to





produce pulp and paper, but reducing water consumption doesn't automatically make our paper mills more sustainable. While we concede that reducing the fresh water consumption in paper production is economically and environmentally justifiable, particularly in regions where water is scarce, we also know that reducing water consumption at the paper mill can have a significant negative impact on other environmental factors.-." Sarah adds that in Europe, all factories are close to a water source and are in regions where water scarcity are not in issue. "We take water out of the river, use it make paper, and afterwards treat the water; when we put it back into the river it often is cleaner than it was when we took it out." Regardless, with

changing climate we can't be complicit and need to always consider and evaluate our role in water stewardship. Looking to the future, Sarah expresses the hope that Sappi and the industry at large will play a more positive role in sustainability. "There's a lot of focus on minimising footprint, which is essential but also kind of negative. I believe there's also a lot of good we can do and we need to focus on that too."

She refers to a recently published study, which finds that planting trees on 0.9 billion hectares of land could trap about two-thirds the amount of carbon released by human activities since the start of the Industrial Revolution. The planet has that much tree-friendly land available for use. So without knocking down cities or taking over farms or natural grasslands, reforested pieces could add up to new tree cover totalling just about the area of the United States, researchers report in the July 5 Science. The new calculation boosts tree planting to a top priority for gaining some time to fight climate change, says co-author Tom Crowther, an ecologist at ETH Zurich. The study used satellite images to see how densely trees grow naturally in various ecosystems. Extrapolating from those images showed how much forest similar land could support. Plant a mix of native species, he urges. That will help preserve the birds, insects and other local creatures. The analysis revealed space to nourish enough trees to capture some 205

metric gigatons of carbon in about a century. That's close to 10 times the savings expected from managing refrigerants, the top item on a list of climate-fighting strategies from the nonprofit Project Drawdown, a worldwide network of scientists, advocates and others proposing solutions to global warming. The benefit of tree planting will shrivel if people wait, the researchers warn. Earth's climate could change enough by 2050 to shrink the places trees can grow by some 223 million hectares if the world keeps emitting greenhouse gases as it does now, the analysis suggests.

"This study and many others like it confirm what we already know well in the forest industry. Trees and forests are powerful resources and offer solutions for so many sustainability challenges we current face. "But this study reinforces that there's a clear opportunity for us to think bigger and rise up to the challenge."

sappi

Sappi Europe
Terhulpensesteenweg 166
1170 Watermaal-Bosvoorde
Belgium
Website: www.sappi.com

Sustainability in textile production

With 12 million tonnes of textile waste lining landfills each year in the U.S. alone — according to that country's Environmental Protection Agency —, the pervasive effects of this type of waste directly impacts global pollution, and ultimately on climate change. That's why PurFi, a leading provider of high-end products from rejuvenated textile waste, is opening the door for the advanced manufacturing of textile products using rejuvenated source materials. Alongside Belgium-based Concordia Textiles, the company has announced a joint venture that will seek to bring to market quality circular fibers.



Founded in 2018, PurFi is a leading entrant to the rejuvenated textile waste market. An owner of 14 patents and patents pending related to the process of rejuvenating industrial waste, the company's technology has been commercialized by some of the leading names across several industries, including Ford, Mazda, Staples, Walmart, M&S, Sainsbury, Rockline Industries, U-Haul, and Nike. Alongside Belgium-based manufacturing partner Concordia Textiles, the company has launched a new joint venture called PurFi Manufacturing Belgium. From its Waregem, Belgium headquarters, the new company integrates ground-breaking sustainable textile technologies

and enduring manufacturing practices, as it looks to become the first global company offering circular fiber products. "Carl and I recognized the importance of utilizing waste in manufacturing and the lack of that practice in the market," said Joy Nunn, CEO PurFi, in a press release announcing the new company. "There aren't any textile manufacturers making virgin quality products from textile waste without a [price] premium. On top of that, we shared a vision to take PurFi's technologies and commercialize them at a global scale." Leadership of the new company will be under the purview of Ms. Nunn of PurFi alongside Carl Baekelandt CEO of Concordia Textiles. Production is

expected to begin early next year in Belgium.

"Some years ago, textiles made from recycled materials were just 'nice to have' in one's product range," said Mr. Baekelandt. "Today they are a must-have. More and more responsible brands commit themselves to using textiles made from rejuvenated fibers in their offering. Right from the start."

"Combining the patented technology of PurFi with the Concordia Textiles Group's extensive know-how of fabrics would enable us to contribute to textile upcycling on a global level," said Mr. Baekelandt. "We consider the integration of circular economy principles in the strategy of our customers as one of the key pillars of our commitment to do so."



PURFI
CIRCULAR FIBER PRODUCTS™
MANUFACTURING

PurFi
6528 E. 101ST
Suite D-1, #261
Tulsa, Okla
USA

PurFi Manufacturing
Flanders Fieldweg 37
B-8790 Waregem

Website: www.purfiglobal.com

Plastic innovation at Germany's K-Show

With over 381-million tonnes of plastic processed each year to meet the needs of consumers, the efficient manufacturing of plastics is a pressing concern for the global economy. Innovation in this space is led by Milacron, a Cincinnati-based company behind some of the leading plastic processing and production systems. This fall, the company will be present at K-Show — in Dusseldorf, Germany —, where it will be showcasing its latest injection molding machines, extrusion machines, Low Pressure Injection Molding (LPIM), Mold-Masters hot runners, control systems, co-injection technology, DME mold solutions, and industrial supplies before some 200,000 industry attendees.

Founded in 1874 as a small machine shop in Cincinnati, Ohio, Milacron's track record of innovation goes back to the nineteenth century and the early development of American industry. With a strong background in technology and industry innovation, the company entered the plastics injection molding in 1968. In the last decade, the company put a lot of time and effort into its injection molding and extrusion, a behind-the-scenes process that is key to many plastic consumers.

"For over 50 years, Milacron has led the plastics processing industry through product innovation and technology solutions, said Mac Jones, President of APPT Americas & Europe. Today, we continue to offer an industry-leading portfolio of injection molding, structural foam and extrusion equipment, as well as, the latest in Industry 4.0 technology that provides solutions and productivity to our customers." "We have also addressed customer needs by investing in our aftermarket parts and service programs, which supports optimal

machine performance and increases equipment uptime."

The bulk of the company's injection machines are built in Ohio, though some of the pieces and parts for them are created across the globe. Additionally, the company has plants in Kansas, Georgia, Michigan, and Florida. Other global plant locations include North America, Europe, and Asia.

"With our comprehensive portfolio, we will serve the global market now better than ever before," said Winfried Stoecklin, Managing Director APPT Europe Operations. "We are committed to supporting the European customer base with our extensive knowledge in Injection Molding Machinery and Applications out of our recently relocated German Sales and Service Office. Our passion is plastics processing and our driver to provide cost-effective high-performance solutions to suit our global customer needs."



Due to the heightened need for plastics manufacturing equipment, the company has an on-the-ground presence in 27 countries, with more than 40,000 machines across the world helping produce plastics. North America, Europe, and Asia are key markets for the company's injection molding business.

"We have revamped our European locations within the last few months," explained Mr. Stoecklin, who took this role in February to better strategize the moving parts. "Our main priority now is to provide incredible services and support on our machines and deliver parts right away to the customer's site to ensure efficient operations. Our dedicated teams are supplying the right packages over the full equipment life-cycle of our products. Plus, we are providing added value solutions to adapt machines to new applications and to further increase their productivity".

In October, Milacron will be present in Dusseldorf, Germany for the industry-leading K-Show: a global gathering of manufacturing equipment makers in the plastics industry. There, the company will introduce its most recent line of CE-approved equipment, including its injection molding

machines, Mold-Masters hot runners, control systems, co-injection technology, DME mold solutions, and industrial supplies.

"The K-Show is a great opportunity for Milacron to showcase existing product offerings and provide an overview of technology to come over the next 1-2 years. We continue to focus on technology and maximizing our global footprint in order to provide world-class solutions to fulfill the needs of our customers," noted Mr. Jones. Close to 100 Milacron staffers will be present at the event to inform global manufacturers about the leading technology produced by the company. For example, attendees at the trade show will have the opportunity to view and experience a physical Q-Series injection molding machine up and running.

At the event, the company will show its new line of Mold-Masters hot-runner technology. Considered to be the industry standard for these kinds of machines, the company's latest Mold-Masters comes with the Mold-Masters SeVG+, its most advanced actuation control system, now available for all applications.

The SeVG+ is a servo-driven system that provides absolute control and precision over individual valve pin opening and closing actuation profiles, which offers users a competitive edge for industrial applications. Each SeVG+ system features a large, easy-to-use touch screen display, the ability to make on-the-fly adjustments, compact cabinet dimensions, and integration with the TempMaster temperature control system.

Milacron is a name of instant familiarity to those in the plastics production and processing industry. With deep roots to American industry that go back over a century, the Cincinnati-based company has been at the forefront of innovation in the space. With 40,000 of its machines helping to manufacture and process plastics -- mostly in North America and Europe --, the company stands out in its vertical thanks to the end-to-end, industry-leading service it provides to manufacturers. From the machines themselves to materials or qualified technician service, Milacron's strategy is to bring highly customized equipment, components and service to customers in the \$27-billion plastic technology and processing industry.



Milacron will also be showcasing its new Q-Series product line, which can provide the industry with the latest servo-hydraulic technology in a toggle injection molding envelope. The Q-Series design is inspired by the durable MTs series and the proficiency that was provided by the F-Series. When combined, the globally offered Q-series will provide critical power when it is needed and use less power when it is not, according to a company press release.

“Q-Series provides exceptional repeatability and energy savings,” the company said in a statement. “The clamp kinematics provide enhanced velocities while delivering a smooth and accurate operation. The clamp design provides for better tonnage linearity allowing minimum tonnage to go lower than previous toggle designs. The eco-friendly design generates savings in electrical power consumption, cooling requirements, and lower maintenance cost.”

As far as the plastic industry is concerned, Milacron is also focused on the ability to retrofit and rebuild machines made 35 years ago to become more efficient, faster, and increase the longevity of the machine.

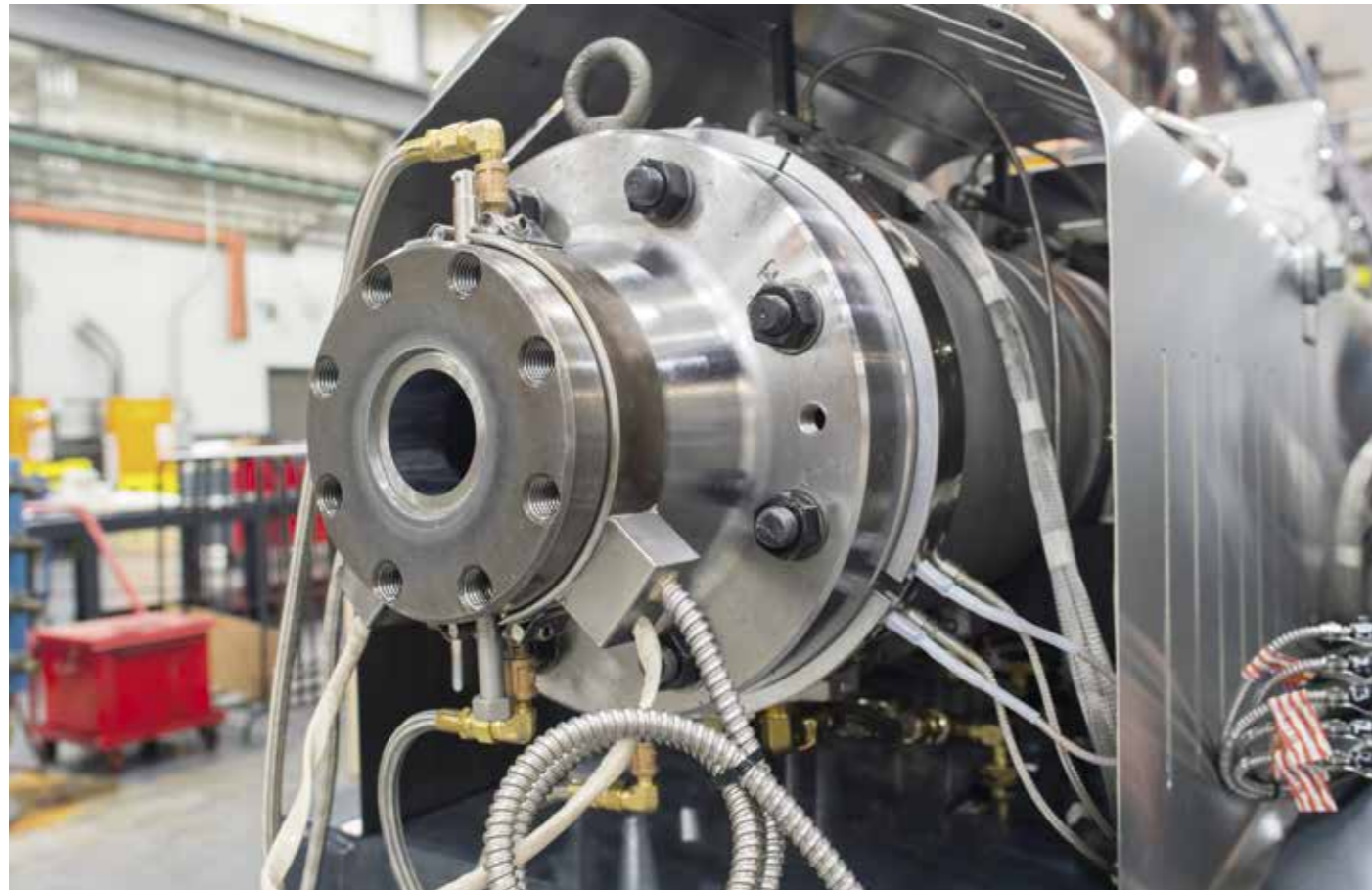
“The Plastics processing industry is rapidly evolving, and we are focused on being at the front of these changes,” said Mr. Jones. “Our goal is to constantly improve and be the best solutions partner for our customers while finding innovative paths to pursue globally sustainable strategies. To maintain this

mindset, we consistently re-evaluate the way resources are consumed and conceptualize how our portfolio can be revolutionized to meet smarter, more efficient operations.”

The company is able to compete in the global plastic injection molding space as well as offering extrusion systems and tooling, melt and delivery control systems for plastic resin, and fluid technologies. It also shines in the after-market space, where it provides the industry with key field services through certified technicians



Milacron Holdings Corp.
4165 Half-Acre Rd,
Batavia, Ohio 45103
USA
www.milacron.com



How to protect your precious iPad

Catalyst is well known for its shock- and waterproof cases for the latest generation Apple products. At this year's IFA, the brand introduced the first 100% Waterproof case for the 10.5" iPad Air and the iPad mini 5. The 10.5" Waterproof case for the iPad Air is presented in a new vibrant red color in addition to the traditional black model. The new cases extend the offering of Catalyst cases that provide 360 protection to the latest series of Apple iPads, adding to the recent release of the Waterproof case for 11" and 12.9" iPad Pro.

Catalyst was founded in 2010 by Josh Wright (an award-winning industrial designer who graduated from the Art Center College of Design) and June Lai (the research, development and business brain), who designed and developed a line of high-performance everyday cases and accessories for their many outdoor and underwater adventures. The company has since become widely known for its impact protection and waterproof cases for the latest iPhone models, but has also added new categories, notably with the Impact Protection Case for Samsung Galaxy S9 and the only Waterproof Case for AirPods currently on the market. The latter is carried by Apple in

more than 500 stores worldwide as well as on apple.com. Catalyst sells its products in 70 countries, both online and in physical retail.

The latest addition to the Catalyst portfolio, the waterproof case for the 10.5" iPad Air (2019) and the iPad mini 5 promise to deliver exceptional performance with an IP68 waterproof rating of 2m (6.6ft) and drop proof rating of 1.2m (4ft). The case features an impact-ready, external grippy rubber bumper layer, extra-large ports and integrated screen protector, a hard-coated optical lens, and acoustic membranes. This case is also refined with its transparent case front and back

that compliments the design of the device. The Catalyst Waterproof Case for iPad is 6.6ft (2m) waterproof (100% tested) and surrounded by a grippy rubber bumper to protect from drops and impacts up to 4.0ft (1.2m). The case features Catalyst's signature transparent case front and case back that compliment and showcase the minimal design of the iPad. With an integrated touchscreen film, you still have access to all features including Touch ID while extra-large ports accommodate most charging cables and headphone jacks.

Catalyst PR manager Chris Herbert believes there's a real need for a case that helps protect the iPad from sticky fingers, coffee spills, messy kitchens, dusty workshops or any of life's adventures. "I have three children and I know the damage they can do," she says. "It's why many parents buy a cheap tablet for their children. And let's be honest, even if you don't have children: we all live our active lives and it's annoying when your device gets dirty, or damaged, and you have to replace it." Catalyst's new red case was received particularly well at IFA, she adds. "It's a new colour for us; we're about functionality first and foremost but we still like to inject some style to our products."



Catalyst
Website: www.catalystlifestyle.com

Additive manufacturing in tooling

Ascent Aerospace, a leading provider of aerospace tooling systems, factory automation and integration solutions, recently invested in a Large Scale Additive Manufacturing (LSAM) machine from Thermwood Corporation. Sean Henson, Global Product Manager of Composites and Additive Manufacturing at Ascent, explains how this move fits in with their strategic objective to serve as a full-service provider and integrator of large tooling solutions. The investment also lets Ascent grow its market footprint.

As the world's leading provider of production and automated assembly systems for the aerospace and defence industry, Ascent Aerospace produces a full suite of both mould and assembly tooling required for the aerospace manufacturing market, including the largest Invar moulds ever made for aerospace. As an automation provider and production system integrator, Ascent works with customers to develop their project and see it through from process engineering, to build and installation to ensure it is an efficient and cost-effective solution.

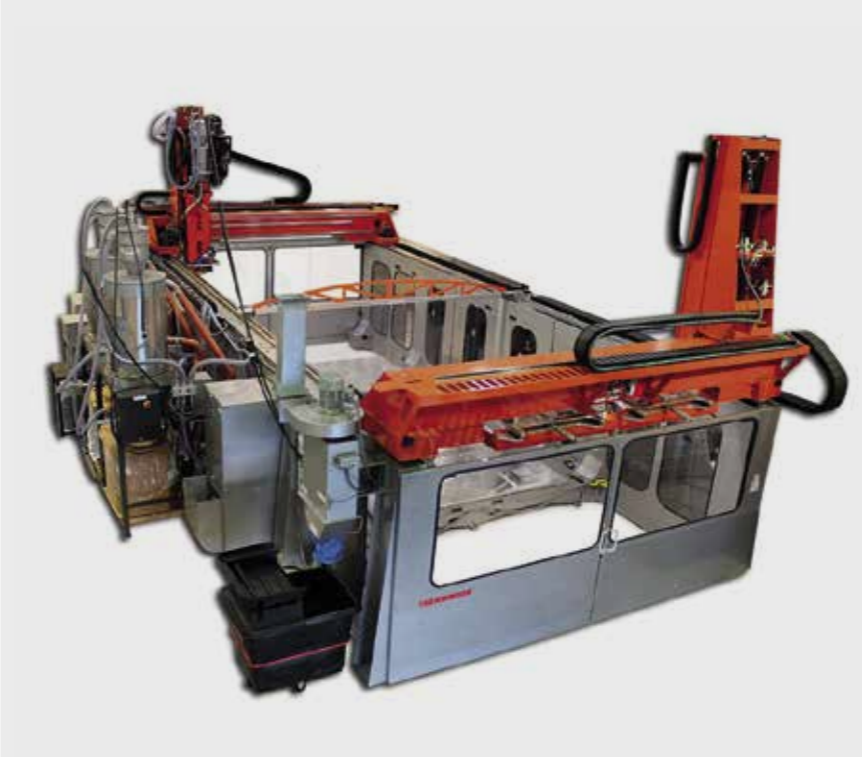
Mr. Henson, who is responsible for overseeing the technical application support and development of their

composites and additive technologies, points out that the last several years have seen a lot of evolution and growth across Ascent as they respond to changes in the aerospace tooling market as well as feedback from their customer base. "As the world's largest aerospace tooling company, we strive to be a full-service provider, whether it's through our internal production capabilities or our role as an integrator of large tooling solutions. A significant part of that growth and the part that I am directly involved with, is expanding our product portfolio and developing new technologies," he comments. "Our HyVarC tooling system is a perfect example of that push; it's an organically



developed product that directly responds to our customers' needs for light-weight, faster tooling. The LSAM investment represents another new technology that lets us grow our market footprint."

He adds that Ascent has been investigating additive manufacturing applications as part of their technology roadmap for the last several years: it made its first investment in desktop 3D printers in early 2018. These have allowed the company to create shop aids and tool samples, rapidly prototype and test designs, and begin the learning



process into additive manufacturing designs. "We have also executed several customer work packages with a variety of additive content, often utilizing third party vendors for the printing, then integrating those sub-assemblies into larger tools. Outside of the LSAM investment, Ascent is also actively researching and developing other additive technologies for use in the tooling industry, and more announcements will follow when those developments are made public."

The use of 3D printing in the aerospace tooling sector has continued to mature over the last several years and is accelerating in usage; with this, Ascent Aerospace plans to answer the industry's call and take additive technology to a new level by leveraging its deep expertise in tooling to commercialize production ready additive solutions.

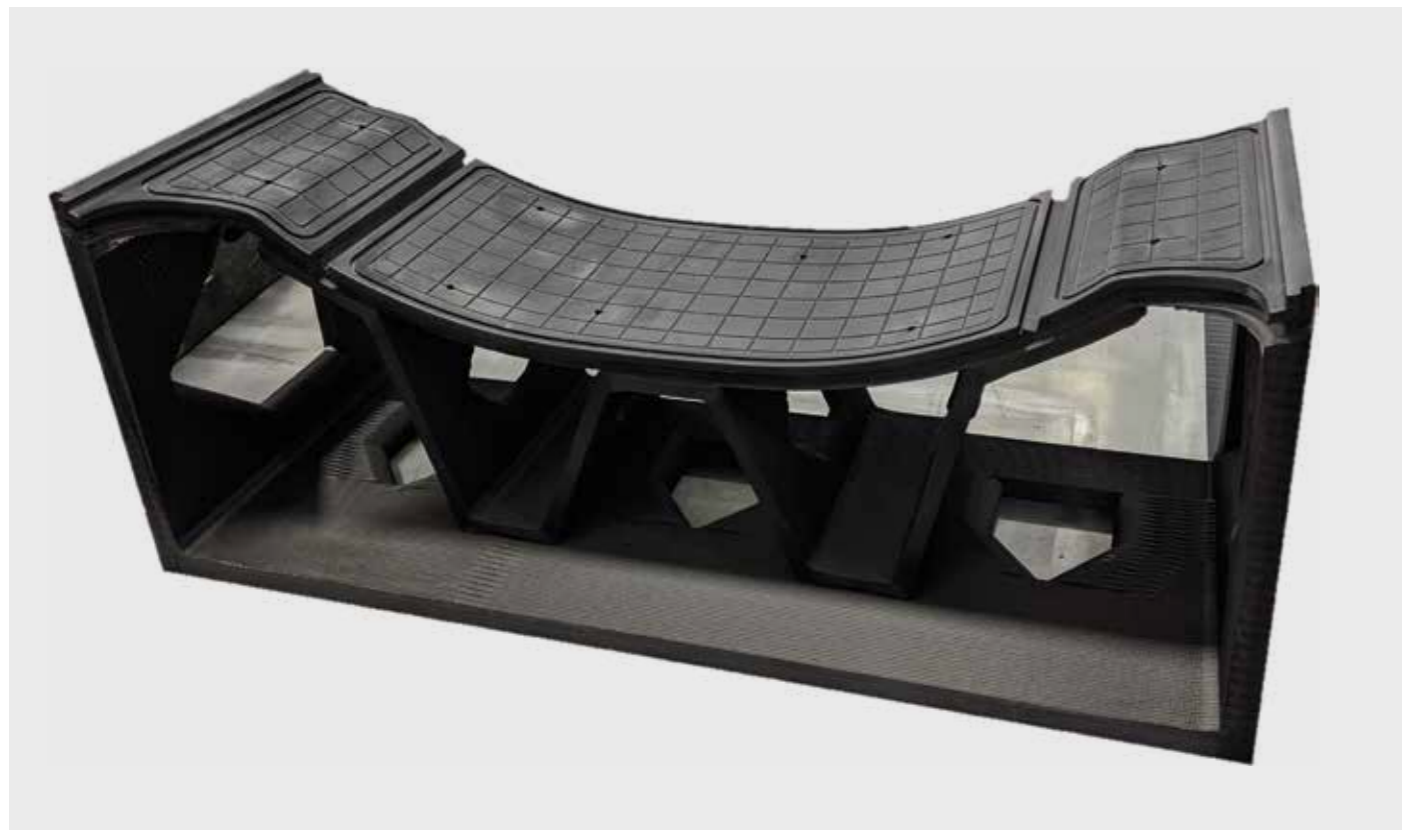
"We've studied the available additive technologies over the last few years, and we've continued to be impressed with the growing maturity of large-scale additive machines like Thermwood's LSAM," says Mr. Henson. "The print speeds, material availability, and finished product quality have continued to improve and provide more flexibility moving forward. For us to make the investment, we needed to be comfortable with not only the technical maturity and quality, but also the need

from our customer base and the willingness to accept a substantially different type of tooling. As we gained confidence in both of these factors, it started to become a question of when we would invest rather than if. At the end of the day, it comes down to our desire to push the industry forward and remain the market leader in innovative tooling solutions. Adding the LSAM expands our in-house capabilities and opens up new avenues for customer collaboration moving forward."

The LSAM machine gives Ascent access to an entirely new method of manufacturing tools and can improve their fabrication speeds and open up a lot of design flexibility. "A key driver of any new aircraft program, like any new product, is how long it takes to bring new ideas to life. And due to the scale and precision requirements of the aerospace industry, a key driver of that development cycle is tooling," says Mr. Henson. "Although prototyping and speedy development have always been valuable applications of additive manufacturing, the scale of aircraft have traditionally made it impractical or even impossible to really leverage the full potential of AM. With the LSAM, Ascent will be able to provide a wide range of tooling, from moulds to trim fixtures to prototypes, at a very rapid pace and help our customers shorten the development

cycle. We can also start to change the way we approach design and better match the fit and form of AM tooling to its function. The freedom of 3D printing, and the speed and scale provided by the LSAM, will allow us to re-evaluate how we incorporate tooling requirements and features into the tools of the future."

Mr. Henson believes that the industry is just beginning to see the effects of additive technologies in the aerospace tooling industry. "The last few years have started to produce real results and tangible savings to manufacturers, and the tooling supply base is starting to see those positive effects in customer engagement and interest. By collaborating with manufacturers, we are able to understand their needs better and explain the benefits of our solutions from a tooling perspective, and it usually uncovers many new opportunities. A key balance moving forward will be selecting the right mix of traditional vs. additive manufacturing because not everything in the tooling industry will be a fit for additive. At Ascent, it is an exciting time to be driving this technology forward. We'll continue to see new opportunities and expand our footprint with the capabilities we already have in-house and continue to evaluate new developments as they hit the market."




ASCENT AEROSPACE

Ascent Aerospace
16445 23 Mile Road
Macomb Township, MI 48042
USA
Website: www.ascentaerospace.com

Award-winning car safety tech

Part of NNG Group, Arilou Automotive Cyber-Security develops high-end cyber-security solutions for the automotive industry. The company was recently awarded Frost & Sullivan's 2019 Best Practices Award for Technology Innovation. "We are excited to be recognized by Frost & Sullivan as the global leader in the in-vehicle cyber-security domain," says Ziv Levi, Arilou's founder and CEO. "As the pioneers of automotive cyber-security, we will continue to strengthen our leadership in the field, providing our customers with best-in-class solutions tailored to their needs."

NNG acquired Arilou in 2016. Mr. Levi, who founded the company in 2012, has stayed on to lead and guide it through the next stage of its growth trajectory. "When we started Arilou there was no dedicated technology for automotive cyber security on the market, that I knew of," he recalls. "Yet the connected car revolution had already started, so there was a clear gap in the market."

Today, automotive cyber security is a hot topic for automakers worldwide as connectivity exposes vehicles to a wide array of risks that never existed before – cyber-threats as well as misuse. Cars have become networked computers with wheels – each function of the vehicle being controlled by an ECU (Electronic Control Unit), with dozens of ECUs connected by an in-vehicle

network. Arilou believes that protecting that in-vehicle network is key to keeping the car safe. The validity of this approach and the effectiveness and accuracy of Arilou's solutions have been confirmed by independent testing of third-parties such as the University of Michigan Transportation Research Institute (UMTRI).

These test results played a big factor in Frost & Sullivan singling out Arilou as 2019 Best Practices Award winner. With a focus on the innovative nature of Arilou's Parallel Intrusion Prevention System (PIPS), and multi-layered security approach, Frost & Sullivan's Senior Research Analyst, Dorothy Amy cites "strong overall performance, growing partnerships, and advanced security features... " as key factors in

granting the award. Mr. Levi confirms that Arilou has formed strategic partnerships with automotive manufacturers and other industry leaders like STMicroelectronics and Alpine Electronics, Inc., while it also collaborates with security providers of complementary solutions, including Upstream Security and Green Hills Software.

Meanwhile Mr. Levi believes the business case for automotive cyber security will become ever more pressing. He highlights that the EU has made new safety technologies mandatory in European vehicles to protect passengers, pedestrians and cyclists, as of 2022. This should also pave the way towards increasingly connected and automated mobility, and boost the global innovation and competitiveness edge of the European car industry. "These regulations support Arilou's mission to make connected cars more safe and secure," Mr. Levi comments.

As the industry prepares for the next stage of the connected car revolution and moves to autonomous driving in the smart city of tomorrow, he worries that car manufacturers haven't decided yet which route they will take. "There's a lot of disruption in the industry right now, and a lot going on. So it's challenging for the industry to anticipate which approaches will be successful and which will disappear."

Ziv Levi receiving the Frost & Sullivan Award from Sarwant Singh, a senior partner in Frost & Sullivan



NNG Group/Arilou
Website: www.ariloutech.com