

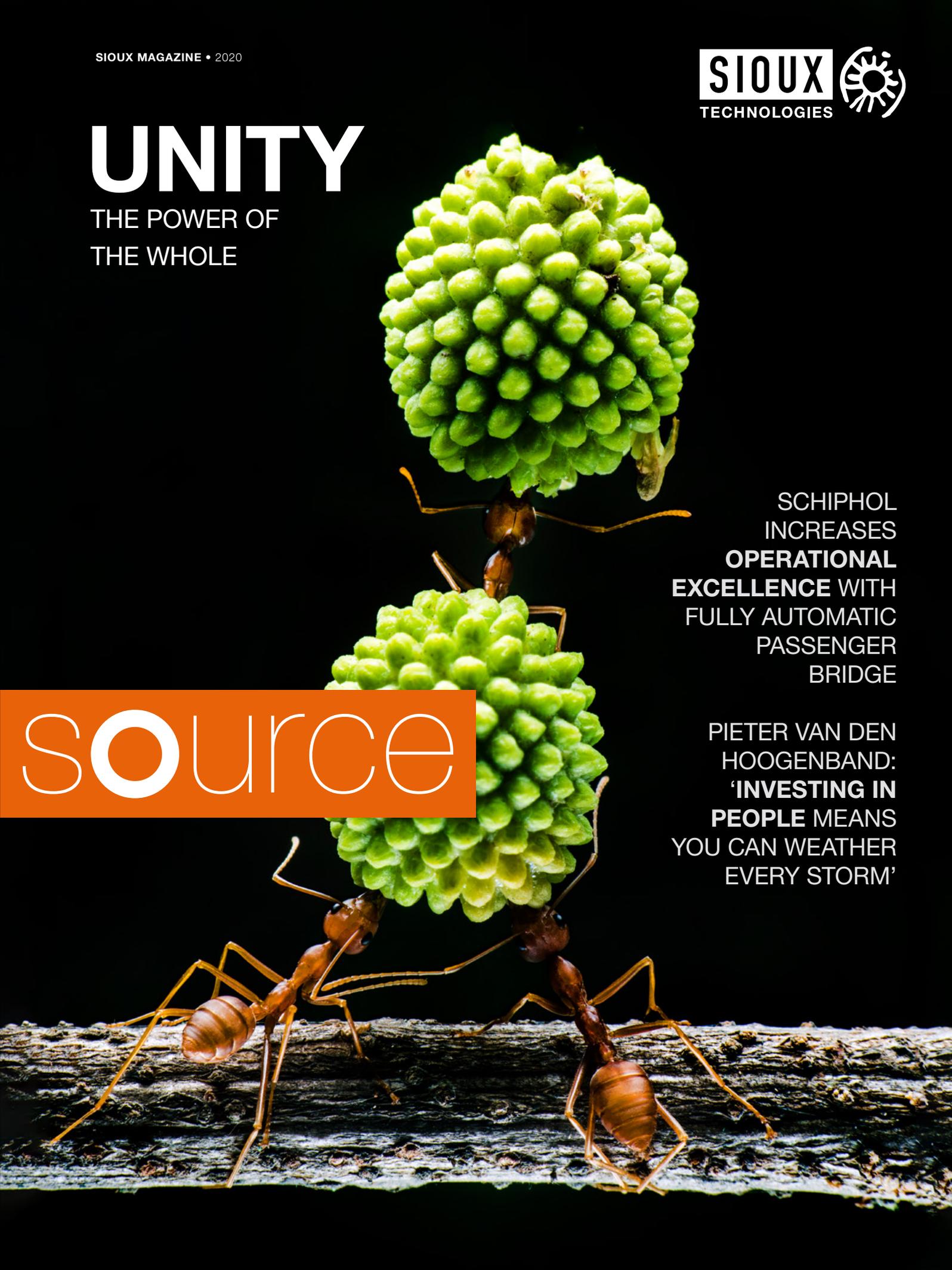
UNITY

THE POWER OF
THE WHOLE

source

SCHIPHOL
INCREASES
**OPERATIONAL
EXCELLENCE** WITH
FULLY AUTOMATIC
PASSENGER
BRIDGE

PIETER VAN DEN
HOOGENBAND:
**'INVESTING IN
PEOPLE MEANS
YOU CAN WEATHER
EVERY STORM'**



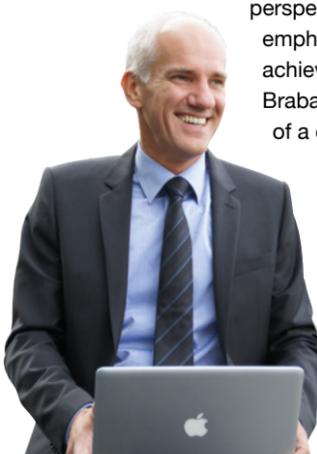
unity

No one can do it alone. This rule applies especially in the world of Sioux Technologies. Our know-how is developing at lightning speed. The complexity of technology is growing exponentially. Due to fierce international competition and increasingly short life cycles, the time-to-market is also constantly decreasing. All of this creates a lot of pressure for OEMs in terms of competences, organization and costs.

Anyone who wants to excel in this impressive field of forces must collaborate for the development, industrialization and manufacturing of products. This starts by recognizing that the world is a big place. However impressive your company may be, even more knowledge and expertise in many fields can often be found outside. Using that – in particular in an open innovation model – will lead to success. We have been demonstrating that for years in Brainport, where Sioux is considered a high-tech strategic development and manufacturing partner to renowned OEMs. Our extensive internationalization ensures that this quality is now also being recognized in the rest of Europe, America and China. This obviously makes me very happy.

The common theme in this Source is the strength of the greater whole. That theme is highlighted from various perspectives. Elite athlete Pieter van den Hoogenband emphasizes that every achievement is a team achievement. The King's Commissioner for North Brabant, Wim van de Donk, talks about the strength of a close-knit network and a deep-rooted culture of confidence. Various articles explain how OEMs shape their collaboration with us and how Sioux serves its customers. I hope these stories will inspire you as much as they do me.

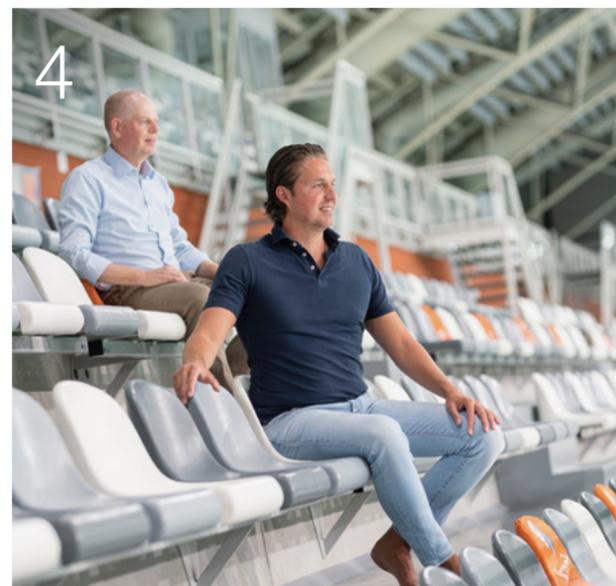
Hans Duisters
CEO Sioux Technologies



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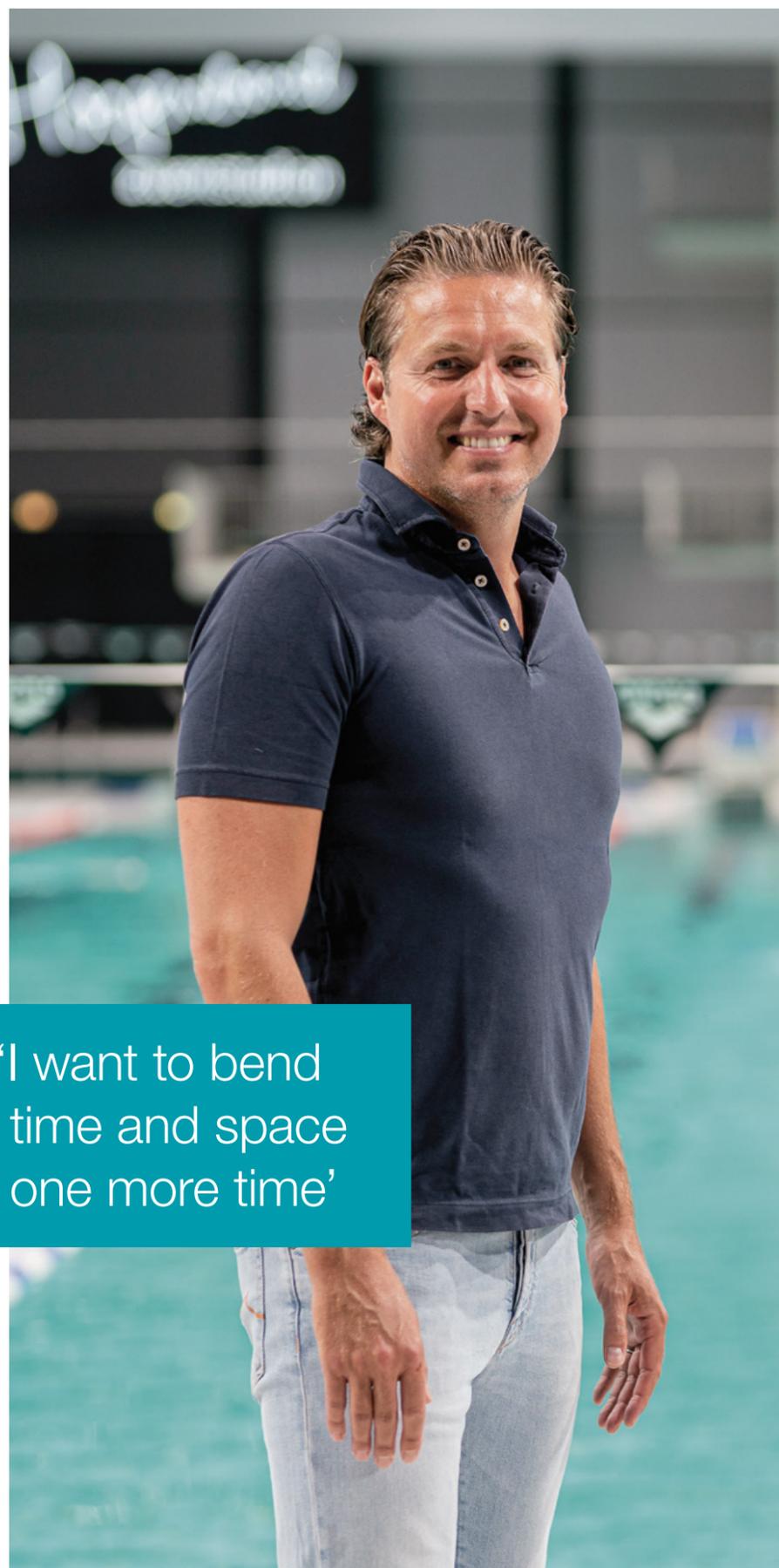
Ron Willems meets
Pieter van den Hoogenband

‘LET GO OF YOUR EGO AND FOCUS ON THE GREATER WHOLE’

Three Olympic gold medals, sixteen European championships and one world title - these are the biggest achievements of former professional swimmer **Pieter van den Hoogenband**. Currently he is the Chef de Mission of the Dutch Olympic team. **Ron Willems**, Managing Director Development & Engineering of Sioux Technologies, visited him and found common ground. Being an elite athlete, also in the arena of the international high-tech industry, requires focus, the desire to perform, innovation and – above all – teamwork. ◉



‘Investing in
people means
you can weather
every storm’



'I want to bend time and space one more time'

Drive

Ron Willems: 'How do you become one of the greatest athletes of our country?'
'At the time of Barcelona 1992, swimming was at an all-time low in the Netherlands. We were not performing, and nobody was interested in it. I was swimming at youth level and wanted to get to the next Olympics. Our team was promising. However, being successful requires more than talent. I set up the Topzweimmers NL Foundation, looked for sponsors and started building new support and momentum.'
 'Realizing this and taking action when you are only 15 is proof of early maturity...'
'To me it was a logical development. At home my parents taught me a few important things, including curiosity and having an entrepreneurial spirit. Several key matters also came together, like the arrival of Jacco Verhaeren, who was already an innovative swimming coach at the time. We wanted to become the best in the world and worked as hard as we could, but we did realize that every achievement was an achievement by the whole team. You should recognize that...'

'Sioux Technologies was incorporated in 1996. I was one of the first to join. Our drive was and is still enormous. The aim is to be among the best in the world. Among other things, this requires professionalism and a winning mentality. However, our basis is our culture that focuses on people and openness, enjoying what you do, doing this together and working on a better world, and playing a leading role. That is a deliberate choice. I consider it to be one of my key assignments to protect this.'

'Some people call that a soft value. I look at it as a crucial quality to maximize what you achieve. You can try to swim as hard

Every achievement you realize is an achievement by the team

as you can, but you can also wonder how you can make each other even better.'

'Exactly. Sioux Technologies employs some incredibly smart people. The technological challenges we face are huge. However, at our level, this will only succeed by collaborating and being happy in your work. That is why offering new challenges and development opportunities is highly important.'
'Investing in people means you can weather every storm.'

'You often wonder about what you should be doing now to be prepared later on, for example, by investing in knowledge and innovation.'

Challenges

'Talking about storms, as the Chef de Mission, how are you coping with the postponement of the Tokyo Olympics?'
'Professional athletes know what success means, but they may be even more familiar with disappointment. After being annoyed for three days, everyone changed their mindset and shifted their focus to next year.'

'What do you consider to be your core task?'

'Creating an optimum climate for world-class performance together with everyone involved. The main question is how we can do this better and smarter each time. I am safeguarding a delicate balance here: between having fun and performing.'

'For me, that is exactly the same. We are the guardians of that balance. If you swing too much to one side, you will lose your focus...'

'How is Sioux doing in these strange times?'

'This is not our first crisis; other examples are the bursting of the IT bubble and the credit crunch. Despite these, we have always managed to grow. Work is continu-

ing now as well. But the circumstances are extraordinary. In January we already received the first reports of the virus from our site in Suzhou. Our Outbreak Management Team was up and running before Prime Minister Rutte's team. The health of our people is our first priority: preventing contamination and making sure that everyone is feeling alright. Contact, also on a personal level, is now more important than ever.'

'Why did you actually accept that job as Chef de Mission?'

'I want to bend time and space one more time, make a real difference. To get a clear picture of my capacities, I formed my own committee of critics. When this opportunity arose, I knew that I could do it. And the Olympics have always been a recurring theme in my life anyway.'

'When will your mission be a success?'
'I am not thinking in numbers of medals. It is about everyone getting the most out of themselves. I am also looking for permanent success. The Tokyo Olympics will be followed by many others. Intensifying our collaboration with the business community, e.g. in the field of innovation, can be highly rewarding here. The Tongelreep National Swimming Centre where we are now – a combined training and research lab – is living proof of this. But you can also easily lose the lead you have built up.'

Future

'Standing still means being overtaken.'
'Exactly. But my motivation goes deeper than that. I want to inspire, most of all my kids – to show them what their dad stands for and what you can achieve. We live in times of abundance, but there are many problems as well. I want to make a positive contribution to our society, and think



Erna Versteegden, member of the Supervisory Board of Sioux Technologies:

'At Sioux I actually see that the people determine the strength of the organization. It's about quality in all facets of the human being and that makes Sioux unique.'

that I can do so. Sport offers a great platform to tell a valuable story. Let go of your ego and focus on the greater whole. We are only here on earth for a short period of time.'

'Do something good with it...'

'That is all. And Sioux? Where will you be in five years' time?'

'We have evolved into an international business with operations in the Netherlands, Germany, Belgium and China, and back offices in Russia, Vietnam and Romania. A Sioux Campus is now arising around our headquarters in Eindhoven, the latest additions being our creative meeting space Sioux Labs and a new assembly hall. Our mechatronics branch in Nuënen will soon also relocate to this site to ensure that our developers, engineers and assembly are close together. This makes collaboration easier and increases our strength. But our ambition goes beyond that. What we achieved in the Netherlands we also want to achieve in the rest of Europe and China. The Sioux of the not-so-distant future is a globally operating, relevant, multidisciplinary, high-tech supplier that nobody can ignore. We also want to make a difference.' ●

The automotive industry is shedding its past

CLEAN AND INTELLIGENT TRANSPORT HAS THE **FUTURE**

The automotive industry is at a historic crossroads. Combustion of fossil fuels is making way for electric power. Cars are becoming driving information systems. **Smart mobility** is emerging as a business model. As a result of this, the market is being reshuffled, also for manufacturers of transport vehicles for people and goods. Established parties need to reinvent themselves; opportunities arise for innovative players. Sioux Technologies operates in the eye of this storm, supporting them with the required innovative strength.

Anyone who characterizes the automotive industry as being 'outdated' is misjudging the sector. Modern vehicles are high-tech machines. They contain refined mechanics, electronics and software that together maximize various aspects such as safety, driving experience and fuel economy. But today's cars are not those of the future.

Futureproof innovation

'Developments are moving lightning fast', explains Erik van Rijswijk, COO of Sioux Technologies. 'The automotive industry is undergoing radical changes, not only in terms of the transition to zero emission. Vehicles are becoming cyber-physical systems – smart, digital, multifunctional, autonomous and connected. At the same

time, they increasingly serve smart mobility concepts – e.g. in the field of multimodality and last-mile distribution – which focus on a network of sustainable efficient transport from A to B. All of this requires fundamental futureproof innovations at system level. Especially the addition and integration of software-based intelligence, and therefore also mathware, makes all the difference here. And this is exactly the core of the added value we offer developers and manufacturers of buses, trucks and special vehicles.'

New development pathways

VDL Enabling Transport Solutions (VDL ETS) is one of the pearls of the Dutch automotive sector. The company focuses

Menno Kleingeld and Erik van Rijswijk (from left to right) >

on researching, engineering, prototyping and testing new technology in fields such as battery- and hydrogen-electric mobility, charging infrastructure and energy storage. Director Menno Kleingeld agrees with Van Rijswijk's analysis.

'People have a new belief: clean and intelligent transport has the future. This is a threat to many traditional makes. Taking new development pathways is not easy, especially if you have committed yourself to large-scale investments, like the production of your own combustion engines and the associated competences. On the other hand, it also creates opportunities for innovators like VDL. We are flexible: geared towards innovation, purchasing



the best components and rapid manufacturing-to-market. We develop our technology based on five platforms: coaches, buses for public transport, vans, lorries and automated guided vehicles (AGVs). These platforms consisting of hard- and software jointly determine the performance of the vehicles. From an efficiency and quality assurance perspective, the modules are largely interchangeable.'

Great and challenging

People from Sioux are constantly working at VDL ETS, both in-house in Valkenswaard and from their own Sioux Development Centre in Eindhoven. Their activities include working on the control software and HMI architecture of the electric VDL City Bus & Coach product lines and e-trucks. They are also being deployed in projects like the localization and integration of new components.

‘Nothing will succeed without the right connection’

Van Rijswijk: ‘This requires special expertise. You are using generic components for process-critical applications with state-of-the-art engineering. Among other things, success requires domain-specific knowledge of procedures, technical requirements, interaction within systems and a passion for vehicles, but also competences in the field of agile working, data and computerization...’

‘And it requires a mutual understanding’, emphasizes Kleingeld. ‘Sioux possesses both high-quality generic software and automotive specialists. That is a great strength. But nothing will succeed without the right connection. VDL does business with an open mind and from a human perspective. I can also see this at Sioux and in its people. They have the same interests and the same energy. They are part of our team and can keep up on every level. This allows us to jointly bring innovation to the automotive sector.’



Since 1998, Tribus has been creating innovative, multi-functional, wheelchair-accessible passenger vehicles by converting existing mini-buses and cars. It embarked on a new adventure in 2018. It developed an innovative compact electric city bus - the **Movitas**. The company contacted Sioux Technologies to turn the design into a driving prototype.

‘The first thing you do is look each other in the eye and ask questions’, explains Andries van den Heuvel, Automotive System Designer at Sioux Technologies. ‘What exactly do you want, what are the essential features and what are the associated technical requirements? Based on this, we created a vehicle model to determine the system layout and to verify the design. We then built the software architecture and added functionalities by means of an iterative process. This makes us responsible for the integration of the modules and components, like the brakes, suspension, lighting, doors, dashboard and electric drive unit. All of these need to be connected and must communicate seamlessly to arrive at a fully functional and safe vehicle. One specific complicating factor was the modular design of the bus. Furthermore, the customer had already made certain choices regarding the parts. This made coordination with the suppliers a key focal point.’

High stakes

Van den Heuvel does not hide his enthusiasm for the Movitas, first of all

because of the concept. It is a modern city bus, not too small and not too big, with zero emission. It also has four-wheel steering, so it can perform special manoeuvres like parking sideways – or ‘crabbing’ – at bus stops. ‘These unique features make the bus highly suitable for use in cramped city centres where manoeuvrability is required, and polluting traffic is increasingly being banned. The risks were high for Tribus. The demonstration model had to be launched at Busworld 2019 to give a clear signal to their new market. We had only nine months to get it all together. We are obviously no strangers to that kind of pressure. A lot of our work is complex and has high stakes. But we are happy to take on that responsibility. In addition to our strict assignment, we had a lot of freedom to help resolve all kinds of engineering issues, by thinking out of the box. We managed to create added value with the purchasing of components and with the graphic design and programming of the dashboard. All of this contributed to the success of this project, and that is a great feeling.’

MATHEMATICS CONTRIBUTES TO A CLEAN AMSTERDAM

Amsterdam will be taking a significant leap forward in the efficiency of its waste collection. A consortium of 3 companies, including Sioux Technologies, has developed a dynamic solution for this. Senior Mathware Engineer **Stijn Fleuren** explains how mathematics makes all the difference here.

What was the problem?

‘Amsterdam wants to reduce the driving movement of garbage trucks through the city and prevent overcrowded waste containers. This will allow them to improve their service towards residents, reduce costs and operate in a more sustainable manner.’

How did Amsterdam come across Sioux?

‘Through a tender process for a research and development contract. We offered the best solution together with Total Waste Systems and 21south. Our mathematical competences are crucial to its development.’

Why?

‘Garbage collection vehicles now drive the same routes at set times. But the actual situation is dynamic. Not all waste containers fill up at the same rate. Volumes also change over time because of demographic and other developments.’

You always want to empty containers when they are almost full...

‘Especially not afterwards; everyone wants the city to be clean. Physical sensors can provide a picture of the fill level, but they are expensive. Sioux developed a virtual sensor: a model that accurately predicts how fast containers fill up, using data like their weight when they are collected. Both of these are being used now.’

What happens to the information from that model?

‘It serves as input for an algorithm that generates routes. Amsterdam is a big city and has thousands of containers. In which order should they be emptied and how do you allocate that work to vehicles and people? Those questions need to be answered every night, taking into account practical limitations like traffic rules and variable accessibility. In mathematics we call this a large-scale optimization problem. In addition, this predictive model can

be used for simulations that support strategic decision-making, e.g. regarding the purchase of additional vehicles or processing locations.’

Can you use this solution for other markets as well?

‘This form of mathematics – operations research – is suitable for tackling all kinds of planning issues. Examples are determining the ideal positioning of chips on a PCB or route optimization for AGVs in warehouses.’

How far along is the project in Amsterdam now?

‘The system was tested in the first half of 2020, including a practical test. The results are positive. It could lead to savings of several million euros per year. Our solution is now gradually being rolled out.’

How unique is this project?

‘As far as I know, there is nothing like it in terms of the combination of sensor technology, mathematical modelling, vehicle telematics, navigation and planning. Furthermore, only minor modifications are needed to make our solution applicable in any city. It therefore has global market potential.’



Watch the Sioux webinar: Data Technologies for Process Optimization

Schiphol increases operational excellence with fully automatic passenger bridge

'SIOUX CAN BE PROUD OF WHAT WE HAVE ACHIEVED TOGETHER'

'Without Sioux we would not have got this far'

Oscar Maan and Annemarie Buddemeijer (from left to right) >

Schiphol wants to become the most sustainable and high-tech airport in the world. The slogan 'We are innovators' reveals the path they are taking for this. Technological and process innovation take up a central position in achieving this goal. Last September, they launched a world-first in this regard. The airport put a fully automatic double passenger bridge into service. The intelligent heart of this technology is the **Automated Docking Add-on Module (ADAM)**, developed by Sioux Technologies. ◀

Eliminating a problem requires you to know its cause



'Everyone in our sector is looking at what we do', says Oscar Maan, Innovation Manager at Amsterdam Airport Schiphol. 'Together with a few other airports like Heathrow and JFK, we are setting new standards in the field of security, passenger flow, provision of information and baggage handling. Everything developed and implemented at Schiphol serves as a benchmark everywhere; it is discussed and pursued elsewhere. This will be no different for our fully automatic double passenger bridge.'

Joystick

Anyone who flies regularly knows that docking a plane to a gate is not always a smooth process. Passengers regularly have to wait quite a while until the doors are opened. This often leaves them packed in the aisle like sardines in a tin, which leads to irritation. But these kinds of delays have other negative effects as well.

Maan: 'On-time performance is a KPI for Schiphol. Time equals money in the aviation sector. We therefore have financial agreements about this with clients like airlines and baggage handlers. In addition, aircrafts are regularly damaged due to the manoeuvring of passenger bridges. This is not surprising: they weigh many tonnes and are manoeuvred on sight with little margin for error, using a joystick. That also affects our operations and leads to complaints and claims. Eliminating a problem requires you to know its cause. In this case it is a split between technical failure and human error. Automation will then be the solution. There were no ready-made products available at the time, so we decided to create them ourselves. Our bridge supplier – the Chinese company TianDa – and KLM were natural project partners here. But we soon realized that we would not succeed without a development party with exceptional expertise in the design and engineering of complex robots

with intelligent visual systems. Furthermore, there are good reasons to keep the development and production of this kind of critical technology close to home. This resulted in us engaging Sioux.'

Self-learning algorithm

The technological core of the new passenger bridge at Schiphol is formed by ADAM. In 2016, Sioux started the development of this module, which can be integrated in existing and new passenger bridges as a plug-and-play add-on. According to Project Manager Annemarie Buddemeijer, the company uses all of its competences in the field of mathematics, software and optomechanics here.

'It is an advanced system, if only because it recognizes the two doors to which it should dock all by itself. That is a major accomplishment. Every plane is different: its colours, lettering, size, design, etc. The conditions are also highly variable. Things must go smoothly all the time regardless of positioning, time of day or night, with backlight, in full sunlight, when it rains or snows, when it is foggy, etc. We achieve this by means of two cameras that allow us to see depth. The computing power of the on-board computer – to ensure the reliability of an autonomous system – guarantees the necessary analysis speed for the 3D data. The intelligent component is a Smart Vision algorithm, which during software development was fed more than 1000 images we collected at Schiphol. But there were other challenges as well, e.g. in the field of communication with the drive

'The intelligent component is a self-learning algorithm'

unit of the bridge itself. Another aspect is that ADAM is mounted to the head of the bridge. Conditions can be freezing there, but the temperature inside the box can rise to 70 degrees Celsius. In addition to this, you have to deal with vibrations and kerosene fumes. This made climate control and robustness key development themes.'

Proud and positive

At the moment, the fully automatic passenger bridge is used for intercontinental flights at Schiphol's F Pier by KLM and its partners. The trial - during which an optimization step was carried out in a fully operational environment - was already completed in 2019. A decision still has to be made about the intended rollout – Sioux is prepared to manufacture 50 units in 2020. Maan: 'The COVID-19-pandemic has hit the aviation sector severely. Organizations are under pressure; the focus is on surviving this crisis. Last year Schiphol received 70 million passengers. At the moment there are a lot less. Revenues are dropping sharply, as a result of which all expenses are being scrutinized, including the budget for the passenger bridge. But this says nothing about our joint achievement. The pilot was a success. Following the system's further development, its failure rate must not exceed 1 in 1000 and we are well on our way towards that goal. This innovation is also one of our own developments, directly affects our strategic commitment to achieve operational excellence, serves sector-wide interests and can be applied globally. Whatever anyone says, that joystick will be a relic of the past in due course. We are therefore extremely proud and positive, and Sioux Technologies can be too. Without them we would not have got this far. Let's hope that we can maintain our momentum and that we will be able to develop a few additional passenger bridges of the future within the foreseeable future.' ◉

Virtual 3D environment

DIGITAL TWINNING IS WINNING

The pressure is constantly on in the high-tech industry. Increasingly complex technology needs to find its way to the market at an ever-increasing rate. 'Working with a Digital Twin can be highly valuable here', explains **Robert Hendriksen**, Senior Software Architect at Sioux Technologies.

What is a Digital Twin?

'People talk a lot about this, but everyone has different thoughts about it. To me it is a digital representation of a simulated or existing system, or something in between, like a model fed with real-life data. You can use it to achieve various benefits.'

How?

'In our world you want to achieve optimum results, but you also want to do this quickly. A Digital Twin can help to make development processes easier and faster. It can make software engineers less dependent on electronics and mechanics.'

You do not have to build a physical system right away?

'Exactly. And if you can visualize it properly, you can quickly reach your first review step. You can go through it together with all the specialists and parties involved. This gives everyone a detailed picture, allows you to test functionality and technical performance, and makes rapid iteration possible.'

That means you will benefit in the next steps...

'You eliminate design errors in the early design stages. That saves time and money, also during the prototyping and production phases. But a digital twin can yield more, for example, by using it as a copy of an existing system for service training and remote selling.'

How far has Sioux developed this technology?

'Sioux is leading the way. With our own software we can generate a Digital Twin from a schematic design drawing and visualize it in a Holodeck. The virtual reality environment created in this way is unique in terms of its intuitive use and precision, partly thanks to our collaboration with Enversed.'

And in practice?

'Among other things, we are using it for the development of medical washing and sterilisation machines, high-tech ovens, deposition machines for the solar market and for advanced packaging machines.'

What is the future?

'By linking the Digital Twin to real-life systems and using it to modify the models or simulations, we can also continue to apply it as a training, sales and maintenance tool later on in the product lifecycle. The use of a Digital Twin will only be increasing here. Artificial intelligence will be expanding the insights for the currently installed base and for future iterations.' ◉





Etienne Shaffer

SamanTree Medical and Sioux Technologies

INVESTING TOGETHER IN NEXT GENERATION MEDICAL IMAGING

The introduction of digital technologies, like 3D printing, robotics and nanotechnology, heralds a new future for medical care. One of the companies shaping this revolution is the Swiss firm SamanTree Medical. They developed the **Histolog® Scanner**, which allows surgeons to identify cancer tissue in real time and are preparing its commercial roll-out now. 'In all of this, we have found an indispensable partner in Sioux', explains CTO **Etienne Shaffer**.

Usually, tumour surgery is not limited to a single procedure. Removing malignant tissue and at the same time retaining as much healthy tissue as possible – e.g. when treating breast cancer – is not easy. Furthermore, the level of success is not determined until afterwards in a pathology lab, where the periphery of the removed tissue is analysed and assessed.

Subcellular level

'This regularly reveals that an additional operation is required', says Shaffer. 'These operations are stressful to the patient and very expensive. Our Histolog Scanner offers a solution. We bring ultrafast digital confocal microscopy to the operating



Robbert van Herpen

theatre. After dipping fresh tissue in a contrast medium, it can be put on the Histolog Scanner; there is no need to cut it or fix it to glass. Within one minute it is ready for imaging. Within the following minute, you have a detailed picture of the morphology with a subcellular resolution. This allows the surgeon to determine margins much more accurately during surgery, to work more precisely and avoid a follow-up operation. But our technology can also be applied more broadly, e.g. for biopsies or as part of the pathology workflow.'

Data management

The Histolog Scanner is a breakthrough in medical imaging by itself. It can scan and process tissue samples with a diameter of up to 8 cm almost in real time. This large field of view – typical tissue sections are 1.5 cm – offers considerable advantages. But it also requires a great deal in terms of data management. According to Shaffer, the second major challenge is the development of user applications. 'The accuracy with which specialists interpret images depends on many factors, like their training level and experience. We want to help clients eliminate this subjectivity and speed up the analysis process. The first step here is to automate the initial rough

analysis. We recently released an application for our Histolog Scanner, which independently identifies areas of interest for further inspection. We created this application together with the software and mathware specialists of Sioux.'

Deep learning

'That tool is cutting-edge technology at the interface between data analysis and artificial intelligence', underlines Robbert van Herpen, responsible for the Mathware division at Sioux Technologies. 'The system needs to quickly, accurately and reliably recognize various patterns in a variety of tissue types. That forms the basis for the data model. During its development, we applied the latest insights in the field of deep learning. By feeding it the right data, optimizing the hyperparameters and deploying it in the SamanTree system, we made the leap towards a high-tech solution. Right now, the tool is very good at pinpointing areas of interest and is ready for use in operating theatres. The holy grail would be an autonomous system that is 100 percent correct and excludes human error. We are not there yet, but the current scanner and applications are already facilitating a revolution in tumour surgery.'

A revolution in
tumour surgery

Early adopters

SamanTree Medical operates a fleet of eight Histolog Scanners for demonstration projects in various European medical centres in preparation of the commercial roll-out. Sioux also plays a key role in this. Shaffer: 'When looking for a development and manufacturing company, we came across Sioux 3 years ago. Now in 2020, we are connected in many different ways. The **Sioux Tech Fund** joined up as an investor. Apart from being an extension for our R&D, Sioux also is our exclusive partner in industrialization and manufacturing. Production has been fully transferred; this helps us to focus on our customers. That market introduction will be a step-by-step process due to the revolutionary nature of our technology. But the masses will follow the early adopters, of that I am certain. Sioux's engineering and manufacturing skills will also help us then in terms of further development, upscaling of production and cost-down operations.' ●

Mart Lommers

'I REALLY WANT TO DO THINGS TOGETHER'

Mart Lommers could not have imagined a stranger start. He started as a Project Manager at Sioux Technologies in May 2020. The Netherlands was in an intelligent lockdown due to COVID-19. For the first few months he was at home, working on his laptop. Despite this obstacle, he immediately knew he was in the right place. 'The atmosphere, collaboration, growth opportunities, ambitions... Sioux feels right in many ways.'

While studying Management, he worked in the warehouse of a large high-tech manufacturing company, and continued to work there upon graduation. He started out with purchasing and planning, became customer manager and was put in charge of projects. Despite this career he decided to switch to Sioux. The question is why?

Fun

'I want to work for an innovative company that focuses on people. To me it is very important that you really do things together. Everyone has their own knowledge and qualities. Recognizing these and empowering people gets the best out of teams. It also increases everyone's happiness at work. In addition, I want to make a difference and realize my full potential. I knew that Sioux values these things highly. Now I am experiencing it in practice, for example, in the shape of a

training budget that I can freely spend, as well as many responsibilities of my own.'

Making a difference

Lommers is based at Sioux's brand-new modern assembly hall. According to him, this reflects the company's willingness to invest. 'It is open, the facilities are modern, and it is designed for growth in volume and processes. We organize world-class manufacturing here, but we do so with the DNA of a system developer. That is unique and, among other things, has led to our success in new product introductions. The fact that I am close to the decision-makers means that I can make a real difference. In this regard I am also developing myself on the job. I am involved in complex tendering processes worth many millions of euros. Which 27-year-old Project Manager can say that?' **●**



'I want to work for an innovative company that focuses on people'



King's Commissioner Wim van de Donk

'SIOUX RECOGNIZES THE VALUE OF INVESTING IN NEW TECHNOLOGY AND COMPANIES'

Wim van de Donk took office as the Queen's Commissioner for North Brabant in 2009. The credit crunch had just erupted in all its fury, and the province was forced to show its flexibility. Now in 2020, on the eve of his departure, **Van de Donk** concludes that they managed to do so. 'We came out of it stronger. This is partly thanks to the special culture we have in Brabant and the strength of our high-tech industry. We do not have egosystems here, but ecosystems. Collaboration and an open mind play central roles.'

The economic strength of North Brabant has many faces. One of the most prominent ones is that of a flourishing high-tech cluster in the innovative hotspot called Brainport. However, Wim van de Donk goes deeper when asked to unravel the secret to his province's success.

Trust and fun

'People in Brabant have never had an aversion to technological innovation. They are not afraid of it and focus on the positive things: the new opportunities it offers. You already saw that during the industrial revolution and the mechanization of farming, and this has not changed since then. What makes our regional fabric different from others is that it goes hand in hand with a deep-rooted culture of trust and fun. Our province has a family economy: we know each other, the networks are closely knit and we do it for the next generations. At the same time we are also open to what is going on in the rest of the world. All of this constitutes a unique feeding ground for innovation in all kinds of sectors, in both

small and large companies. Our high-tech manufacturing industry is also the result of these qualities.'

Industry 4.0

Global dynamics in the high-tech industry are fierce. The fact that North Brabant has gained a strong position in it with Brainport Eindhoven, e.g. in the semiconductor, 3D printing and medical equipment sectors, is a huge achievement. However, maintaining and further expanding this is at least equally challenging.

'Apart from having great major corporations, such as ASML and Philips Healthcare that call Brabant their home, all kinds of new micromultinationals are emerging', says Van de Donk. 'We must facilitate these businesses with a promising future by creating a suitable investment culture and access to capital. Certain steps can still be taken in this regard. Many of our companies that have existed for many years are undergoing a critical generational change. This creates new dynamics. In the meantime, the next revolution is already underway: the emergence of Industry 4.0. This yields opportunities. But seizing those opportunities requires new knowledge to be gained and applied, in areas of expertise like photonics and materials. It also requires talent development and multidisciplinary innovation. Collaboration between companies and with our knowledge institutions is essential here. Nobody can do this alone. From that perspective, the network we built up in the Chinese Province of Jiangsu is also of great value.'

Thinking big

Sioux Technologies and Van de Donk are no strangers to each other. He regularly visited the company during working visits in Eindhoven and during trade missions in China. A close bond was formed as a result. 'Our region has grown into an absolute powerhouse. Retaining that requires us to think big, make the right choices and continue to innovate. In this respect, I see Sioux Technologies as representing the North Brabant of the future. It has a huge drive to innovate and broaden its activities. Sioux recognizes the value of investing in new technology and companies. In

addition, it has great ambitions in Europe and Suzhou. I consider this internationally responding to market developments, gaining expertise and binding of talent to be a major achievement. Furthermore, Sioux very clearly recognizes the strength of being open, sharing and having fun in everything you do. All of this has led to remarkable growth and the creation of one of the new high-profile companies in our province.'

Fighting

Van de Donk's position as King's Commissioner is almost at an end. He will leave in the autumn of 2020 to become Rector Magnificus of Tilburg University. This marks a return to his old love: the academic world. 'I will be doing this with great confidence in the future. I am proud of what has been achieved. When I started in 2009, the crisis was deep. North Brabant found itself on a

'We do not have egosystems here, but ecosystems'

socioeconomic, political and cultural fault line. Together we restored confidence and structurally came out better. This will also help us to survive the COVID-19-crisis, which has hit us so hard. Of course, I will miss this job, but change always leads to new opportunities. Plus I will not be leaving the province. Over the past 10 years I have fought for a better Brabant with all my heart. Now I will continue to do so from a different position. Strengthening our high-tech ecosystem will remain a focus area here, for example, by tightening the bonds with Eindhoven University of Technology, but also by fighting anti-EU sentiments. Continuing to look outwards, also beyond our national borders, being aware of the strength of the greater whole, is and will remain essential to our welfare and our wellbeing.' ●

DO WHAT YOU DO BEST



‘Our partnership will only become deeper and broader’

ELEMENTS

‘Our partnership with Sioux is so much more than the traditional relation between client and supplier.’ These words are from **Paul Tritman**, Vice President Operations of Petroleum Analyzer Company (PAC). ‘As an OEM and service solutions provider we manufacture, distribute and service products all over the world. We cannot do this alone. In Sioux we have found a strategic development and manufacturing partner that makes an essential contribution to us realizing our ambitions. We are greatly interwoven and the partnership will only become deeper and broader.’



Paul Tritman ^

PAC is a global manufacturer of laboratory and process analysis equipment. The company focuses on the development of solutions for gas chromatography, elementary analysis and the determination of physical properties of hydrocarbons. With these products, they mainly serve the downstream oil and gas industry, including refineries, petrochemical and gas processing plants.

Competitive

‘We aspire to be the market leaders in our niches’, says Tritman. ‘We want to retain that position and expand it. This requires very close ties to our customers: knowing what their current and future needs are and satisfying them as a stable and reliable service provider. PAC is a group of specialized scientific companies. Innovation is our strength: creating and validating innovative applications. We focus on functional quality and the provision of excellent services. We are dependent upon the capabilities of value added service providers like Sioux to help us achieve the lead times, quality and cost-efficiency needed to be competitive with our high-complexity, low-volume, high-mix products. *Do what you do best* - that is the motto. It serves as the basis for our partnership with Sioux as a strategic development and manufacturing partner.’

Skills and experience

Rene van Wijk, responsible for the assembly activities of Sioux Technologies, has

over 15 years of experience in the high-tech industry. During this time, he has seen systems become increasingly complex, while the pressure on development times and the introduction of new products has increased significantly.

‘Within that force field, manufacturing is a competence in and of itself. This requires focus. It also forms the basis for our work for PAC Rotterdam. Their ElemeNtS detects the amount of sulphur and nitrogen in liquid, gaseous materials and LPG samples using ultraviolet fluorescence and chemiluminescence. A second product – M4 – belongs to the gas chromatography family. We provide all-in-one solutions for both of these: from translating the specifications into the design of electronics, embedded software and mechanical components all the way to assembly and the testing of the machines. During this process we improve the quality, accelerate delivery times and minimize the costs. This would not be possible without relevant expertise, a multidisciplinary approach, the right skills and experience, good facilities and optimum supply chain management. But it starts with a feeling of ownership and the willingness to take on that responsibility.’

Drive

Sioux recently opened a new assembly hall with a 400-square-metre cleanroom and a complete cleaning line. It is close to the company’s headquarters in Eindhoven. The Sioux mechatronics company will soon also relocate to that same business

park. By doing so the company is bringing all its software, mathware, electronics and mechanics specialists together at a single campus, increasing its strength even more. Late last year, Tritman visited the company for the first time.

‘It was like a homecoming, not only because of the high-complexity of the products being manufactured, but also due to the exceptional professionalism, drive and knowledge of the teams developing our analysers. Our relationship is founded upon trust and mutual respect and this was certainly the case with our management teams. All of this instils confidence. That is when you realize once again how much our companies are interwoven, including our business interests. We surpassed the traditional client-supplier relationship long ago. It speaks for itself that we have direct and difficult discussions sometimes; that is part of the process. But they are held in all openness and generate better results and deepen our trust and respect for our each other. Our strategic partnership will therefore only become deeper and broader, for example, in terms of our order portfolio, identifying new market opportunities, developing innovative solutions and cost-down opportunities further on in the product life cycle. So we really are in it together for the long run.’ ●

Sioux Technologies has all the expertise to contribute to the maximum success of high-tech products and production systems. Sioux's strength lies in the unique combination of high-quality competences in software, mechanics, optics, physics, mechatronics, electronics, mathware, system integration and IoT solutions. With more than 700 engineers Sioux supports or forms the R&D department of leading high-tech companies. Sioux is keen to take responsibility: from creating ideas in the conceptual phase up to the delivery of serial production. Sioux wants to add value to its clients and build innovative solutions that can contribute to a society that is smarter, safer, healthier, more enjoyable and more sustainable. **For more information go to www.siox.eu**

