HSE·AG

2022

Annual Report

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The Hombrechtikon Systems Engineering AG 2022 Annual Report covers the financial year from 1/1/2022 through 12/31/2022.

Gender-neutral pronouns and role descriptions have been used whenever possible and are to be understood in all cases.

"The greatest scientific discovery was the discovery of ignorance. Once humans realized how little they knew of the world, they suddenly had a very good reason to seek new knowledge, which opened up the scientific road to success."

Yuval Noah Hariri

Driving innovation for our clients – this is what inspires us

HSE•AG achieved double-digit growth in 2022. CEO, Michael Collasius, and Chairman of the Board, Hans Noser, see the growing trust of clients and a company culture based on autonomy as the reasons for accelerated growth despite the difficult global environment. In the sixth year since incorporation, more and more successful client projects have been implemented and word-of-mouth advertising is starting to take off.

Mr. Noser, 2022 was a turbulent year in many respects. What, in your view, are the most important developments in the life sciences industry?

Hans Noser: For me, the most important new development is the convergence of diagnostics and treatment. Until recently, personalized medicine was still using diagnostic methods to determine which of the available chemotherapies would be most suitable for a particular patient. The current trend is to produce an individual drug based on diagnoses, such as an RNA vaccine against the specific cancer of someone who is sick. This convergence will increase more and more and may develop in a number of stages. This will require, among other things, automated diagnostic solutions in hospitals.

Michael Collasius: This is what is so fascinating about our industry: New opportunities and topics are continuously emerging. In 2017, as we started our activities as an independent company, the focus was on the general availability of economical whole genome sequencing while the immense possibilities of the CRISPR/Cas method were becoming apparent through the initial applications. In 2019, it started to become clear that, in the future, all the synthetic biology processes will need to be automated to achieve the necessary reproducibility and to enable them to be used widely. In 2020, we helped to bring one of the first spatial analysis methods to market. This can be used to visualize the transcribed mRNA molecules in individual cells both spatially and temporally. We share this fascination of always working on the next scientific and technical breakthrough with our clients.

Mr. Collasius, how would you sum up the past year for HSE·AG from an economic perspective?

Michael Collasius: Even though 2022 was a particularly difficult year for the global economy due to the Ukraine war, soaring inflation and problems with global supply chains: for HSE·AG, it was the most successful year in its history. Therefore, it fits our growth pattern so far perfectly. We have been increasing year by year since our inception at the end of 2016. However, 2022 stands out insofar as growth has once again accelerated significantly at 23 %.

> "The fascination of always working on the next breakthrough is something we share with our clients."

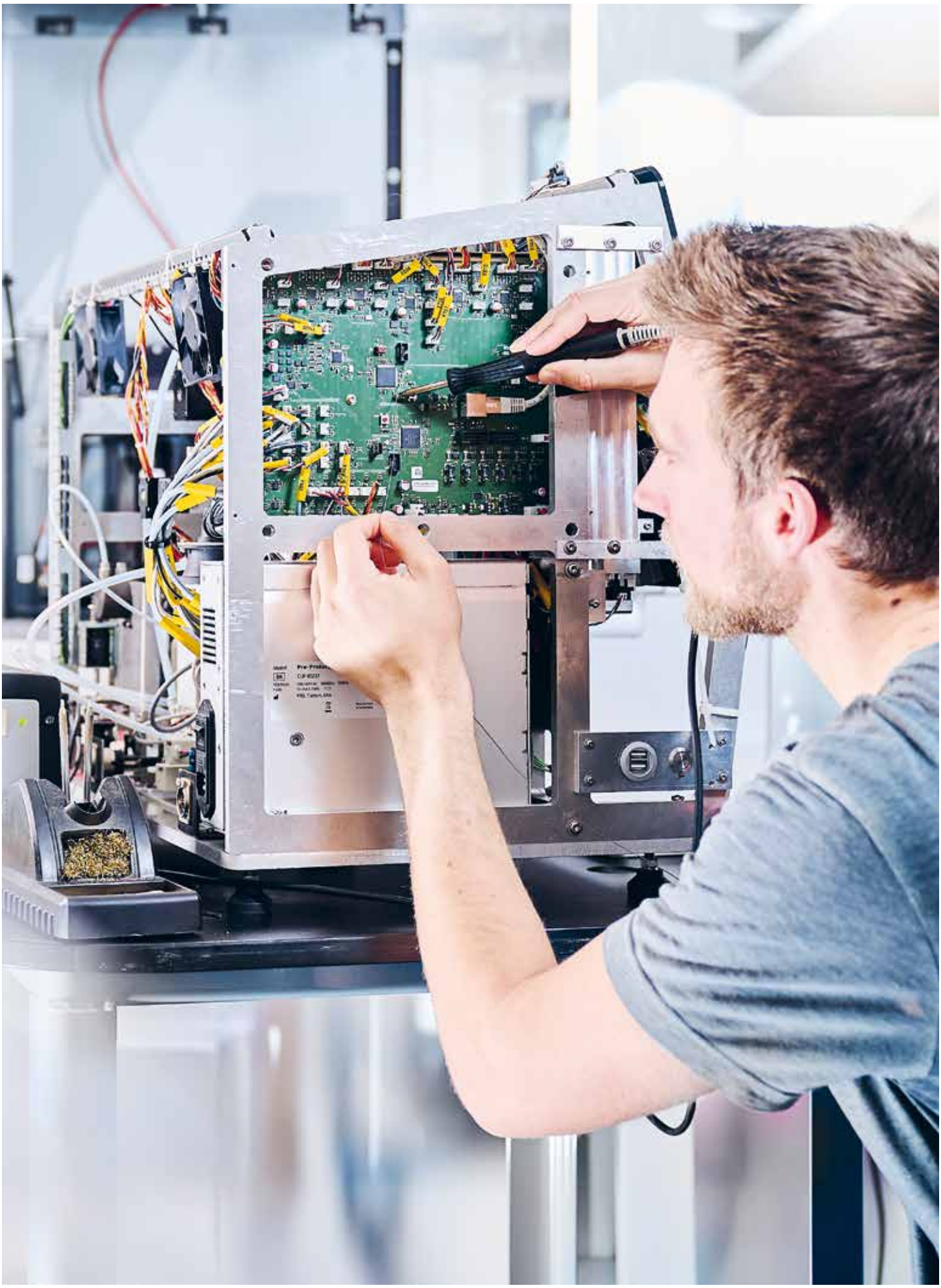
Mr. Noser, are you surprised by this strong growth?

Hans Noser: When we started out as a management buy-out from QIAGEN, we had 44 employees; today we are at 70. We also have access to a network of experienced temporary employees. My original goal was to transform the former development department of a company into an agile and internationally successful innovation driver in the life sciences. That we were able to achieve this so quickly is a dream come true; I didn't expect it. Over the last six years, our market, life science diagnostics, has regularly grown by around 5 %. Our current growth is greater by more than a factor of 3 and we expect to continue to develop at the same order of magnitude in 2023.

Mr. Collasius, what is causing the project volume to increase at a faster and faster rate right now?

Michael Collasius: We feel that the trust in us is growing. A development project for a laboratory automation solution usually takes several years. This means we have only recently been able to complete our first projects with new clients. Manufacturers are now starting to see in practice what they can achieve with us. On the one hand, this is reflected in the fact that clients are expanding their existing projects with us. However, on the other hand, word-of-mouth advertising is starting to take off and, as we all know, that's the best kind of advertising. In larger companies, other departments approach us and contacts who change employers are literally taking us with them to their new company. We are also increasingly contacted before the client has a specific idea of how they want to develop their products and services. We then become their innovation driver and help to create added value for their customers and to open additional markets. You can really feel how this role as innovator inspires our teams.

Hans Noser: For us, trust is the key to success. The solutions we develop are the basis for our clients' future business. No company entrusts something like this to an organization that it has no confidence in. We have been in the market for six years now. During this time, we have always delivered what we promised. In addition to this stability and reliability, we now have more and more project successes. Word gets around. Today, when we talk with a potential client, the people involved have usually already heard of us.



> "The solutions we develop are the basis for our clients' future business."

Mr. Noser, in your view, what part does HSE•AG's strategic orientation play in its market success?
Hans Noser: Focusing our core competencies on implementing biomedical application know-how into device and system functionalities of automation solutions proved to be optimal. For one thing, our clients appreciate the fact that we are technology independent and, therefore, our solution finding is not limited. On the other hand, we also understand the applications in detail. This is why we can discuss things with them on an equal footing and find optimal solutions together. Furthermore, we are also familiar with the demands of manufacturing from our own practical experience, because we have always taken responsibility for production as well.

Mr. Collasius, what do you find particularly pleasing about the development of HSE•AG over the past 6 years?
Michael Collasius: When I decided in 2016 that the personal responsibility of the employees would be at the core of HSE•AG's corporate culture and management methods, I was by no means certain that this would be practicable. But it was intuitively clear to me that as CEO I had to admit to myself that I didn't know everything. So it was only logical that the decision-making responsibility should not be tied to hierarchical roles. It must lie with those who know something about the subject. To see HSE•AG functioning today as a know-how network in which everyone takes personal responsibility gives me great pleasure every day.

How does this manifest itself in the form of work and organization?
Michael Collasius: The teams organize themselves in terms of time and location. There are no rules on attendance times. This self-determination is the basis for the extraordinary commitment that our employees show to client projects and it is one of the reasons for our very low turnover rate of less than 5% per year, compared to the rest of the industry.

Hans Noser: The fact that our teams have always organized themselves independently, regardless of location, benefited us in the pandemic. We were able to switch to full home office from one day to the next without any disruption to projects. For me, too, employee satisfaction based on this personal responsibility is the second fundamental success factor of HSE•AG, alongside customer trust.

> "To see HSE•AG functioning today as a know-how network gives me great pleasure."

Mr. Noser, is there anything that keeps you awake at night at times?
Hans Noser: The question that concerns me most at the moment is how we can continue to find highly qualified employees that are a good match for us. So far, this has always worked out well, but the labor market is becoming increasingly tight.

Mr. Collasius, what is the specific impact of the ever-increasing shortage of skilled workers at HSE•AG?

Michael Collasius: So far, it's not dramatic for us yet. One of the things that helps us with this is our increasingly high profile. We are getting more and more high-quality unsolicited applications. Furthermore, the location also helps us. Switzerland is very attractive for life sciences and engineering specialists. It is the most innovative country in the world. There are a lot of top universities here, international life sciences companies and a vibrant startup scene. In addition, the quality of life is very high. In combination with our corporate culture based on personal responsibility, we offer highly qualified employees an extremely attractive package.

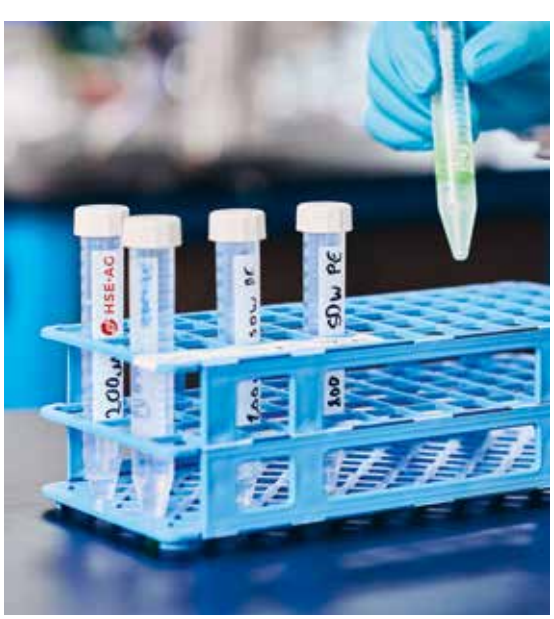
Mr. Noser, what is your greatest joy in relation to HSE•AG?

Hans Noser: What makes me fundamentally happy is the cooperation with the excellent management team. Each and every person is a distinguished expert and, at the same time, the collaboration is extremely factual and solution-oriented. It's never about picking on mistakes or pulling rank, but always about finding the most appropriate solution. The greatest joy in 2022 was that, with FluorEye, we succeeded for the first time in implementing an HSE•AG innovation for a client from the initial idea to a marketable product. It shows that we always think outside the box for each project and that our clients can, therefore, also use us as an innovation driver.

Mr. Collasius, where do you expect the next big boost for diagnostics automation to come from?

Michael Collasius: Artificial intelligence (AI) certainly has great potential. AlphaFold can already predict protein structures of natural proteins with very high accuracy. But I'm also expecting a lot from language models like ChatGPT. The chatbot can not only conduct meaningful sounding conversations or write texts – some of which achieve an exceptionally high standard in terms of content and language. It can deal equally as well with computer language and programs. Of course, the web version available to the public still makes mistakes, but its great advantage is its ability to learn. In the future, we may only need to tell the bot what we want analyzed, and it will then program and operate the device by itself.

"FluorEye shows that we always think outside the box for each project."

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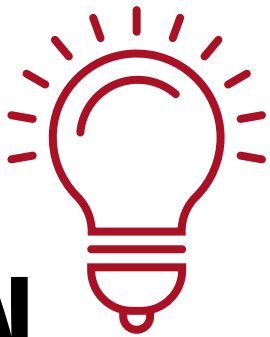


VISION

We help our clients achieve their next scientific breakthrough.

MISSION

By combining our application and engineering expertise, we aim to develop superior tools that enable our clients to understand the key principles of life. In doing so, we implement systems and processes that meet the precise needs of our clients.

PROMISES

We focus all of our energy not only on meeting our clients' expectations, but also on exceeding them whenever possible. They should receive the greatest possible added value and the best possible quality.

The consistent application of our clearly defined processes and the uncompromising implementation of all requirements of our clients and regulators ensure the safety and performance of our products and services.

All of our employees at all levels are required to comply with all applicable specifications of our clients and the authorities and to ensure effective quality management at all times. We want to make a clear difference for our clients through our high-quality services.

To continue to boost our performance, we embrace continual improvement methodologies in compliance with regulatory requirements. We set objectives for the systematic management of these processes and review them regularly.

What do customers and employees think about us?

There are only a few companies that are as broadly positioned as HSE•AG. We work with the most modern tools according to valid standards and norms. This enables us to meet the high demands of our industry.

Reto Himmler,
Principal Electronic
Engineer, HSE•AG

What sets HSE•AG apart from other employers is the proximity to the management. Every employee has one personal meeting per year with our CEO, Michael. This way he knows exactly what is going on at all levels of the company.

Ivan Gehri, Electrical Engineer, HSE•AG

Interdisciplinary, collegial, dynamic

Michael Kühni,
Mechanical Engineer,
HSE•AG

I enjoy working on exciting developments, taking responsibility, and managing my own projects. Thanks to HSE•AG's flexibility, I can work as well as study part-time, which allows me to take even more important steps in my professional life.

Carlos Schönhärl,
Mechanical Engineer, HSE•AG

The best thing about my job is implementing innovative projects with competent colleagues.

Konstantin Lutze,
Chief Technology Officer, HSE·AG

With my background as a mechanical engineer, I can fully exploit my potential as a project manager on both an organizational and technical level and continuously expand my knowledge.

Michael Steck,
Senior Project Manager & Mechanical Engineer,
HSE·AG

Our customers are as diverse as their products and their needs. Understanding these needs and developing complex systems and supporting the underlying biological processes in a small team of experts is what makes my work here so exceptional.

Sabrina Harsch, Senior System Engineer,
HSE·AG

Innovative, reliable and flexible

Global Head R&D,
Personalized Medicine, Lonza

Diverse, solution-oriented, innovative

Dr. Thomas Theuringer,
Head of External Communications, Qiagen

I appreciate the very exciting projects, the good atmosphere and self-managed work.

Caro Drieschner, System Engineer, HSE·AG

Create ingenious innovations –

and turn them into economic solutions

Today, virtually every company in the analytics and life sciences field must overcome two major challenges. Firstly, ingenious innovations are needed to gain an edge over competitors. Secondly, companies must be able to turn innovations into producible and successfully marketable solutions.

If both challenges are overcome successfully, the fast-growing markets promise exceptionally high earning potential. Most companies have one of the two tasks under control internally. The other task often presents itself with challenges. For example, promising ideas and laboratory innovations are almost a given for startups and reagent manufacturers. However, implementing these into efficient and scalable automation solutions is often not one of their core competencies. They therefore need the right partner to bring their products to market quickly and reliably.

Knowledge of new markets requires broad experience

On one side of the offering, there are established technology providers. They have powerful platforms and extensive experience in turning ideas into commercially successful solutions and then marketing them. However, their knowledge of different markets and technologies is often lacking. But this is required to expand the new application areas of their own platforms and to generate additional added value for customers.

They therefore depend on a partner. This partner must have as much practical experience as possible in a wide range of technologies, applications, and markets. In this way, they can help established providers to innovate beyond their core competencies.

Source: Hamilton Bonaduz AG

Growth through specific application solutions

Hamilton Robotics is the global leader in microliter liquid handling and has set itself the goal of continued strong growth. Additional functionalities, among other things, are crucial for successful implementation of this growth strategy. These are used to develop pipetting platforms into automation solutions tailored to specific customer applications.

Leaner and faster processes for Hamilton customers

Through innovation, HSE·AG has been able to ensure that Hamilton can stand out from the competition in the booming field of DNA analysis by offering integrated detection functionality. The so-called FluorEye can determine nucleic acid concentration and sample quality directly during the pipetting process. Hamilton's customers will, therefore, be able to streamline their systems in one additional device and its complex integration. Previously, customers operated the Hamilton robot and the evaluation unit separately, requiring the presence of laboratory personnel. The Hamilton solution eliminates these and guarantees consistent, reliable results through full automation.

Automating and innovating laboratory processes

HSE·AG Engineering focuses fully on the innovation and development of laboratory automation solutions for the life sciences and human diagnostics industries. Their clients span the entire spectrum of providers. Startups use HSE·AG to turn the promise of their technology into a marketable solution. Established specialty providers leverage HSE·AG capabilities to expand their operations into new markets with additional products. For international companies, HSE·AG is the partner of choice to help navigate the complexities of developing a multi-layered next-generation solution in a highly regulated environment.

HSE·AG's unique selling points are exceptional practical understanding of laboratory applications and extensive experience of the development cycle – from creating pioneering innovations to taking on responsibility for production transfer of the devices they developed to a third-party manufacturer.

Understanding of application is key to innovation

Hamilton, the world's leading liquid handling specialist, has chosen HSE•AG as a partner for innovations that go beyond its core competencies in pipetting very small volumes of liquids. For Hamilton's Head of Application Development, Marco Trinkler, the crucial factor for success of their first joint project was trust from the outset.

Mr. Trinkler, what innovation challenges does Hamilton face today as the world's largest manufacturer of automated liquid handling solutions in the microliter range?

On the one hand, we must continuously increase the technological edge in our core competence, which is the automated handling of very small volumes of liquids. On the other hand, we also want to offer our customers additional added value that goes beyond accurate and highly reliable pipetting. Application Development, one of the two R&D departments at Hamilton Robotics, is primarily responsible for this area. We develop modules with specific functions and applications derived from them and, using these, integrate application-specific requirements directly into liquid handling platforms. In this way, we eliminate breaks in the processes, reduce costs for our customers and increase the level of automation of our systems.

"HSE•AG is known for creating innovations for their clients."

Together with HSE•AG Engineering, you have transformed such an innovative idea into a product. How did the idea come about?

We have known HSE•AG for a long time through collaborations in which they co-developed laboratory automation solutions

"HSE•AG knew exactly where the gap in automation was."

for our customers. Therefore, we knew that their engineers and scientists are not only proficient in different automation technologies, but they also fully understand the applications of customer solutions. They know the market and are well-known for not just implementing development orders, but also for creating additional innovation. That's why we invited them to a workshop where we asked them to share their ideas and market assessments with us.

What is the result of the collaboration?

The innovation we have now implemented with HSE•AG is called FluorEye. It is a fluorescence detection solution that can be used to determine the concentration and quality of nucleic acid samples directly in the liquid handling process. Up to now, an additional external device has been required for this. We knew from contact with customers that there was a need for a seamless solution, but we didn't have any ideas for implementation ourselves. Out of the various innovation ideas that HSE•AG presented to us in the workshop, FluorEye immediately appealed to us.

A dedicated lab to drive application-specific enhancements

Marco Trinkler is Head of Application Development, a department in the Robotics Business Unit and part of Hamilton Bonaduz AG. In 2014, he was tasked with setting up this independent R&D department, with a focus on application-specific laboratory automation. In 2016, the first Application Lab became operational. In the meantime, more than 80 engineers and scientists are working on the development of application-specific functionalities and processes, tailor-made for the company's liquid-handling robots. With these enhancements, Hamilton specifically addresses customer application needs that go beyond pure liquid handling. They are essential to allow one of the world's market leaders for pipetting robots to continue to grow at an above-average rate in the booming laboratory automation sectors.

Collaboration between HSE•AG and Hamilton: FluorEye

"We were always able to have fair and open discussions, even when there were differences."

Microliter heart of laboratory automation

Hamilton is a leading global manufacturer of intelligent ventilators, automated pipetting robots and sample storage systems as well as measuring instruments for biopharma processes. For example, Hamilton's liquid handlers form the robotics hub of numerous laboratory automation solutions. The company, which has sites in Reno and Boston (USA) and in Domat-Ems and Bonaduz in the Canton of Grisons (Switzerland), intends to use this leading position as a basis for expanding its activities with innovations into additional market segments.

In your view, what is the economic potential of FluorEye?

Nucleic acid analysis is one of the fastest growing laboratory automation segments. Reliable and accurate determination of the concentration and quality of the samples is fundamental for virtually all applications, from high-throughput sequencing and gene editing with the CRISPR/Cas method to PCR tests for viruses or gene markers. From their many years of experience developing corresponding devices, HSE·AG knew exactly where the gap was in the continuity of automation in all these applications, and they thought about how this gap could be closed as effectively as possible.

However, a good idea is far from being a successful product. How big were the development risks of FluorEye and how did you deal with them?

For one thing, HSE·AG was able to prove the biological function of the concept when the idea was presented, and the functional model had already been shrunk to the small dimensions required for integration into our platforms. This showed us that the developers really understand our applications and those of our customers. Also, we already had a great deal of certainty that the system would work. We also jointly undertook risk sharing prior to the start of development. HSE·AG assumed all technical risks in the process. Our part was the market risks. We carried out a detailed market analysis. Development costs and realistic sales expectations were weighed against each other.

HSE·AG and you do not necessarily have the same interests. Anyone who develops an innovation usually wants to sell it as costly as possible.

That is certainly the case and is legitimate. However, our negotiations were extremely fair and transparent. We were able to work together with a solid foundation of trust right from the outset. It was clear to both sides that successful cooperative development of the system would only be possible based on a mutually fair division of risks and benefits. It was also important to have clear rules for escalation in the event of conflicts. These inevitably arise in this kind of project. However, we were able to have fair and open discussions, even when there were differences. Therefore, we always found a solution that both parties could stand behind.

An innovation team at the pulse of applications

HSE·AG Engineering does not just limit itself to handling development orders as effectively and efficiently as possible. The company also invests in its own innovations, which it then makes available to clients. To this end, a team of scientists and engineers – the Innovation Guild – continuously analyzes current laboratory applications for market and automation gaps. Based on these evaluations, concept proposals are then developed and consolidated into an iterative process. The most promising concepts are ultimately developed to the level of functional models, and the innovations developed to that point are then presented selectively to potential clients.

To share the risks and benefits fairly, it is also necessary to agree on how the intellectual property behind the innovation will be used and compensated.

For us as Hamilton, it was very important that HSE•AG had already applied for the patent rights for FluorEye at the start of the project. The competitive edge that FluorEye will bring us was therefore safeguarded. Ultimately, we agreed on a licensing model for exclusive use. With this, Hamilton pays royalties and HSE•AG shares in the market success. As you can see, mutual trust and risk sharing come into play here as well.

Three ways to benefit from innovation

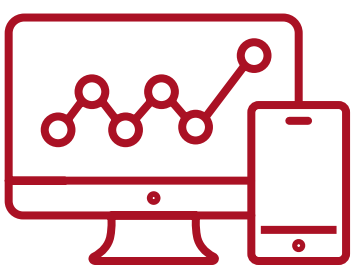
Clients basically have a choice of three different models for how they can use innovations from HSE•AG. With the OEM model, HSE•AG produces the components, provides supply chain and change management and delivers the product to the client ready for use. With the license model, the client is responsible for production. The licenses can be paid for, for example, by revenue sharing, on a per-unit basis or by flat rate time. If the client wants to use the innovation exclusively, an asset deal is also possible, in which all rights are transferred to the client.

The innovative idea evolves into a functioning product

Close cooperation throughout the development helped to solve emerging problems in a goal-oriented manner. HSE·AG implemented the project using its tried and tested agile approach, which is characterized by great flexibility, clear structures, and complete documentation. For Hamilton, confidence increased as development progressed.

Certifiability ensured from A to Z

Structured processes and complete documentation are a necessary means for ISO 13485:2016 certified HSE·AG to achieve the certifications often required in the laboratory environment. In addition, HSE·AG is convinced that they pay off even if an application does not address a regulated market at first. For one thing, market opportunities can quickly arise that make certification necessary. Documenting afterwards is much more time-consuming and cost intensive. Furthermore, applications that do not need to be certified also benefit from carefully structured development processes with complete documentation. In this way, a solution can be developed further in the long term and maintaining it also becomes much more economical. HSE·AG has many years of experience with all relevant certifications for the laboratory environment and can, therefore, ensure processes are as efficient as possible.



For both partners, it was clear that the development project had to be tackled by HSE·AG's engineers in close cooperation with Hamilton's product and quality managers. "If we had taken the approach of handing in a requirements specification and then expected HSE·AG to deliver the functional product by a fixed date, this would certainly have meant failure of the project," Christian Danuser notes.

As the responsible product manager at Hamilton, he sat on the project's steering committee together with the project manager and CTO of HSE·AG, Konstantin Lutze, and with the Head of Application Development at Hamilton, Marco Trinkler. Furthermore, Felix Westhoff, another experienced HSE·AG project manager, provided an additional perspective from the outside in an advisory capacity. "Having another pair of eyes looking at the project from a distance was extremely valuable," Danuser reflects.

An agile approach easily enables the switch to home office

HSE·AG implemented the development using its tried and tested scrum approach, which is adapted to the special requirements of device development in the life sciences field. With a sprint length of 1 month, the two project teams agreed on what to work on every 14 days. A task management platform was used for coordination. Danuser was impressed: "HSE·AG is taking a very modern approach. They work in a very structured way and also document everything accurately." This was demonstrated, among other things, by the fact that in vitro diagnostic (IVD) processes were used with stage gate meetings and regular reviews, even though the product itself was not intended for a regulated environment. Furthermore, geographical proximity was important for us. We were happy to be with HSE·AG in just under 90 minutes by car, if needed. Shipping a pipetting platform within Switzerland to test FluorEye was also very easy and fast. We were also able to have valuable meetings (wearing FFP2 masks) on site, even with the travel restrictions during Covid-19.

This clearly structured approach based on defined processes and with complete documentation in all areas paid off in an unexpected way. A few months after the start of development, the Covid-19 pandemic broke out. The transition to a completely virtual collaboration was successful, with no problems at Hamilton or internally at HSE·AG. Even temporary changes of project managers at HSE·AG did not result in any delays.

Problem solving through open discussions on equal terms

Danuser also had a very positive experience of dealing with problems that inevitably arise in a project of this magnitude: "The development project has also reinforced the trust that was already present from the outset and has further strengthened the business relationship. Lively discussions are par for the course in a project like this to create the best and most economically successful product possible."

The finished system consists of a detector unit that is the size of a cigarette pack, which can be transported with Hamilton's tip adapter, and from a base station. Concentration is measured by analyzing fluorescence excitation of dyes that intercalate into nucleic acids. A quality control standard, among other things, is built into the base station. It guarantees the process reliability required in the life sciences field.

Transfer of know-how enables further independent development

After completion of the project, Marco Trinkler's Application Development R&D was able to take on technical responsibility for FluorEye. Adaptations due to new requirements or changes to individual components will now be made by Hamilton's specialists themselves, as Trinkler notes: "Thanks to the intensive collaboration, we have the necessary know-how to now maintain and further develop FluorEye ourselves. HSE·AG will support us in this on an ad hoc basis." Meanwhile, HSE·AG's engineers and scientists are needed elsewhere. They will be working on a new joint innovation project with Hamilton.

Surprising optical technology, Bluetooth connectivity and battery management

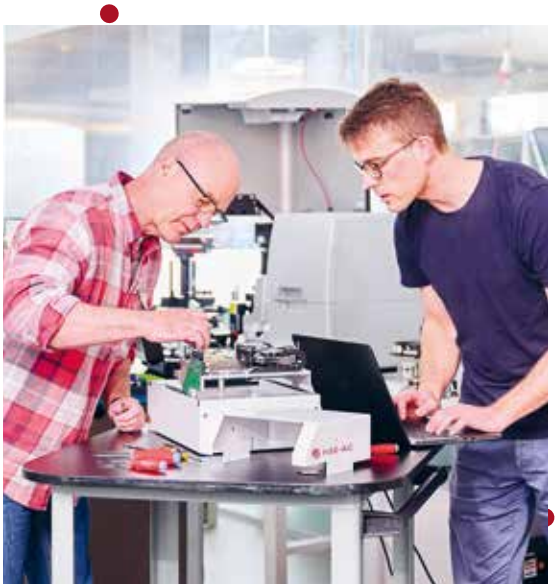
FluorEye uses confocal fluorescence measurement technology for detection. Intercalating dyes are added to the measurement samples. The confocal sensor can then simultaneously initiate the sample from above and measure its fluorescence signal. This makes sensors possible that are small enough to be mounted in a detector unit that can be transported with a Hamilton pipetting tip adapter.

Low-energy Bluetooth is used to transmit data from the detector unit to the base station. However, a trick was necessary to ensure secure pairing of the base station with the measuring unit. We used RFID (Radio Frequency Identification) technology for this to avoid having to perform energy-intensive Bluetooth pairing each time. This makes coupling as simple as possible for the customer and also secure. Coupling with another device or even another FluorEye module is, therefore, eliminated. Battery management also proved to be challenging. A special module was required to enable reliable checking of the battery status. This means that it is now possible to specify precisely at any time how many measurements can be performed in the current measurement mode.

Ensure efficient production of the innovation

In the FluorEye project, HSE·AG was also responsible for the entire transfer from development to production at Hamilton, including quality assurance. It was an unexpected major challenge for both sides because of Hamilton's vertical integration. The project was successfully completed togeth-er, and a new, exciting innovation project is already being implemented based on the findings.

The transfer of device development into an existing production is complex and requires a lot of experience. The requirements increase in parallel with the manufacturer's vertical integration. "A specialty of Hamilton is that, unlike our competitors, we produce many of the components and assemblies of our devices ourselves," notes Marco Trinkler, Head of Application Development: "This allows us to create much more value, or rather a deeper value chain." At the same time, however, the large vertical range of integration makes it difficult for third parties to integrate manufacture and quality control of products into the processes."



Mutual learning enables successful completion

"We had both underestimated how much of an impact our particular business model would have on the transfer project. In the meantime, however, we have also learned a lot from each other," Trinkler reflects. It was crucial to define the interface between Hamilton and HSE·AG for all work packages in the right place. Hamilton can carry out production-related tasks, such as setting up a workspace, much more efficiently than external parties. In the meantime, a comprehensive responsibility matrix has been defined. "This phase has also shown how much trust the cooperation with HSE·AG is based on. The challenges that inevitably arise in these types of projects were always discussed openly and productively."

The success of this first joint innovation project is also reflected in the fact that a new project that is even more comprehensive has since been launched. "We will also be able to benefit from the lessons learned from the FluorEye project," says Trinkler, looking to the future. This includes integrating various Hamilton standards, for example for the electronics board, into the development and subsequent transfer to production.

Shared ambition to enable cutting-edge technology for customers

For Trinkler, it is clear: "Life sciences are evolving at an increasing pace. Currently, the previously distinct areas of diagnostics and medical research and development are increasingly merging into one. Diagnostics, therefore, requires earlier and earlier access to new technologies. With our innovations, we need to enable our customers to establish themselves and stay at the front in this race."

The partner ecosystem ensures quality and safety

HSE·AG is not only an extremely experienced development service provider. The company also has many years of experience in production supply chain management. Clients can, therefore, also hand over responsibility to HSE·AG for production of their solutions from A to Z. In this case, they also benefit from, among other things, a global partner ecosystem that has been built up over many years and includes all relevant technologies. As a result, the necessary quality can be ensured in all areas at an optimized cost-benefit ratio, and customers have the assurance that the products will meet market and regulatory requirements.

Facts and Figures

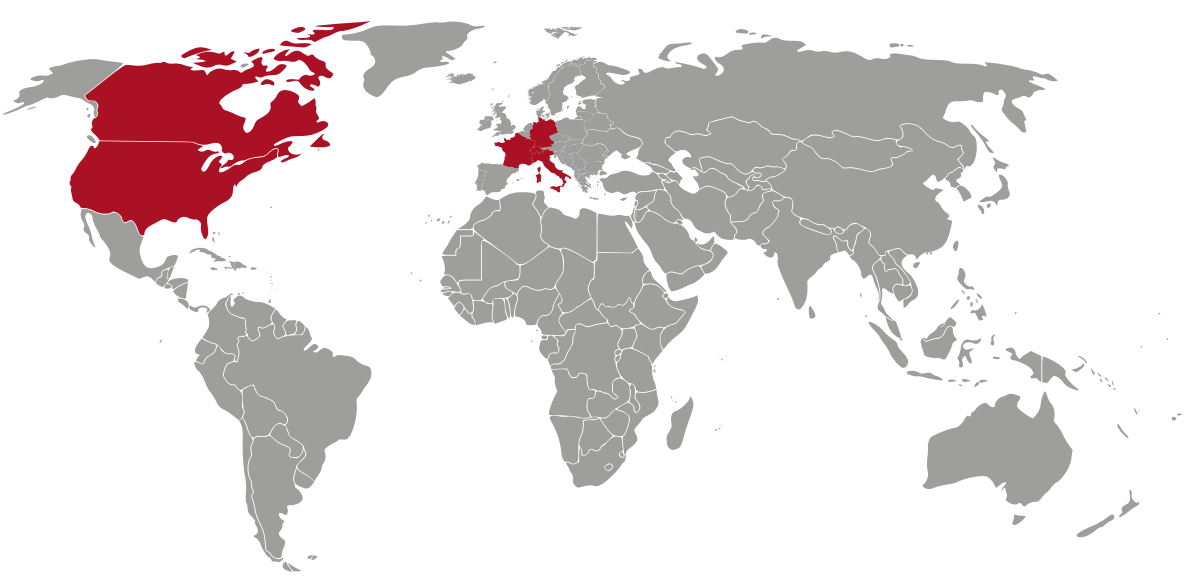
More than 10 major clients in a variety of countries in Europe and North America used HSE·AG's services in the financial year 2022.

Revenues increased from CHF 12.49 million to CHF 15.34 million. The service business grew by 15%. The ratio of gross profit to operating profit (EBITDA) is 11%.

The financial strength of HSE·AG increased further, with the equity ratio rising from 26% to 33%. During 2022, all debts were repaid, and capitalized goodwill was reduced from CHF 836,262 to CHF 5,519.

The increase in financial strength is reflected in the fact that current assets grew by CHF 0.9 million, while borrowed capital reduced by CHF 0.4 million.

The calculation includes normal accruals and depreciations, where necessary.



Project locations
Switzerland, Germany, Italy, France, USA, Canada

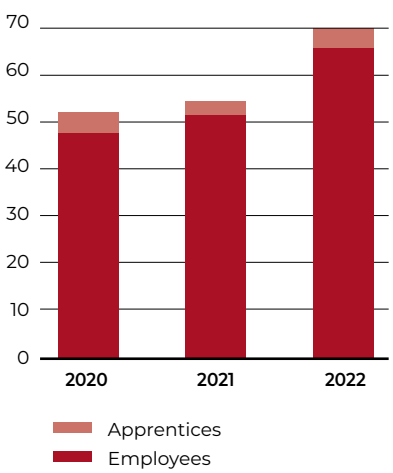
80 %

Employees participating in HSE•AG.

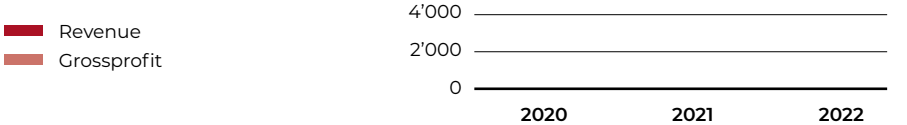
70

Employees

Employees



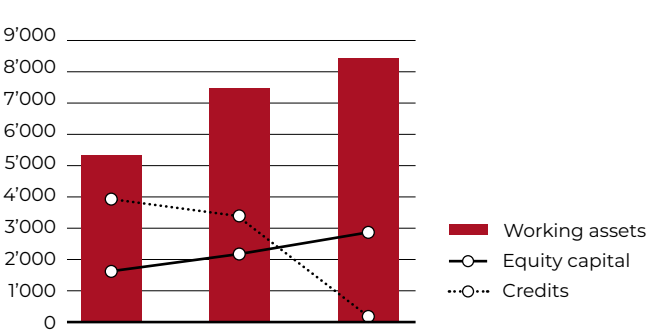
Revenue / Grossprofit



33 %

Previous year: 26 %
Self-financing ratio

Balance figures



112

Previous year: 47
Liquidity factor

(in CHF)	2022	2021
Appropriation of profits	2,011,857	1,509,518
Net profit	565,688	502,339
Available retained earnings	**2,577,545**	**2,011,857**

Payment of a dividend of	187,000	
Allocation to the legal reserves		
Allocation to the free reserves		
Carried forward to new account	2,390,545	2,011,857
Available retained earnings	**2,577,545**	**2,011,857**

Audit of the financial statements
The annual financial statements of Hombrechtikon Systems Engineering AG for the financial year 2022, which covers the period from January 1, 2022 through December 31, 2022, were audited in May 2023 by Treucontrol AG as external auditors in accordance with the Swiss Standard on Limited Audits.

Risk assessment
In the first year of its existence, HSE·AG established a quality management system in accordance with ISO 13485:2016 for the development of IVD (in vitro diagnostic) systems. This was successfully recertified in November 2022. Risk management is an integral part of this system. To identify both risks and opportunities at an early stage, HSE·AG regularly reviews internal and external factors across the entire corporate environment. The financial data determined for the financial statements in accordance with the Swiss Code of Obligations and the risk-related financial figures in accordance with the regulatory requirements form the basis for this review.

Employee competencies
HSE·AG has an exceptional breadth and depth of expertise among its staff. Its employees come from 10 different countries. Their competencies cover the entire spectrum of technology and project implementation requirements for the development of life sciences and diagnostic solutions based on molecular biology. In combination with many years of experience, they represent a crucial competitive advantage for HSE·AG.

Employee development
In 2022, the workforce increased from 55 to 70 employees. Four of these are apprentices. The turnover rate remained below 5%. The fact that additional employees could be hired shows that HSE·AG is well positioned in the extremely competitive international labor market for highly skilled professionals.

Employee participation program
The employee participation program is an important cornerstone for the long-term business success of HSE·AG. Selected employees can acquire participation certifica-

tes through this program. The value of these is strongly linked to the success of the company. Around 80% of HSE·AG employees have taken the opportunity to participate in the company to date. This high proportion shows that employees also have great confidence in the sustainability of the HSE·AG business model.

Development value Participation Program

After the fourth financial year, the value of the participation certificates is 32.46 times (2022: 33.46 times) the original nominal value of CHF 0.01. As the return over the last three years is taken into account, and a below-average return was achieved in 2022, the value decreased this year.

For the year 2022, a profit distribution of CHF 187,000 will be paid out for the first time. This represents 5.3% of the net asset value of HSE·AG.

THANK

ANDREA URS CHRISTOPH STEFAN TAMAR SEBASTIAN DAVE TZU-LUN ANDREAS MARCO MARIO MARCEL JENS SELMA JENNY LOTHAR KENT KATJA PRAHLAD CEDRIC KRZYSZTOF ANJA ROBERT JUERGEN KAI LEDI KRYSTYN RON JULIAN THOMAS KATARZYNA LAURA HANS CLAUDIA TOMMY CINDY CHIARA OLOF FREDEKE MATTHEW RON MARIA ALEXANDRA RENÉ-ALEXANDER MARTIN KATHARINA ANDREAS EMMANUEL ANDREAS PER-OLA IULIA ANDREAS WINFRIED FRANCESCO MATTHEW DANIEL LINE SILKE PALANI ADIL MARKUS SYLVIA ANDREAS HUSEYIN CARSTEN TANJA RALF MARKUS MARC KRISTEN UWE KONRAD LICEN MARC-ANDRE JENS ADEN ERIK KIM ALEKSANDR FRANK MICHAEL ROLAND GEORGE GAVIN PATRICK OLIVIA DIANA BENITO RAVISHANKER MARY JANE BENJAMIN SUBHO METEHAN MARIO TONI NICHOLAS MARTIN JERZY PETER NICOLA BARTHOLD IAN ALEXANDRE TOMAS ONDREJ JYOTSNA JULIA MIKE LARRY FRANÇOISE CHRISTIAN JACQUELINE MARK DANIEL IZABELA AUTRI BARRY HANS-RUDOLF JÜRGEN PASCAL ENRICO KIM MICHAEL FRANCESC JOACHIM MATTHIAS URBAN NICKI KALMAN PIERRE PHILIPPE PEDRO MARCO HUGO MORITZ PAUL MARKUS ANA-PAULA MICHAEL BLAIR BENJAMIN DANIEL BETTINA ZULEMA DONNA ELMAR LUCAS MANUEL RUSSELL NARASIMHA THOMAS FLORIAN YANN ÖZLEM MICHAEL UGUR UDO KATARZYNA MARTINA JODIE TIMO ANDREAS JONATHAN ALEJO DANIELA STEVE MARTINA FRANÇOISE HELGE KAROLINA JONATHAN MARCEL SACHIN ZULEMA ANDREW JASON MIKE GERARD JANINA EMMANUEL OLIVER PETAR SHCHERBA DOMINIQUE CHRISTIAN SEBASTIAN JOHN MASAE PATRYCJA CELINE STEVE ANASTASIOS UWE CHRIS ELIAS SEBASTIAN FALKO JULIE RAFAEL STEFAN PATRICK JAKUB ALESSANDRO BABSON MARKUS STEPHAN QUI AHTISHAM BERNHARD IRIS UWE HENNA SIMON NACHIKET URS PETER JING WOLFRAM FABIENNE YANELI STEPHAN KAI MICHAEL DANI LUKAS ANDREAS ROLAND TILMAN RENE ANNEMARIE VOLKER ERWIN AXEL THOMAS PERRYN YASHA KATRIN SABRINA RACHEL WENDY NARENDRA MARC LENA PAULINA LAURA MARTIN KAREN BRAADEN ANDREA DAVID A. ARMIN MURIEL ROLAND KIMBERLY SERGE STEPHANIE GARY CHRISTOPH KATRIN EMMANUEL CHRISTIAN ROLAND JOACHIM MARCO ADRIAN VALÉRIE ALEXANDRA THOMAS SASA JAB KINGA REMO THOMAS SEBASTIAN HECTOR MICHAEL MICHAEL CLAUDIO MARK ERICA CRISTINA FALKO MARISSA JAVAHERI NIK NEETIN COREY PAUL BILL ANTONIO STEFANIE GINTAS MIRKO CHRISTOPH THOMAS JULIA CHRISTIAN ADRIAN JASEN LEONEL ALBERT WOLFGANG INGRID KATHRIN MARK ALEX BERND KATHARINA STINE ARMIN RUDOLF RAJ CLAUDIA MICHEL JÜRGEN THORSTEN JOHN JORDI PAM SUNDU RICHEAL ISABELLE MATTHIAS JONAS KATARZYNA THOMAS RÜDIGER ANDREAS JONATHAN AARON MARIO KENNETH PETROS PAUL CLAUDIO RAMOLA JEAN PASCAL WOLFGANG BABETTE DAGMARA VIOLA ALICJA CAROLA RUTH JIAYAN ANDREW THIERRY MEGAN AIDEN MARTIN JENNIFER V. ANDREANA SVEN MICHAEL CHRISTIAN DANIEL FRANK BRIAN ROLAND NUALA VOLKER JUDY PETRA LANCE MARTIN MARC CHRIS RICARD JULIA CHRISTIAN BOON CHIM HENDRIK JIE JILL VASYL NILS A. CHRISTIANE BERNARD MEI CRYSTAL MARTIN THOMAS CHRISTIAN WOJCIECH RACHEL ANDREAS FRANCIS JASMIN CHRISTIAN MARC JENS IVO ANDREAS NAMITA BETTINA MARK IVANA MARCEL GABRIELE LARS ANNA ANDREAS THOMAS MARTA ERIC THOMAS CHIARA TILL HINA

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