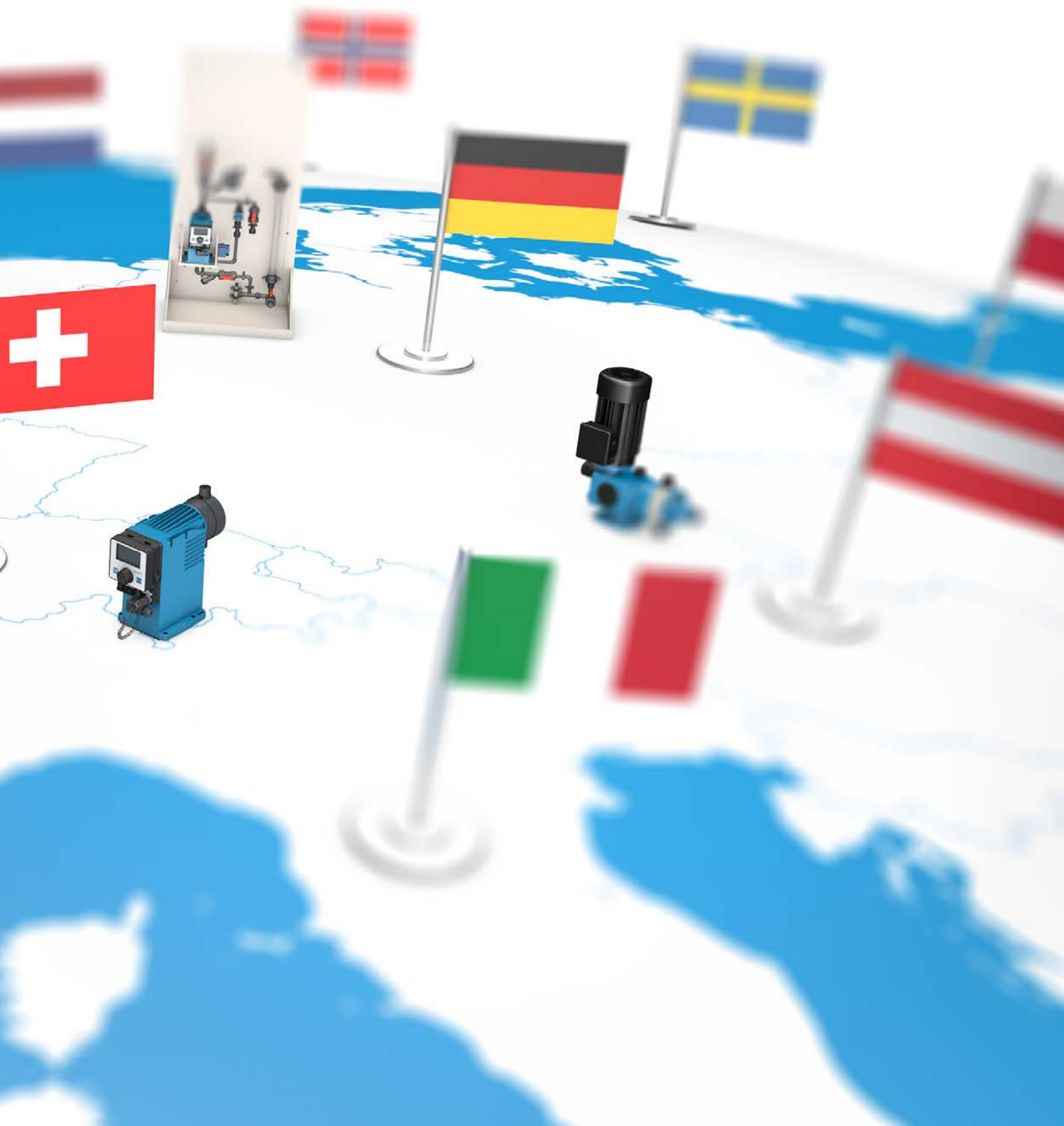
seranews

The magazine for **sera** group customers

Issue 2018



2,674

That's how many years of service there currently are between all **sera** employees put together. It also means 2,674 years of expertise and knowledge about our business. Not only do we have every reason to be proud of this, we also use this as a 'treasure trove of experience' for our customers.

In everyday life, experience is generally described as tried-and-tested knowledge gained over the course of a lifetime. Professional experience, in turn, means that a person has spent a long time engaged in a particular occupation, facing and coping with various challenges and amassing a broad store of knowledge as a result. And sharing experience is understood to mean mutual learning. Every day we transform these 2,674 years of professional experience into intelligent solutions - for our customers.

EDITORIAL

Dear readers,

can you imagine creating two new branches in just twelve months and opening a new production site? At any event, our employees have been equally unimpressed by our ambitious plans as have all other partners in these projects. Those who know us, know: A fast pace is simply a must at **sera**.
In an increasingly dynamic environment, we have long since realised that we can only confirm our success time and again with a systematic strategy and a willingness to constantly change and improve. A significant building block for this is to bring us closer to meeting the needs of our customers. In the coming months, we will therefore continue to work on ensuring that we gain an even more local presence.
For this reason, this issue of **seranews** is entirely devoted to the topic of internationalisation. You most probably already have a pretty good idea of what it is all about - and you are probably not that far off the mark. It is not just about handling international projects or delivering products to distant countries. It is rather a question of broadening our horizons and really thinking in international terms. At **sera**, we do this in a variety of ways. Not only do we venture out into the world and face it head-on with a large number of projects, but we also bring the world to our headquarters in Immenhausen. We now have people from 14 nations working with us to inspire our customers with our products. This is typical of the **sera** business and its employees - some of whom you will get to know on the following pages.
In 2019, we will continue to develop solutions for a wide range of applications that meet the diverse demands placed on system technology. We are very well positioned for this - with over 230 employees worldwide, we will develop and manufacture tailor-made systems for you for use on every continent.
Be inspired: By our drive to continuously improve ourselves and to search for new markets and face new challenges - worldwide. I hope you find this latest issue of the new **seranews** to be an inspiring and stimulating read.

Yours,
Carsten Rahier


sera.

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AT HOME THROUGHOUT THE WORLD - INTERNATIONAL SALES

One of the overarching goals of the sera group for the next few years is internationalisation. In addition to setting up new branches, as we have recently done in Austria, it is essential to maintain and expand existing partnerships with our international trading partners and to enter new markets. These tasks are performed in the sera businesses sera ProDos GmbH (dosing technology) and sera ComPress GmbH (compressor technology) by Bhuwan Gautam and Thanh Ha Schmidt. A chat about their work and their background.

seranews: *You are both working in international sales at* **sera**. *What exactly are your key responsibilities? And what differences arise? After all, you do work for different GmbHs?*

Bhuwan: Together with two colleagues, I provide support to our international trading partners. I am the responsible application engineer for the Asian, Asia Pacific and MENA regions. I process all orders received by **sera ProDos GmbH** via the trading partners from these regions. In addition, I am occasionally on a work assignment abroad: I hold training courses at our partners' premises and some of them at end customers' offices. Some countries attach great importance to having direct contact with **sera**, where, of course, 'Made in Germany' plays an important role - especially in Asia.

Thanh Ha: My situation is basically similar in nature: I also provide support to trading partners, but only those of **sera ComPress GmbH**. This is of course less than at **ProDos**. This can be easily explained due to the more comprehensive projects that we are providing support for in the field of compressors. With us it can take about a year before a project is implemented. As the projects at **ProDos** are much smaller, the employees working there are able to oversee significantly more projects. I try to visit each trading partner once a year, which is especially important in Asia in order to maintain business relationships and to be respected. For **sera**, I am on assignments all over the world, sometimes accompanied by a design engineer, and travel to our partners for project meetings, but also for strategic business planning. I also regularly attend trade fairs and congresses on behalf of **sera ComPress**.

seranews: *Which countries have you travelled to for* **sera** *and how do you prepare yourself for each business trip?*

Thanh Ha: I travel to the Netherlands, France, South Korea, Thailand, Japan and China regularly. Of course, the most important thing is to prepare for the upcoming discussions and to have the appropriate documents with you. But it is also important for me to deal with intercultural differences before travelling to new countries. You should have the Dos and Don'ts ready to avoid putting your foot in it.

Bhuwan: I have a different approach. Perhaps this is due to my background - I come from a diplomat's family and have already lived and worked in different countries - but I am convinced that empathy and openness as well as attention are the most important things to make it on the international stage. Observe, always be friendly and courteous and you will be welcomed with open arms and respected all over the world. At any rate, I have never had any difficulties - in the more than 60 countries that I have already travelled to. For **sera** I have already been in Turkey, Singapore, Malaysia, India and Iran.

Visit to Heineken (end customer) in Malaysia

seranews: *Bhuwan, you are from Nepal, Thanh Ha, you are from Vietnam. How did you come to Germany and end up joining* **sera***?*

Thanh Ha: After completing my studies in Vietnam and gaining half a year's professional experience, I decided to get a Master's degree in Business Studies, which I completed in Sunderland, England. During my studies I met my current husband, a German, and then moved to Kassel with him with my degree in my pocket. German as a foreign language was not easy to learn, but I managed to learn it quite well. But I also think I have a talent for languages. I also find that the German grammar rules make sense and are easy to understand.

Thanh Ha and colleague Alexander Eisenach in Thailand; trading partner Siam, customer IRPC

Before I started at **sera** in 2016, I completed further training to work as an export specialist for wood, energy and environmental technology as well as a building energy consultant and worked for about five years in the field of power generation from waste heat. I can now contribute my knowledge to the projects in a great way, especially in the area of hydrogen as an energy carrier.

Bhuwan: I was born in Nepal but I spent most of my schooldays in Canada. I returned to Nepal for my school leaving examination as I wanted to get to know my roots. After studying physics in Nepal, I changed to the Bochum Technical University to study mechanical engineering. Already during my studies I was working for traineeships or as a development aid worker abroad, mainly in Mongolia and Chile. My first professional steps were also in international companies and I spent a great deal of time in China. I made a conscious decision to go to Germany because there are very good educational

sera training course at Netzsch Malaysiasteller in India

opportunities there. With hard work and perseverance, anyone can become anything in Germany. I came to **sera** because I have a great deal of experience in the field of pump and compressor construction and it quickly became clear that I would be exactly the right person for

Visit to KG-Denim Ltd (end customer), one of the largest textile manufacturers in India

international sales.
What many people are unaware of: Nepalese and Sanskrit are Indo-Germanic languages, so they have a lot of similarities because they have a similar origin. Some words are very similar. Learning German was

Visit to the textile factory of KG-Denim Ltd. in India

therefore not a huge challenge for me.
seranews: *You are both really cosmopolitan! Give our readers one last tip for their business relationships abroad.*

Bhuwan: Refrain from thinking in terms of national borders. Make direct contact with your (potential) customers and visit them on a regular basis. And remember: In most countries in the world, a handshake is still worth more than a contract. Trust is the basis of many businesses and trust has to be earned. Follow this advice and conquer the world - just like we have!

Thanh Ha: I endorse wholeheartedly what has already been said. Particularly in Asia, business decisions are made at the interpersonal level. Even if Bhuwan sees things differently: Take a close look at the country that

Customer visit at Heineken in Malaysia

you are visiting. Read up on the customs and special situations. Understand the cultural differences. And what is always well received: Learn two or three sentences or at least words in the national language - this makes a very nice impression.

seranews: *Thank you very much for the interesting chat and the insight into your work. We hope you both have further successful projects and exciting travels ahead!*

Team Netzsch Singapore (trading partner sera)

CLEAN BEER - ALL OVER THE WORLD

Not only Germany is a beer country. Beer also belongs to the most consumed beverages in many other countries. It is thus not at all surprising that large breweries all over the world have a network of subsidiaries that brew beer locally. Beer is also very popular in Southeast Asia. Cambodia Brewery Ltd., a wholly-owned subsidiary of Heineken Asia Pacific, uses sera technology to ensure safe cleaning processes.

The independence monument in Phnom Penh.1953 is testimony of Cambodia's independence from France. The monument, built in 1958, commemorates this event. The main tower of the building is based on the central tower of the famous Angkor Wat temple.

Beer is one of the most popular beverages in Cambodia. Cambodians consume about 6.1 million hectolitres of beer per year or about 38 litres per person. This makes Cambodia one of the countries with the highest beer consumption in the region, even though it accounts for just under half of Germany's per capita consumption. This is one of the reasons why Heineken Brewery as one of the largest breweries worldwide is active in the capital Phnom Penh.

In addition to the actual brewing process, the cleaning process in breweries is also becoming increasingly important. Hygiene is extremely important during the beer production. In addition to aspects such as product safety and beer quality, the focus is increasingly on costs, availability and employee safety. Cleaning processes are therefore an important part of operational controls during the beer production. The use of caustic soda is essential for every cleaning process.

Approximately 50 million tons of caustic soda are produced annually and used in various ways in industry. **sera** has developed a cost-effective system solution specifically for use in the food industry, which has a variable but large demand for alkaline cleaning agents such as caustic soda. This enables the secure and efficient preparation of caustic soda based on sodium hydroxide (NaOH) in solid form (pellets, flakes, pearls or powder) and water.

Breweries use caustic soda on site, particularly because it is cost-effective: Transport, delivery and storage of goods in sacks with undissolved solids is significantly less expensive than ready-made solutions. The extensive building work which would have been required to accommodate the delivery of ready-made solutions in

tankers containing hazardous substances is also unnecessary. Above all, however, the well-known suppliers in the food and beverage industry value the flexibility that they have with their own preparation unit: Solutions are prepared as required and their concentration can be adjusted by increasing or lowering the amount of solid materials added. This reduces the costs and increases the operational reliability.

These factors have also played a part in the decision of Heineken, the operator of the Cambodia Brewery Ltd. in Phnom Penh, to rely on a caustic soda preparation unit from **sera** in its renovation of the brewery in 2016.

The system supplied consists of a stainless steel batching tank, an agitator and a special conveyor that is separate from the batching tank. The conveyor consists of a feed hopper and a stainless steel screw-conveyor that carries the solid materials to the batching tank. With this design, the operating staff is not in the immediate danger area of the batching tank in which the solid matter reacts exothermically with water.

The batching tank has a level indicator with a shut-off valve, a temperature display and a pipe safety cage to prevent accidental physical contact. The prepared solution is transferred into a larger storage tank by a **sera** refilling system.

A **sera** CVD (Compact Vertical Dosing) system with a modular design is also provided to remove the solution from the storage tank and feed it precisely into the cleaning process. Together, the system enables the cleaning process to be carried out in an easier, more flexible and, above all, safer way.

sera is thus able to ensure that beer tastes like beer, even in Cambodia.

WATER FOR CAPE TOWN

After almost three years of drought, the water reserves in Cape Town are depleted. Water consumption has been rationed until further notice. As a result of climate change, it is no longer possible to rely on rain during the winter months. The almost 3.75 million inhabitants therefore have to adjust to water shortages every year. To counteract this situation, the city administration has not only developed rigid guidelines for water use, but also puts its trust in water treatment. sera systems help to produce additional drinking water.

The systems are used during the process of producing drinking water (for human consumption) in one of the waste water treatment plants in Cape Town. Our branch in South Africa manufactures 14 different dosing systems for this purpose. CVD 2 (Compact Vertical Dosing) systems are used, which have to dose a range of chemicals from sodium hydrochloride to 98% sulphuric acid.
The biggest challenge is the treatment of 98% sulphuric acid, as this places special demands on the materials used both in the pump and in the pipes. Not many businesses in South Africa have expertise in this area. The operator was therefore pleased to have found a professional and experienced partner in **sera**, who could implement the project.

The Energy Observer - a **sera** compressor is also on board.

FULL H_2 STEAM AHEAD

The Energy Observer is the world's first ship to become completely independent of energy, without greenhouse gas emissions or fine particles. The former racing boat was converted into a ship fit for the future and, thanks to a mixture of renewable energies and a hydrogen production system that produces carbon-free hydrogen on board from seawater, it operates with electric propulsion. A sera compressor is included! Hydrogen and fuel cells are set to become a team of the future. What is the current situation with the development of technology and global market development?

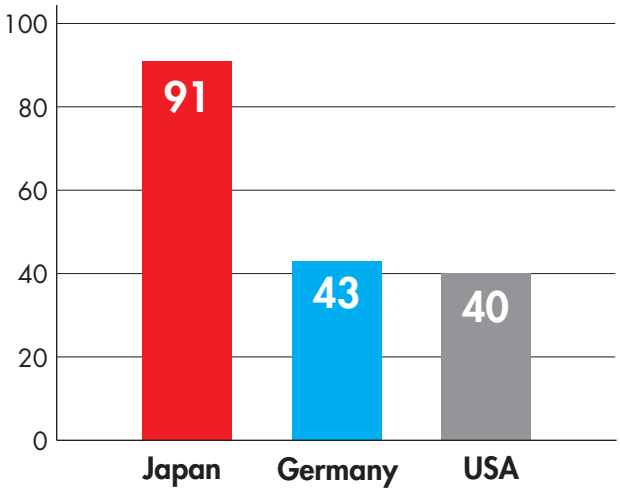
The energy supply of the future is being discussed all over the world - it should be safe, affordable and environmentally-friendly in order to reduce the overall primary energy consumption and CO_2 emissions.
The fuel cell offers tremendous potential for this due to its wide range of applications. It can be used to compensate for fluctuating power generation from renewable energies and will play an increasingly important role in topics regarding electrolysis, such as the energy supply of buildings and industrial processes, but also vehicle propulsion in the future.

The fuel cell technology is anything but new. About 180 years ago, the British physicist, Sir William Grove, revealed that the electrolysis process can be reversed. In 1839 he demonstrated with his 'galvanic gas battery' that electricity could be generated by the so-called 'cold combustion' of hydrogen and oxygen. Unfortunately, his invention failed to catch on at that time. Use in submarines and in space travel in the 50s and 60s also did not bring the breakthrough which had been hoped for, since the stringent technical requirements and high costs prevented the introduction to the market to achieve mass deployment.
Automobile manufacturers, train manufacturers and businesses have nevertheless continued their research into a sustainable and decentralised energy supply. Test runs with hydrogen cars, buses and industrial trucks as well as the first fuel cell trains as of September 2018 are now taking place on the road in German light rail traffic. The first electrically self-sufficient detached house and blocks of flats are possible.

Market development in Germany and worldwide

The German fuel cell industry is on the verge of gaining access to extensive market launches, and in other countries, sights are firmly set on fuel cells and hydrogen, which applies to an even greater extent. According to a study by the Hydrogen Council (13 businesses that want to promote the market launch of hydrogen technology) and McKinsey & Company from 2017, the CO_2 savings potential until 2050 is enormous (up to six gigatons). In contrast, there are also substantial investments that would have to be made for the hydrogen infrastructure (up to 25 billion US $ per year). The key drivers in the industry are Asia, Europe and North America.

According to the above-mentioned study, Japan has the ambitious goal of bringing up to 800,000 fuel cell cars onto the roads by 2025 and installing 320 hydrogen filling stations in order to introduce hydrogen technology throughout the country. In addition to the transport sector, the supply of domestic energy is also on Japan's future agenda. More than 5 million fuel cell systems are to be installed by 2030. China is pursuing equally ambitious targets in this regard. Up to 1 million fuel cell cars will be driving on China's roads by 2030 according



Number of public Hydrogen Fueling Stations in 2017

to the study. A massive investment programme by the government, which provides subsidies for fuel cell cars, transporters, buses and trucks, is expected to help with implementation.

In California, the US state with the strictest exhaust emission limits, fuel cell cars also play an important role in meeting the strict requirements of the 'zero emission programme' that has been in place since 1990. In addition, tax concessions have helped to introduce stationary megawatt fuel cells to the market. Forklift trucks with fuel cell drive technology for logistics centres are also in high demand. If we consider Europe, it is clear that a large part of the demand initially comes from demonstration projects for a wide range of applications. It is interesting to note in this context, however, that the development of fuel cell applications for trains, trucks and ships stands out globally. The world's first fully energy-autonomous ship started from Paris in June 2017 and has been sailing across the world's oceans ever since.

Energy Observer as a showcase project

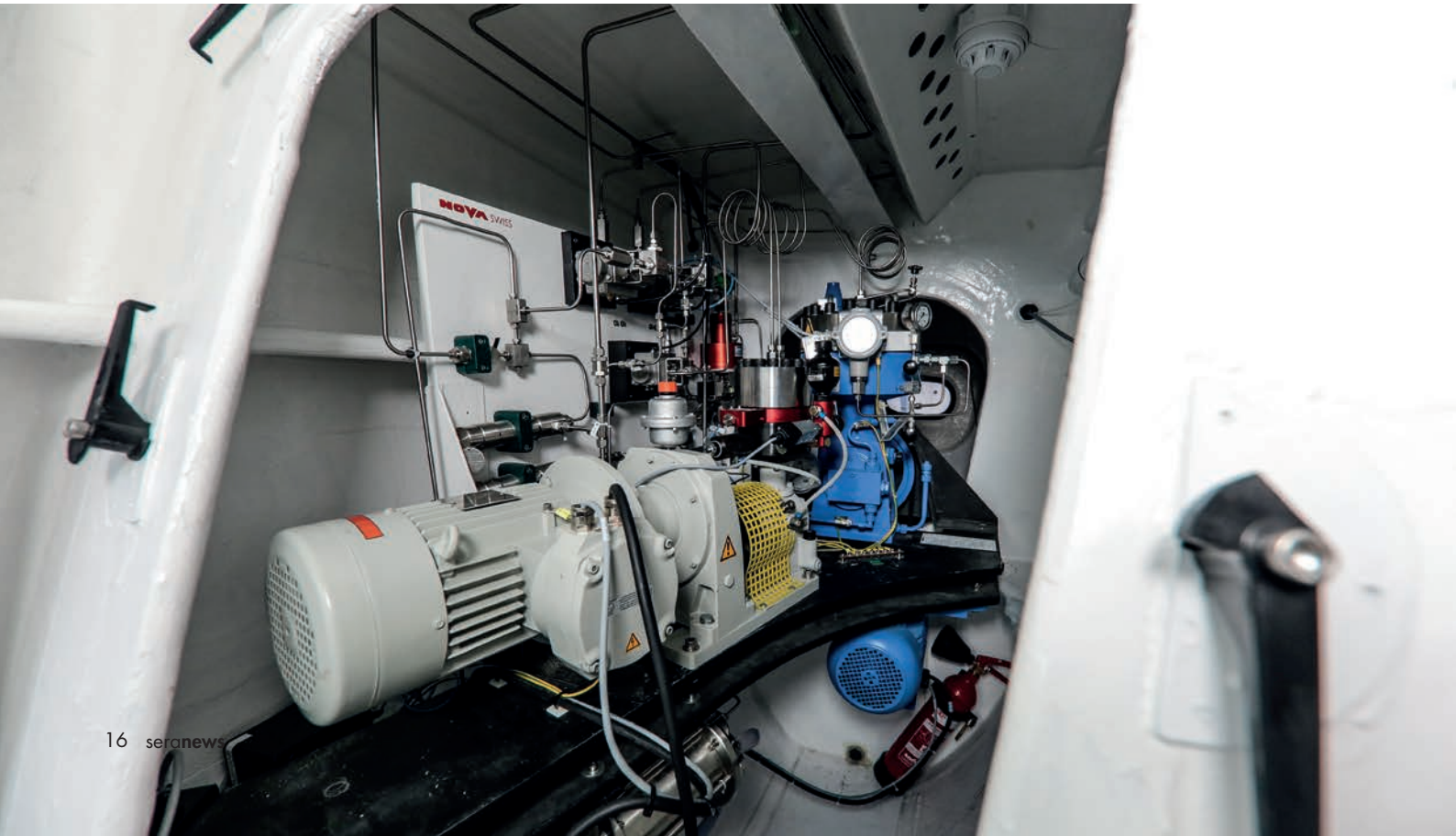
The Energy Observer is the first ship in the world to operate completely autonomously in terms of energy, without emitting any greenhouse gases or fine particles. The former racing boat was converted into a ship fit for the future and, thanks to a mixture of renewable energies and a hydrogen production system that produces carbon-free hydrogen on board from seawater, it operates with electric propulsion. The ship of the future started its world tour at the end of June 2017.

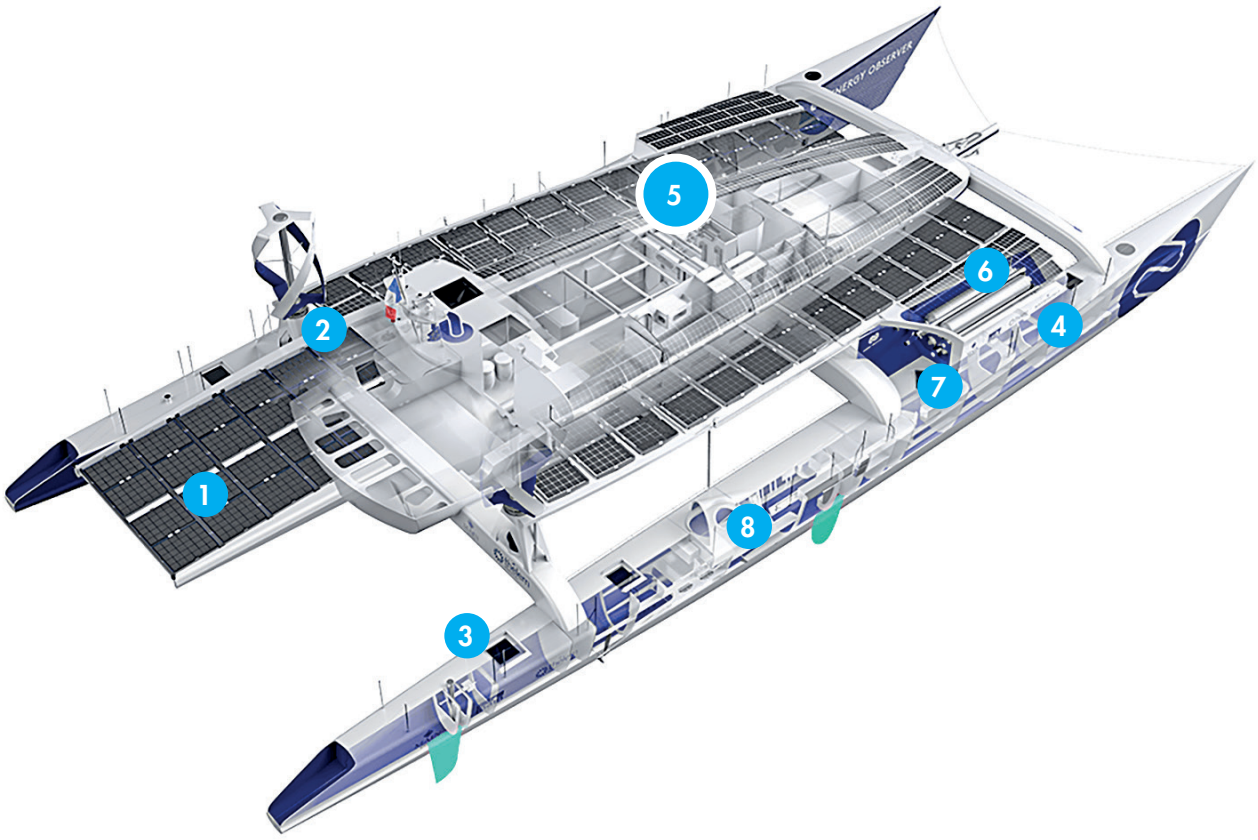
The crew and the 30 metre long and 12 metre wide giant catamaran started in Paris, initially heading for twelve stations in France. In 2018, the Mediterranean Sea was on the touring schedule to reach Northern Europe (including Hamburg) in 2019, then North and South America, Oceania and Asia, and in 2022 to return to the home port of Cherbourg via South East Asia and Africa.

A **sera** product is fortunately also on this journey around the world to contribute something to the exploration of the energy world of the future. The **sera** compressor forms a compression system together with a compressor from our distribution partner Nova Swiss. This compresses the hydrogen produced from seawater by an electrolyser, first from 30 to 160 bar by means of a 'booster' (from **sera**) and then in a second stage to 350 bar which is then stored. As soon as all batteries are charged by wind and solar energy, the electrolyser is driven by excess electricity. If required, the stored hydrogen is converted back into electricity by a fuel cell.

For six years, the Energy Observer will travel to 50 countries and, during its journey and 101 stopovers, will meet people who have the common goal of making our world a cleaner place.
The 'Coradia iLint' from Alstom also had a world premiere this year in September, because it was the first hydrogen train to receive approval for passenger use in German rail traffic and is now running regularly as

***sera** compressor (blue) in the Energy Observer's side engine room*





Construction of the Energy Observer: 1 - Solar panels, 2 - Wind turbines, 3 - Seawater desalination, 4 - Electrolysis, ***5 - sera compressors****; 6 - Hydrogen tanks; 7 - Fuel cell; 8 - Electric motors and ion batteries*

a pilot project on a 100 km route between Cuxhaven, Bremerhaven, Bremervörde and Buxtehude. The development of the train was subsidised by the Federal Government with eight million euros as part of the National Innovation Programme Hydrogen and Fuel Cell Technology (NIP).

The current coalition agreement also stipulates that this innovation programme will be continued and that hydrogen technology will be advanced in many different areas of application. Together with the plans from Asia and North America, there are positive signs that this competitive technology will soon be ready for the market.

sera is an innovator in the field of hydrogen

Developments in hydrogen technology have also been well and truly underway at **sera** for years. Our products can be used in each and every range of application for fuel cell technology. From hydrogen filling stations for the transport sector (cars, trucks, buses, industrial trucks, ships and trains) to power to gas compression stations and home energy systems.

ENERGY OBSERVER

The Energy Observer is the world's first hydrogen ship. It set sail for the first time in April 2017 off Saint-Malo in France.
It is a solar-wind-hydrogen-catamaran. It is driven by two electric motors, each with 41 kW, which are supplied with the required electricity using various technologies. The catamaran is initially equipped with 130 m^2 of solar cells with an output of up to 21 kW and two wind turbines with an output of 1 kW each.
The Energy Observer also has an electrolyser and a hydrogen tank on board to store energy for night trips and unfavourable weather conditions. It works using reverse osmosis with desalinated water and can produce up to 4 m^3 hydrogen per hour. The reconversion of electricity then takes place using an integrated fuel cell system.
The Energy Observer is on a 6-year world tour planned from 2017 to 2022, visiting 50 countries and 101 ports of call, including historic ports, nature reserves, endangered ecosystems and international events.

2017

sera products have always been in use worldwide. In the process, it is irrelevant if a dosing system in Chile, a compressor in Thailand or standard pumps in Sweden are involved. Due to our constant internationalisation and our reliable sales network, we are able to deliver to every corner of the globe on time, every time. More and more customers therefore trust our durable and reliable products. We were thus able to reduce the number of white spots on the map once again last year and supplied our products to more than 90 countries worldwide. And who knows, maybe to Greenland soon …

ON THE HUNT FOR THE LAST WHITE SPOTS ...

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SERA WINES & DINES INTERNATIONALLY

In our case, working internationally does not only mean that we are present worldwide and have customers and partners all over the world - working internationally for us also means bringing the world to Immenhausen. The headquarters in Immenhausen is home to 14 different nations. This does not only express the diversity in our business, but it also makes us more open to new influences. We are all different and we use this to learn from each other and to become a bit better every day. Communication and the different approaches to dealing with things are essential for our business. For this issue of seranews, we invited our international colleagues to a brunch together and asked them to bring typical local food.

Diego and César, two Mexican brothers, Agnieszka (Poland), Anna (Kazakhstan), Denys (Ukraine), Thanh Ha (Vietnam), Akram (Afghanistan), Zakarie (Somalia), Cedric from France and our South African Englishman Neil attended the international brunch.

Their jobs with us are as varied as their origins: From the mechatronics trainee to the dosing technology developer, service technician and project manager, everything was represented. We were seated at a richly laid table with an abundance of food and began to feast. Quickly a conversation developed that made it clear that we all knew a great deal about our colleagues, but far from everything. Did you know, for example, that it is common practice in Ukraine for parents to force their children to study, even defining what they study? Or that the spiciness of Somali sambusas is quite different from that of Vietnamese dips? Or that Germany is one of the few countries where shops are closed on Sundays and public holidays?

No? This was also what we experienced. Many similarities, but many differences also emerged. The reasons for leaving home were very different. Akram, who had to flee Afghanistan, certainly had the worst reasons. Most of the colleagues aspired to a better life and were aware

of the opportunities they would have access to in Germany - but they also knew that diligence and work ethic were essential. The remaining colleagues with a migration background followed their hearts: Love led them to Germany and finally to **sera** in Immenhausen. For some of them, Germany was also not the first stop outside their country of birth. Many had already lived and worked in Great Britain, Taiwan, Switzerland, China and other countries.
Very similar, on the other hand, were the (true in part)

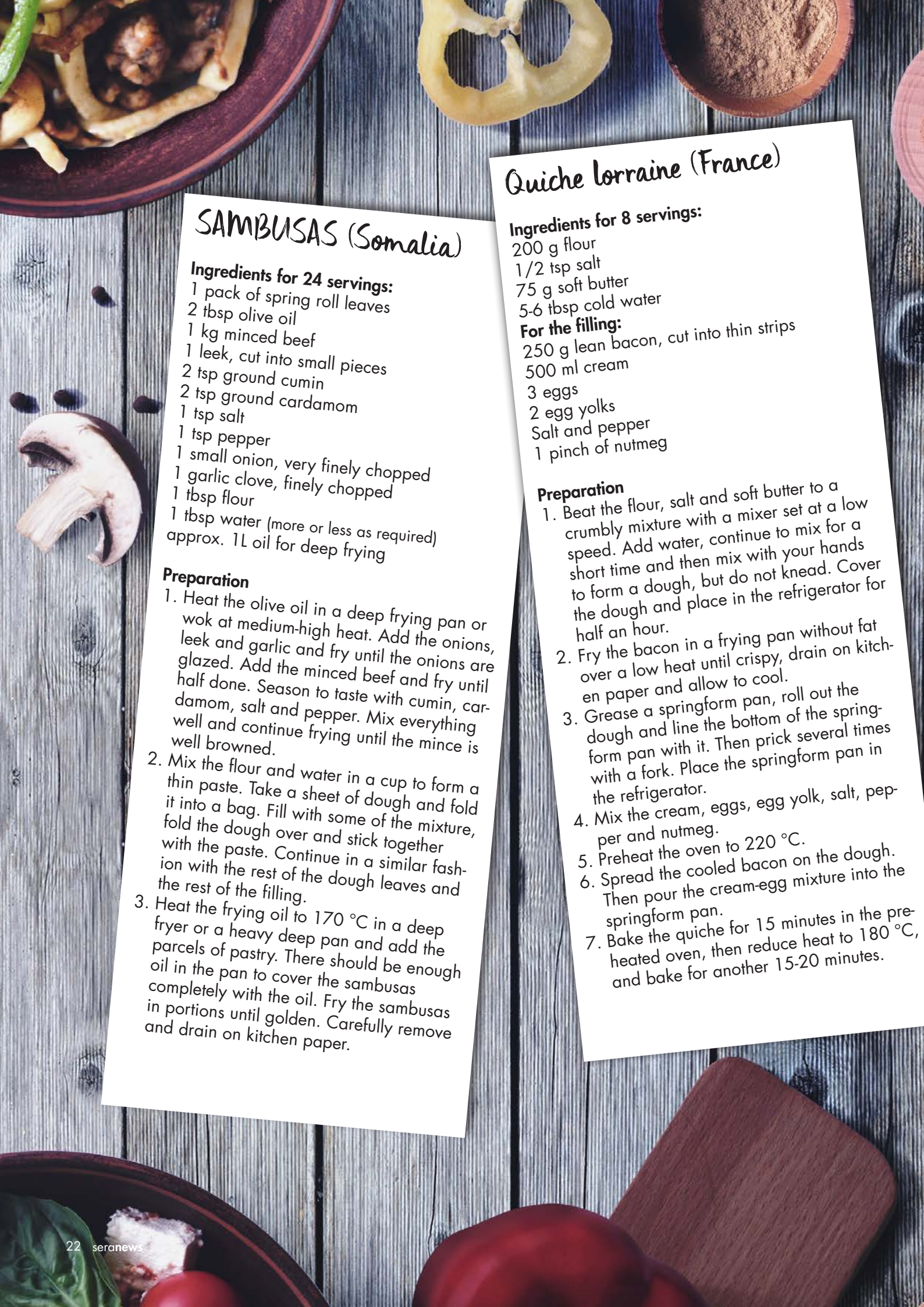
prejudices concerning the Germans: The Germans are always punctual, diligent and accurate. They love their rules (waste separation!), their associations and their motorways. They whine or moan about almost everything else. Speaking of motorways: Each of the male colleagues collected rows of speed camera tickets at the start of his time in Germany - fast driving proved to be too tempting.

German as a foreign language was a big challenge for almost all colleagues, in particular the pronunciation and the difficult grammar. The only exception is Neil,

who speaks Afrikaans fluently - the national language of South Africa, which originated from German. However, this leads to him sometimes getting confused and using words in Afrikaans when he is speaking German.

Unfortunately, almost all colleagues in Germany have already been confronted with xenophobia, some more, others less so. But they all agreed: At **sera** they have never been discriminated against on the basis of their origin. They are all glad that we have an open atmosphere in which everyone is there for each other.
Diversity is important to us, that is what we stand for. Do what we do and bring the far reaches of the world right

to your doorstep. Just try one of the recipes from our **sera** employees, which you will find on the next page. We hope you enjoy your meal!



SAMBUSAS (Somalia)

Ingredients for 24 servings:
1 pack of spring roll leaves
2 tbsp olive oil
1 kg minced beef
1 leek, cut into small pieces
2 tsp ground cumin
2 tsp ground cardamom
1 tsp salt
1 tsp pepper
1 small onion, very finely chopped
1 garlic clove, finely chopped
1 tbsp flour
1 tbsp water (more or less as required)
approx. 1L oil for deep frying

Preparation

1. Heat the olive oil in a deep frying pan or wok at medium-high heat. Add the onions, leek and garlic and fry until the onions are glazed. Add the minced beef and fry until half done. Season to taste with cumin, cardamom, salt and pepper. Mix everything well and continue frying until the mince is well browned.
2. Mix the flour and water in a cup to form a thin paste. Take a sheet of dough and fold it into a bag. Fill with some of the mixture, fold the dough over and stick together with the paste. Continue in a similar fashion with the rest of the dough leaves and the rest of the filling.
3. Heat the frying oil to 170 °C in a deep fryer or a heavy deep pan and add the parcels of pastry. There should be enough oil in the pan to cover the sambusas completely with the oil. Fry the sambusas in portions until golden. Carefully remove and drain on kitchen paper.

Quiche lorraine (France)

Ingredients for 8 servings:
200 g flour
1/2 tsp salt
75 g soft butter
5-6 tbsp cold water
For the filling:
250 g lean bacon, cut into thin strips
500 ml cream
3 eggs
2 egg yolks
Salt and pepper
1 pinch of nutmeg

Preparation

1. Beat the flour, salt and soft butter to a crumbly mixture with a mixer set at a low speed. Add water, continue to mix for a short time and then mix with your hands to form a dough, but do not knead. Cover the dough and place in the refrigerator for half an hour.
2. Fry the bacon in a frying pan without fat over a low heat until crispy, drain on kitchen paper and allow to cool.
3. Grease a springform pan, roll out the dough and line the bottom of the springform pan with it. Then prick several times with a fork. Place the springform pan in the refrigerator.
4. Mix the cream, eggs, egg yolk, salt, pepper and nutmeg.
5. Preheat the oven to 220 °C.
6. Spread the cooled bacon on the dough. Then pour the cream-egg mixture into the springform pan.
7. Bake the quiche for 15 minutes in the preheated oven, then reduce heat to 180 °C, and bake for another 15-20 minutes.

Manti (Kazakhstan)

Ingredients for 8 servings:
500 g flour, 1 egg
Approx. 450 ml lukewarm water, 1 tsp salt
For the filling:
500 g mince
4 onions
Salt, pepper

Preparation
1. Knead the dough and roll out small circles of dough on a floured surface (7 cm diameter).
2. Cut the onions into small pieces and mix them with the mince. Season with salt and pepper.
3. Place approx. 1 tbsp filling on each circle of dough, then form into a pocket.
4. Cook in a steam cooker for 40 minutes.
5. Serve with sour cream or tomato sauce.

Frijoles (Mexico)

Ingredients for 8 servings:
800 g kidney beans
80 g onions
1 dried chilli pepper
3 tbsp olive oil
1 garlic clove
1 tsp salt
A little pepper
75 g bacon/diced ham
50 ml water

Preparation
1. Chop the onions, garlic and chilli pepper into small pieces.
2. Blend all ingredient to a smooth purée in a large pot.
3. Bring to simmer over medium heat for approx. 5 minutes. Stir constantly in the process.
4. Use the bean purée as a side dish or a spread for burritos.

SERA WINES & DINES INTERNATIONALLY

WINTER MAGIC IN WINTERBERG

Germany is more popular as a tourist destination than ever before. The number of overnight stays by visitors from Germany and abroad rose by three per cent in 2017 to a new record level of 459.6 million (Federal Statistical Office). The percentage of international guests even rose by four percent to 83.9 million overnight stays by visitors. There are a variety of reasons for this: business travellers and tourists from all over the world are attracted to Germany due to the exceptional infrastructure, which makes it easy to reach, together with very good value for money, many sights and impressive landscapes. Winterberg, a winter sports region in the Sauerland region, has also recorded significant growth in terms of overnight stays. However, the effects of the tourism boom have posed specific challenges for the municipality. We have resolved these together.

Winterberg, a centre of tourism in the Sauerland region with about 13,000 inhabitants in 15 districts, has experienced a development boom in recent years and, from the point of view of tourism, has all the features of a typical destination in the central German uplands. The municipality is home to the largest interconnected ski area north of the Alps and thus doesn't just attract German holidaymakers. Winterberg is particularly popular with our Dutch neighbours. The central location ensures a quick journey, the landscape is beautiful in all seasons, even more so in winter, and invites you to participate in a number of outdoor activities. To give winter sports enthusiasts 80 days of guaranteed snow a year, a plan to make snow was drawn up in the 1990s against the backdrop of a weather-related slump in winter sports tourism. This scheme worked: in 2012, Winterberg recorded more than 1 million overnight stays for the first time - and that was in commercial hotels alone. Unrecorded overnight stays with small and private accommodation providers and about 1.5 million day visitors a year should be added to this.
Of course, this had consequences for the local sewage system. Stadtwerke Winterberg AöR (Winterberg Public Utilities) operates two sewage treatment plants which struggle especially in winter with sudden additional loads because of the increase in tourism.

Winterberg Public Utilities built on our expertise to overcome two particular challenges in this connection:
On the one hand, the large number of day visitors and tourists has changed WC usage and the quantity of urea in sewage has increased significantly. As a result, the amounts of carbon and nitrogen in the sewage are out of proportion. In normal public sewage, the ratio of carbon to nitrogen is 100:20, while in Winterberg it hovers around 80:40. This disproportionate ratio leads to a shortage of carbon in the denitrification period. Acetic acid is added to the sewage as a source of carbon to compensate for this. This supports the breakdown of nitrates into elemental nitrogen and the ratio of carbon to nitrogen is restored to the level required.

On the other hand the sewage also has very low temperatures as a result of weeks of snow melting in Winterberg, which cause poor settling behaviour of the sewage sludge in the secondary clarification process. The addition of polymer flocculating agents improves the bonding and settling behaviour.

sera provided a suitable solution for both challenges: The two Winterberg sewage treatment plants were each supplied with a complete solution in an insulated hazardous material container with ventilation and heating, which in turn included two dosing systems. A DAV2 dosing system with spray protection doses the acetic acid from a container into the denitrification system. Two iSTEP S50 dosing pumps (delivery range of 0.1 ml/h to 50 l/h each), supported by a controller, ensure that very large quantities of acetic acid can be added if necessary, but it is also possible to add small quantities of acetic acid continuously in the denitrification process.
Both turn-key containers also have a smart CTD dosing system to prepare and dose polymer flocculating agents. The polymer is prepared from a concentrate and water, and is added to the feed for the secondary clarification system. The polymer is added automatically, depending on the turbidity in the secondary clarification system. Here, too, we used two iSTEP S50 pumps in order to offset fluctuations as effectively as possible. And this also facilitates easy maintenance and parts supply.
The customer's requirements were very unusual in this case. However, the container solutions developed jointly with Stadtwerke Winterberg now ensure perfect wastewater treatment. These solutions also ensure that tourism continues to boom in Winterberg.

OUR WAY TO INTERNATIONALISATION

1950

WORLDWIDE PATENT
Development of the first double diaphragm pump in Europe

1952

FIRST FOREIGN SALES
First distribution partners in Austria, Switzerland, Netherlands and Norway

COMPRESSOR TECHNOLOGY
Development of the first single-stage metal diaphragm compressor for gases in Europe

1958

1960s

EXPANSION INTERNATIONAL BUSINESS
Expansion of the international distribution network in France, Belgium and Luxemburg

1970s

EXPANSION INTERNATIONAL BUSINESS
Expansion of the international distribution network in Denmark, Spain and UK

1980s

EXPANSION IN EUROPE
Expansion of the international distribution network to Southern, Northern and Eastern Europe

1990s

EXPANSION OVERSEAS
Expansion of the international distribution network to Asia, Middle Easr and Africa

2000s

2007

FOUNDING SUBSIDIARY IN UK
The first European subsidiary **sera ProDos UK Ltd.** in Peterborough is founded

2010

FOUNDING SUBSIDIARY IN SOUTH AFRICA
sera ProDos SA (PTY) Ltd. in Johannesburg is the first subsidiary founded outside Europe

2016

FOUNDING SUBSIDIARY IN SPAIN
sera ProDos S.L. in Castalla is founded

2018

FOUNDING SUBSIDIARIES IN AUSTRIA and PASSAU
With **sera Technology Austria GmbH** and **sera Vertriebsservice GmbH** in Passau two new subsidiaries are founded in one year

TO BE CONTINUED ...

STAR PUMP ALLIANCE

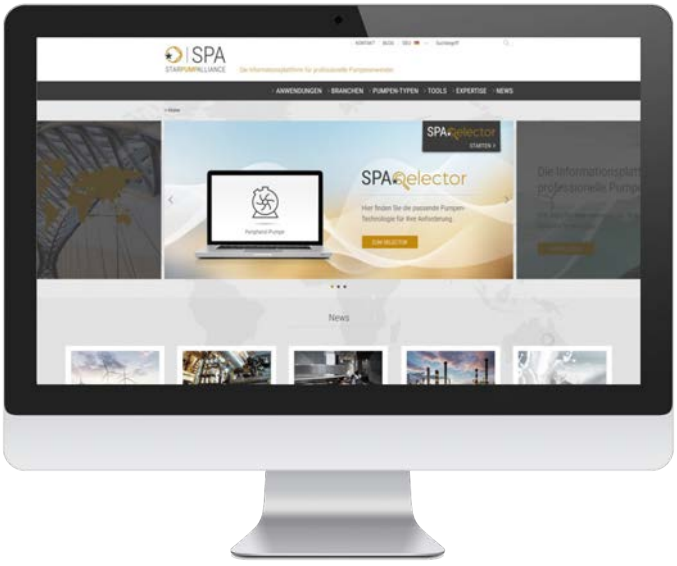
sera has been a Star Pump Alliance (SPA) member since the middle of this year. That makes us a strategic partner in a network of the world's leading pump manufacturers. The aim of the Star Pump Alliance is to make it easier for professional pump users to choose precisely the right pump technology for their applications.

When looking for application-specific and usually personalised information on pump technology, professional pump users are often dissatisfied with results from conventional search engines since these do not meet the requirements of industrial applications.

What the Star Pump Alliance offers is something to bridge this gap. "The benefit to the customer always takes centre stage for us. Besides extensive information about industries, applications and technology, our Internet portal **www.starpumpalliance.com** also offers numerous tools to help with individually choosing pumps, as well as a unique multi-vendor digital technology selector. This provides website visitors with a suggestion as to suitable pump technology for their application based on the usage characteristics they enter," says Kai Stegemann, Managing Director of Star Pump Alliance GmbH, explaining the benefits for users. Individual pump technology recommendations are made using transparent technical criteria. Users can keep track of how the input data affects the search result in the selector at all times. This result enables them to contact the appropriate supplier directly, saving a lot of time and effort in the selection process.

In addition to **sera**, numerous, well-known pump manufacturers as well as market and technology leaders with decades of expertise are responsible for the portal, each with the common goal of substantially simplifying a complex process for pump users. **sera** covers the technology of diaphragm dosing pumps.

We see the Star Pump Alliance as a further building block to help our customers solve their specific problems, especially in the international arena.



SERVICE IN THE US

Our products are in use worldwide. We strive to guarantee impeccable service - on time, every time. A travelogue from our colleague Markus Merten from the US.

As a service coordinator, I am usually the man behind the scenes. I coordinate the service assignments of my colleagues, accept customer requests and work on back-end solutions. I also take on service assignments myself of course, but mostly in Germany.

As a rule, trading partners are chosen for international assignments. These partners, in turn, maintain, repair or exchange our installed products at the end customer's premises. I, for my part, have also already been on some assignments in other European countries: In Poland I worked for a municipal waste disposal company. In the Netherlands there was a maintenance assignment, which I combined with a training course for our trading partner Kalteren. And already in July we had the first service assignment for our new sales branch South in Austria. I now have an assignment in the US.

Day 1 - Sunday

The Lufthansa machine, which was supposed to take me to Chicago, took off on time at exactly 5.15pm in Frankfurt am Main. I had made myself comfortable at my window seat and was looking forward to the new experience. With the obligatory tomato juice, a little in-flight entertainment and a night cap, the more than nine hours of flight passed faster than initially feared.

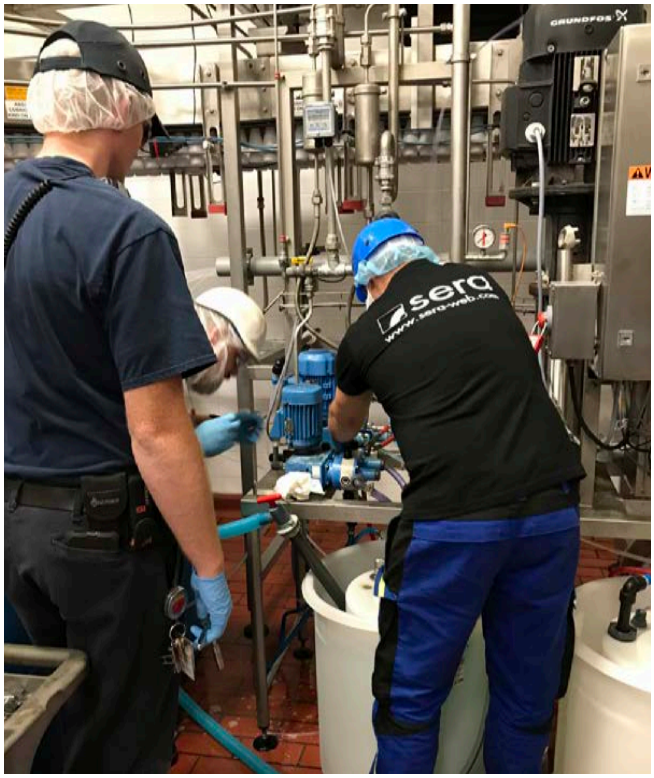
My luggage, including tools and training material, had arrived in Chicago with me. The elaborate customs control lasted forever, but only put a slight dampener on my mood. It was after 8pm local time and the jetlag was already noticeable - in Germany it was at the dead of night. However, I still had my onward journey ahead of me: I continued to make my way to Menomonee Falls, Wisconsin in a rental car. An impressive ride - in an

enormous car. Everything was enormous! The streets, the buildings, the vehicles. Bigger is better - I had already prepared myself for that. I missed the German motorway, but only for a short time. With 'my' pickup and its power I could have really stepped on the gas! This is unfortunately not allowed on American roads. After 130 km and about an hour and a half drive I checked into my hotel in Menomonee Falls, ate a snack and fell asleep almost immediately.

Day 2 - Monday

My internal clock was set to Germany. I was very restless the whole night, which ended much too early. And yet I was not tired, but simply euphoric and full of expectation of what the day would bring. After breakfast I got into 'my' pickup and drove to Centec, our long-time trading partner in the US. There I met Philippe, Lisa, Aaron and Nathan. After a very friendly welcome and a short tour we started with the planned training day: Using a dosing pump C409.2-350e, I showed them not only how to disassemble it mechanically, but also how to troubleshoot and how to recalibrate the pump. In the beginning it was not easy for me to hold the training in English, but the longer I spoke, the easier it became. It did of course help that Philippe is German and helped me out every now and then if I failed to find the right English term. The training lasted until the afternoon and was only interrupted by a short, though not necessarily light lunch with colleagues from Centec.

I used the early evening for a jogging tour through Menomonee Falls - sport is a must! It was a quaint town with about 35.000 inhabitants, a variety of greenery and quite a number of German shops, restaurants and inhabitants. Menomonee Falls was clearly influenced by the adjacent German town to



the south. The air was good, my body thanked me after the flight and jet lag for the routine it was used to and my legs carried me through the city for a good hour.
Feeling fresh after a shower, I then accompanied Aaron to dinner. He took me to a typical American diner. Yes, it was exactly as I had imagined. Wood, patriotism and food in abundance. Aaron told me about life in Menomonee Falls, about working at Centec and I told him what it was like to live in Germany and work at **sera**.
For a moment I reflected briefly on whether the burger and the French fries in front of me were really for me or whether something went wrong when I ordered it - hungry teenagers in a group could have eaten to their heart's content! No, it was all for me. And even though it was a fabulous burger, I struggled to even manage half. Aaron thought it was funny and asked how 'tiny' the servings were in Germany. We laughed, had another beer and then Aaron drove me back to the hotel. It was there that I realised how tired I was. My head had hardly touched the pillow when I fell asleep.

Day 3 - Tuesday

Aaron picked me up after I had enjoyed an abundant breakfast. Together we drove to end customer Gehl Foods, a producer of dairy products, i.e. a wide variety of milk beverages. Our pumps from the ZR409.1-90e series are used there for various purposes, such as dosing an acid medium based on nitric acid or an alkaline detergent. Both are used in the cleaning process in the plants. A defoamer is dosed in another process step.
Now it was time to service the pumps - the main reason for my trip to Menomonee Falls. I serviced the pumps together with Aaron and Jake and Cliff, two Gehl Foods production staff - which of course took a relatively long time. I explained every step so that the employees of Gehl Foods and Centec would be able to service the pumps themselves in the future.
So my second day in Menomonee Falls flew by in a flash - a quick dinner together with lots of funny conversations, a few beers and giant servings of food. I then went to bed. After all, I had to get up very early the next morning.

Day 4 - Wednesday

Why? Because not all of our pumps could be serviced at Gehl Foods on Tuesday. So I was back in the production area at 6.15am, with Jake and Cliff at my side, servicing the pumps while I was training the guys on the pumps at the same time. It was really a lot of fun! And yet I had to make my way back to Chicago around 10.30am.

After all, I also had a service appointment there - in the Central Brewery. From the hotel I took the underground railway and bus this time. I had already dropped off 'my' pickup. Once on-site, I met up with Andreas Miller, master brewer at the Central Brewery and a German. This, of course, made work much easier for me. Together we inspected the two CVD1 dosing systems, each of which was fitted with an R409.2-50e, and I was able to provide assistance for future maintenance work. The working day ended for me with a tasting at the bar counter of the Central Brewery. A very pleasant evening after work!

Day 5 - Thursday

Today I had a day off in Chicago! That meant: Time to be a tourist. I started with a skyline trip by ship: I could thus take in and experience the city's gigantism. I found the architecture of the third largest city in the US incredibly impressive, as I did the transition between the city and the wide parklands at Lake Michigan.

After the excursion into the water, I rented a bike and explored the area. I drove along the bank of Lake Michigan, through the parks. For lunch I stopped at a nice diner at Millennium Park, right next to 'The Bean'. Delicious food with a view! I then pedalled for a while and had a look at Chicago, before I fell into my hotel bed quite early and completely exhausted.

Day 6 - Friday

Date of departure. I checked out and had breakfast in a small Chinese bakery in Chinatown, where my hotel was located. Invigorated, I made my way to the airport with the underground railway. I walked a little bit through the shops at the airport, ate a snack and then it was time to board the plane back home. Tomato juice, on-board programme and sleep - that is how I spent the nine hours of my return flight. I finally landed in Frankfurt on Saturday morning at around seven - and was at home with my family just in time for breakfast at ten.

It was a special service assignment for me, which I will certainly remember for a long time to come. I met some great people along the way and I can only endorse the comments made about the friendliness of Americans. The same goes for standards: Yes, everything is definitely much bigger in the US. I know that I can rely on my English and can also hold good, interesting training courses in this foreign language. Although I would always be prepared to travel to the US for a work assignment in the future, I know now that I will always be happy to come home to the tranquil city of Kassel.

SUCCESS WITH THE PRIZE FOR SMALL AND MEDIUM-SIZED ENTERPRISES

No other business competition in Germany has received such a large response, which has lasted for more than two decades now, as the 'Grand Prize for Small and Medium-Sized Enterprises', which has been awarded by the Oskar Patzelt Foundation in Leipzig since 1994. In addition to promoting networks in small and medium-sized businesses, the primary aim of the competition is, above all, to gain public recognition and acknowledgement of the achievements of the nominated businesses; the prize is not endowed. sera received an award this year as a finalist.

The German middle class is a special success story. It is regarded as the number one jobs engine, as a driver of innovation or simply as the recipe for the success of the German economy. It cannot simply be copied elsewhere. This would require special types of contractors and structures that have grown over a period of more than 100 years. All this is what makes it so special - the secret of the German middle class. The basis for the success of German businesses abroad is also always driven by medium-sized businesses, which often set out as 'hidden champions' to conquer international markets.
The term 'German Mittelstand' is therefore a word created by the Anglo-Saxon media to describe the German economy, which is characterised by millions of small and medium-sized companies.

Medium-sized companies usually also offer their staff more stability than many large corporations, as many statistics show. This became particularly clear during and after the financial crisis. The German middle class was celebrated as a jobs engine, as that part of the economy that held on to its employees, but then relatively quickly switched back to expansion. Although small and medium-sized enterprises only generate 45 percent of all

sales, they secure 80 percent of all training positions and pay 60 percent of all taxes and levies.
Against this background, the 'Grand Prize for Small and Medium-Sized Enterprises' is a special feather in the cap of all businesses awarded with prizes.

"As the Economics Minister for Hesse, I am proud that many companies and personalities from our state have again been nominated this year for the Oskar Patzelt Foundation's Grand Prize for Small and Medium-Sized Enterprises. The nomination is a huge honour in itself. I therefore congratulate the nominees as well as, of course, the businesses awarded with prizes," said Tarek Al-Wazir, Hessian Minister of Economics, Energy, Transport and Regional Development.

Only third parties can nominate medium-sized businesses for this competition. The **sera** group was nominated by Esther Dilcher (MdB), member of the Bundestag, by Board Xperts GmbH and by the Association of Metal and Electrical Enterprises in Hesse.
All nominated businesses were evaluated comprehensively according to the criteria: overall development of the business, creation and safeguarding of jobs and training positions, innovation and modernisation, commitment in the region as well as service, customer focus and marketing. In the second round of the competition, an independent jury of experts then decided on the winners and finalists.

During a ceremonial gala event in Würzburg, the Oskar Patzelt Foundation awarded the Grand Prize for Small and Medium-Sized Enterprises to the states of Bavaria, Hesse, Thuringia and Baden-Wuerttemberg. A total of more than 4,900 businesses were nominated nationwide. Of the 250 businesses in Hesse, five finalists were awarded prizes.
The **sera** group is proud to have been honoured as one of the finalists. This award proves that the respected

jury of experts counts the **sera** group among the TOP FIVE small and medium-sized businesses in Hesse. "This is a special appreciation of our work and affirmation that we have set the right course for the future with our strong values and clear strategy," the Managing Partner of the **sera** group, Carsten Rahier said happily. "This is a credit to everyone at **sera**. Each of them has done his or her part to ensure that the **sera** group is where it is today, and that it is where it belongs." "The Grand Prize for Small and Medium-Sized Enterprises is the most prestigious award for companies of our size, and being among the finalists here is an absolute honour! It is proof that, with our mix of tradition and innovation, we are operating exactly in the right way and that we are creating real added value," added Stefan Merwar, Authorised Representative of the **sera** group and Head of Marketing and Communication. With this, the **sera** group continues its success story.

FACT CHECK

'The Grand Prize for Small and Medium-Sized Enterprises'

The Oskar Patzelt Foundation has been awarding the Grand Prize for Small and Medium-Sized Enterprises since **1994** and aims at promoting small and medium-sized businesses according to the motto: 'healthy middle class - strong economy - more jobs'.

The Oskar Patzelt Foundation was set up as a non-profit organisation (NPO). More than 200 personalities from all areas of social life are currently actively involved in the foundation committees on a voluntary basis. It was awarded the Federal Cross of Merit in 2008 and is also certified in accordance with DIN ISO 9001:2015 as is the **sera** group. In 2012, the prize reached the Top 10 of the European Commission's 'European Enterprise Promotion Award'.

A total of **4,917** businesses were nominated for the 24th competition in 2018. Together, these businesses employ around 900,000 people and thus paint an impressive picture of the strength and importance of German small and medium-sized businesses. In the second round of the competition, **742** businesses ultimately made it onto the 'jury list'.

sera was finally awarded a prize as a finalist for the Hesse competition region, together with four other businesses.

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